

DESY-II Testbeam Facility

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for the

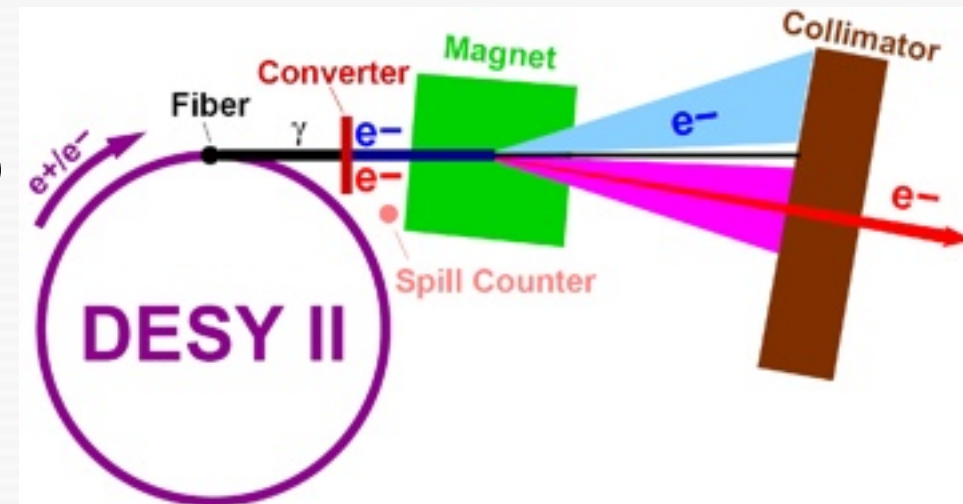
DESY Testbeam Coordinators





The DESY Testbeam Facility

- Facility fed by DESY-II synchrotron
- Bremsstrahlungs / conversion beam with E_e up to 6 GeV
- Beam momentum steered by magnet current by test beam user.
- Rates depending on beam line, energy, target material, collimator setting and operation.







Beam availability

- DESY-II synchrotron
 - $\sim 99\%$ uptime during scheduled runs
 - Main purpose: Injector for Petra
 - Testbeam is parasitic user
- Beam structure
 - 1 MHz clock
 - Basic magnet cycle 12.5 Hz (accelerating from 450 MeV to 6.3 GeV)
 - 1 bunch per fill (30 ps)
- Interruption during Extraction for Petra (sec-min)
 - Otherwise almost DC beam (no spill structure)



Unique Infrastructure at DESY

- TB21 & 22 both provide a pixel telescope
 - Complete Package (Hardware, Trigger, Reconstruction software)
- Dipole Magnet in TB 21
 - For tracking studies
- 1 T Solenoid for putting detectors in a magnetic fields
 - Internal diameter 85 cm
 - Moveable
 - Possible to install pixel telescope

Solenoid



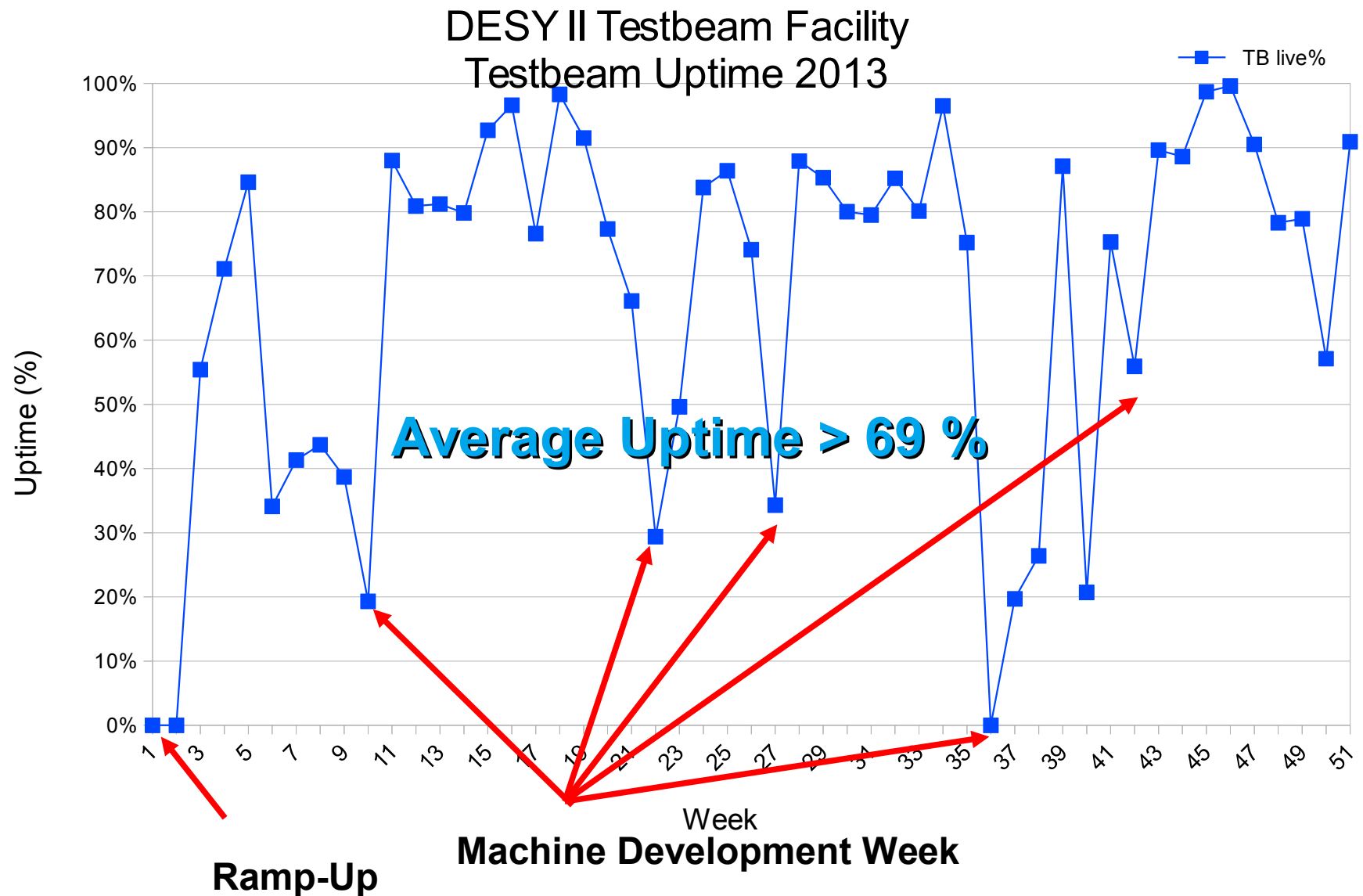


2013 in Numbers

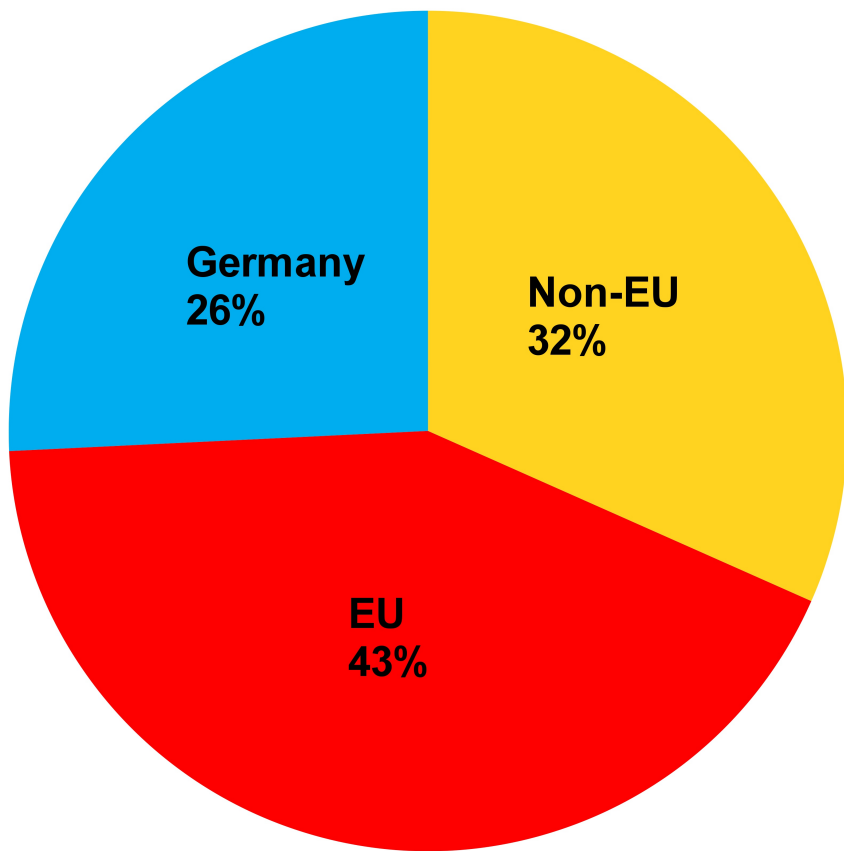
- Period of Jan 2013 – March 2014
 - 49 Calendar weeks
 - 123 User weeks in total
 - 7100 Testbeam hours
- ~ 400 Users in total
 - 55 % new users
- Average Testbeam live > 69 %
 - Beam availability of DESY-II (>99%)



Facility is well used ..

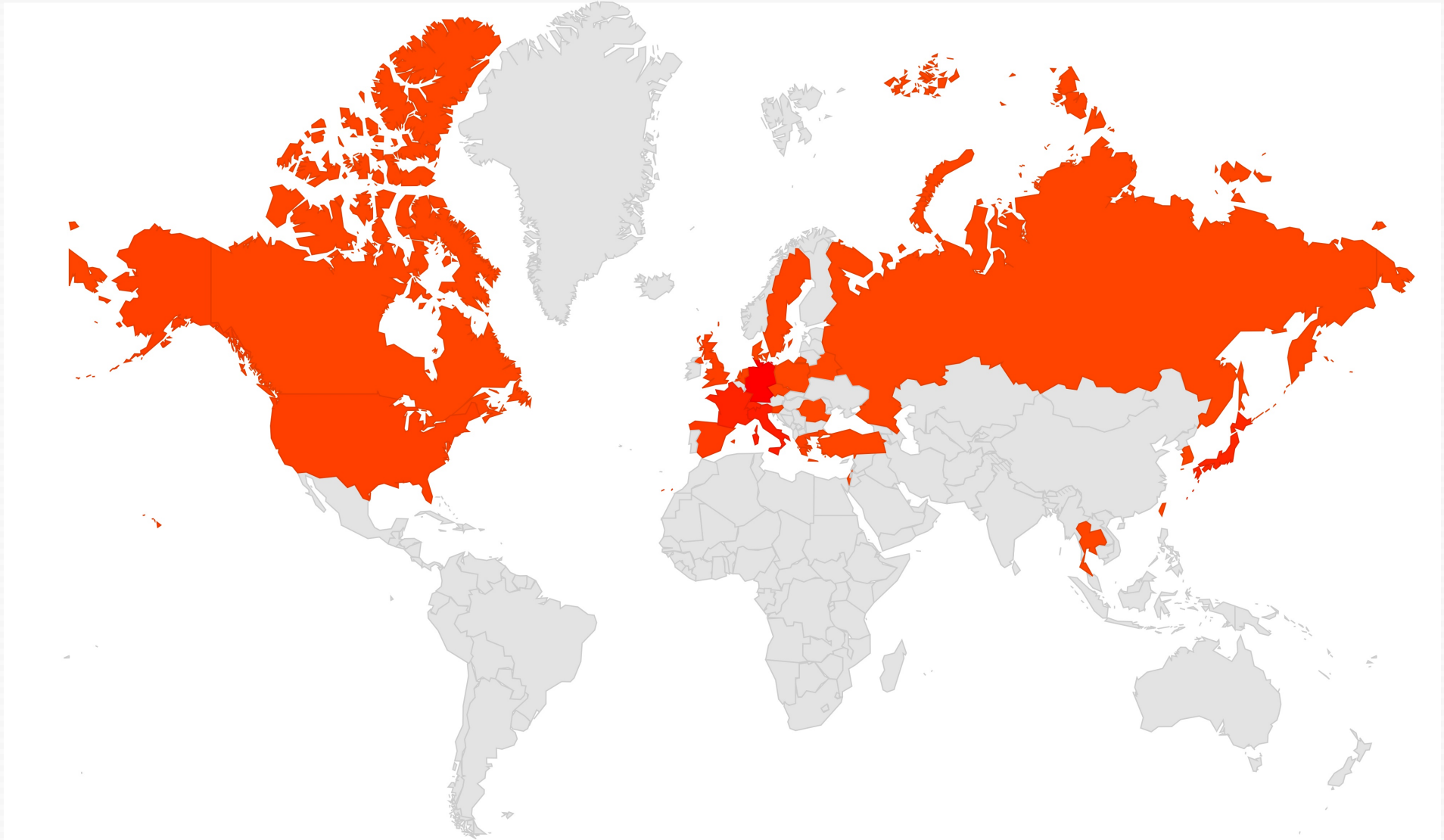


User statistics



- AIDA Transnational Access
 - 21 % Users received AIDA support
 - $\sim 1/2$ of the EU Users
- Countries of origin
 - Users from 24 countries
 - Top 5: Germany, France, Italy, Japan & Switzerland

Users from across the globe

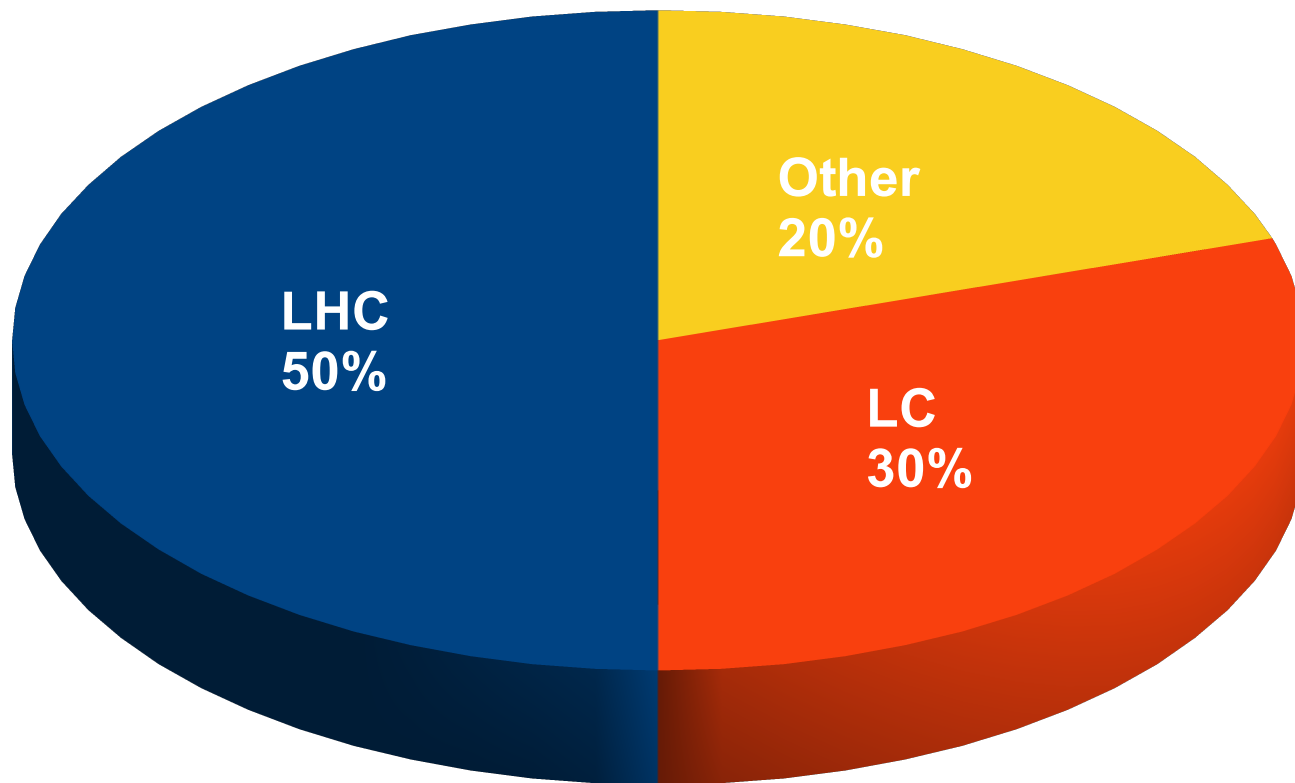




User communities

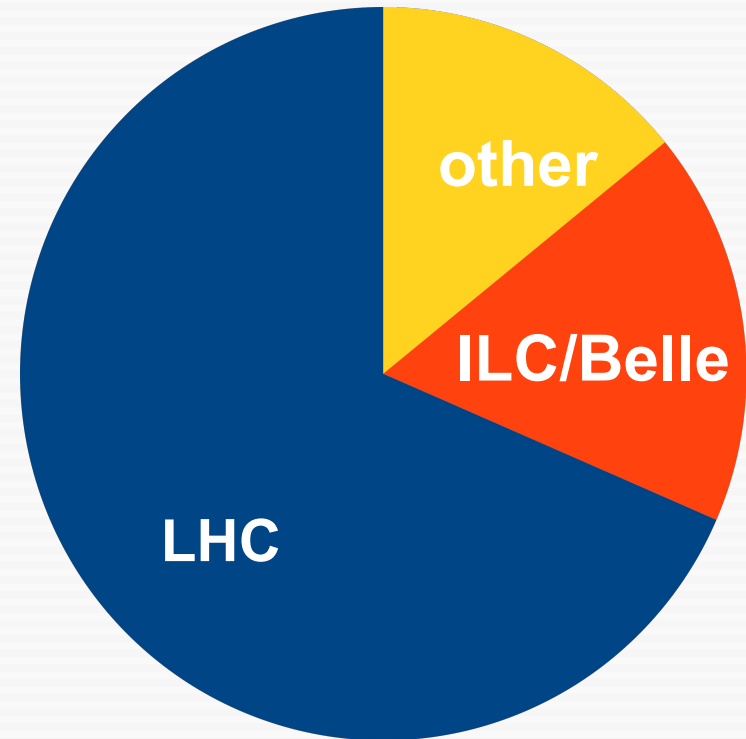
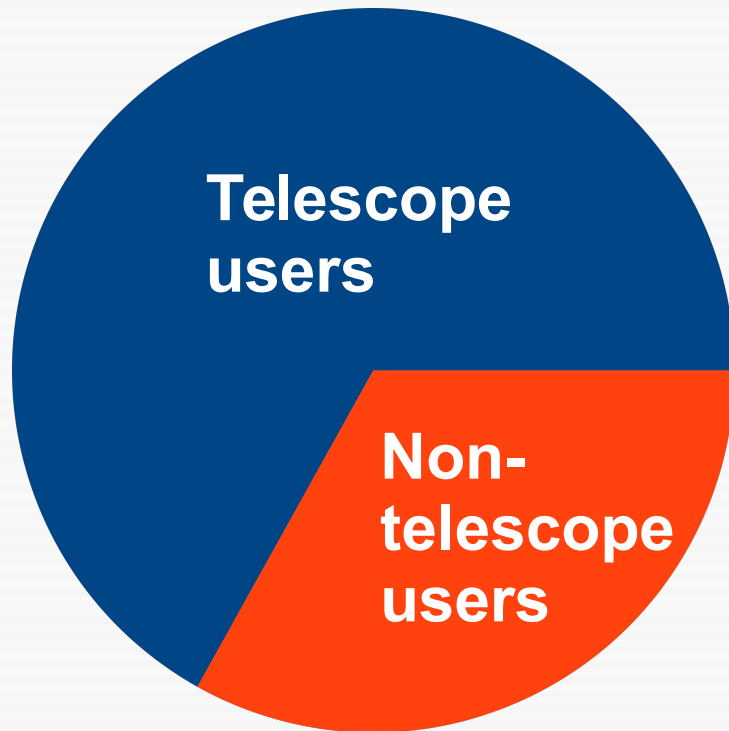
DESY-II Testbeam Facility

User Communities



>95 % of the Users come from HEP experiments

Telescope Users



Period January 2013 → March 2014

- 2/3 of user groups use pixel telescopes
- 2/3 of telescope user groups from LHC community



Status & Plans

- Shutdown 2014
 - Started in March
- End of Shutdown driven by PETRA-III extension schedule
 - Project is still on Schedule
 - So PETRA-III will resume operation between December 2014 -February 2015
 - DESY-II Schedule tied to this
- Testbeam most likely not before November
 - Worst Case January 2015
- DESY Directorate discussions ongoing
 - Committed to offer "as much Test beam as possible giving financial constraints"



Shutdown Projects 2014

- The shutdown gave us the opportunity to do some improvements (and some cleaning up)
 - New flooring in the areas
 - Upgraded Vacuum pumps
 - New Carbon Fiber Targets
 - New Magnet controllers and PC's
 - Cameras in the areas (already in 24/1 now everywhere)
 - Beam Monitors
 - DACHS
 - Laser Alignment System
 - And by popular request : new phones



Changes for the Users - DACHS

- Several changes mandated by Safety Dep.
 - Interlock handling
 - Enforcing of training checks
- Most important
 - DACHS cards now required for all Users
 - Access to the Huts / Keys / Part of the Interlock
 - As DACHS cards will have information on safety training (a.k.a. No Training → No Access)
- To come
 - Removal of ZZ (Controlled Access with Keys)
 - Interlock system switched to DACHS



DACHS Con't

- One time only
 - Users need to register in DESY Database (PIP)
 - DACHS card gets issued (valid > 10 years)
- Safety course
 - Annually
 - Status is stored in DACHS System
- New system for us
 - Expect minor hick-ups in the beginning





Other changes

- Updated Safety Course
 - Legal requirement to cover a few more items
- Radiation Safety department will now insist on proper documentation (English/German)
 - They'll not accept shipments without this information
- Testbeam rates and Magnet Currents in TINE
 - Stored in Database
 - Can be logged
- Even better beam than before :-)



AIDA 2020

- AIDA2020 is currently being prepared
 - Successor of AIDA
- DESY-II Test Beam Facility
 - Increased Funding for Transnational Access
 - Support for Telescopes
 - Modest improvements to the infrastructure
- Proposal is submitted in September
 - So we'll hear back from Brussels in early 2015



How to apply for beamtime

- Send an email to
 - testbeam-coor@desy.de
- Testbeam coordinators will try to accommodate everybody
- There is an annual call for testbeam time
 - Subscribe to
<https://lists.desy.de/sympa/subscribe/testbeam-info>
- Lots of information at
 - <http://testbeams.desy.de>
 - Latest Schedule
 - Updates, Instructions



Summary

- DESY-II Testbeam facility offers
 - 3 beamlines with 1-6 GeV electrons
 - Unique Infrastructures
- 2014 Shutdown is currently ongoing
 - Many improvements to the Infrastructure
- Plans from Winter 2014 onwards
 - Run start tied to PETRA-III Schedule
 - Some operational changes planned
- Updates to the Users to be announced on the mailing list
 - As soon as we know



Rates

DESY Testbeam rates

