

# Status of the DESY Grid Centre

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DESY IT

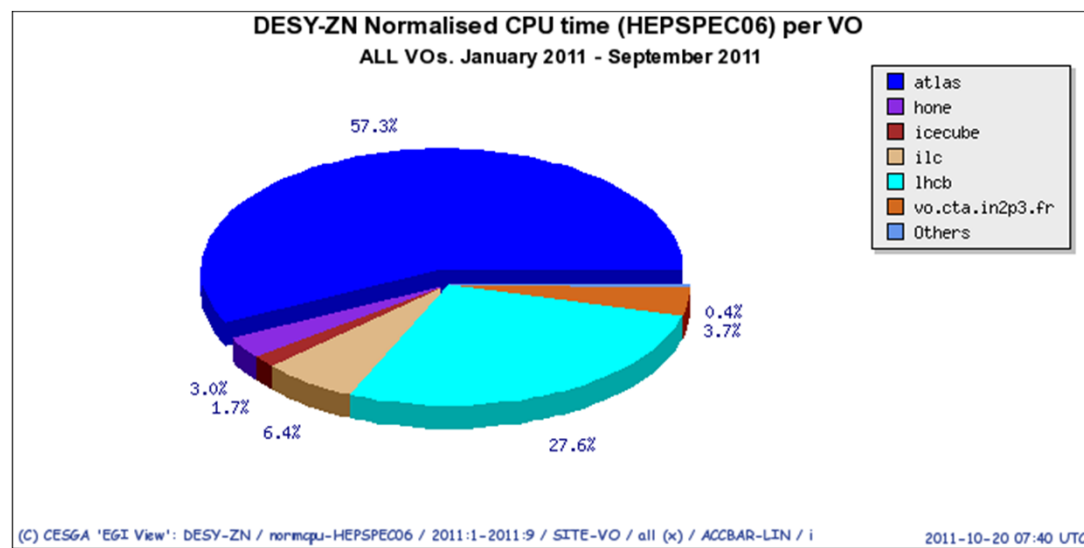
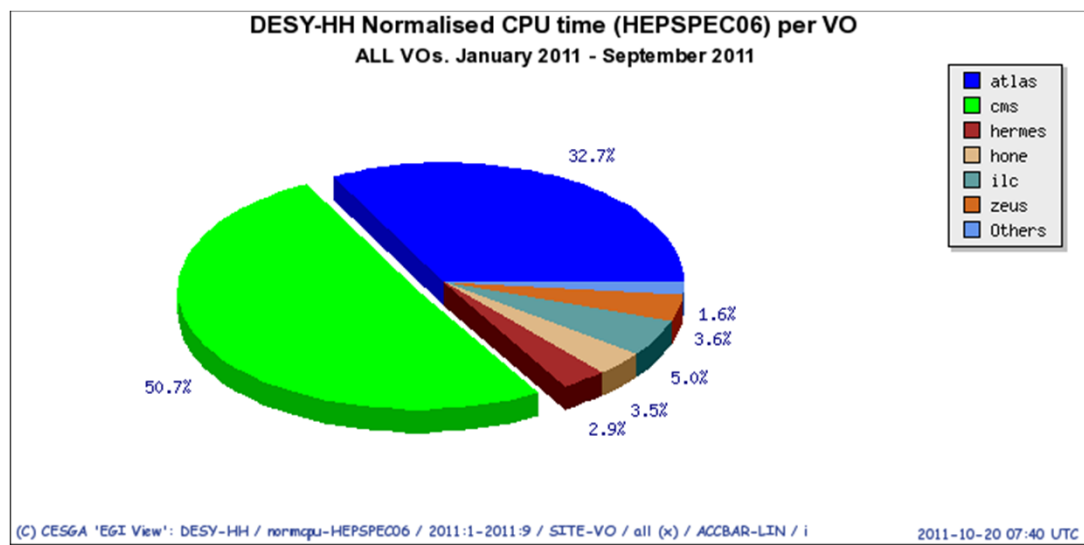
Hamburg, October 25th, 2011

# Outline

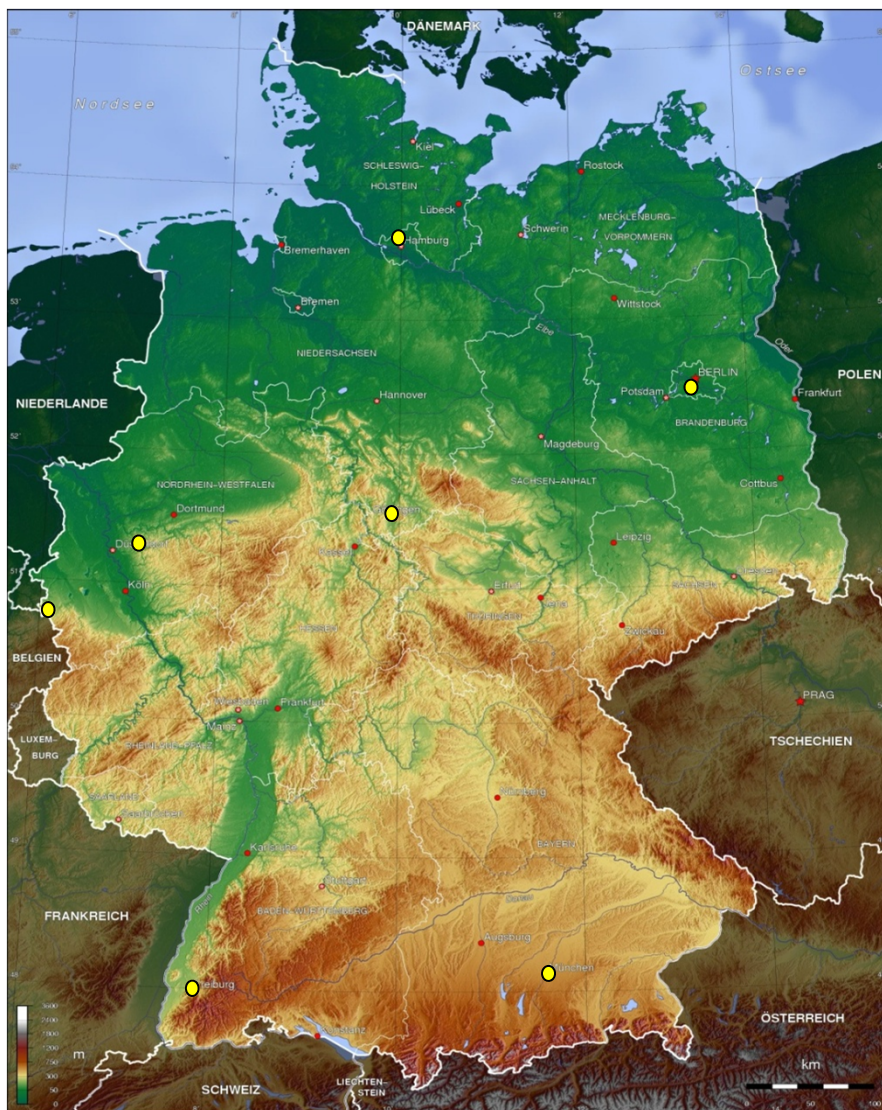
- > The 2011 DESY Grid centre status
- > Requests and Pledges for WLCG
- > The NAF@DESY
- > PRC relevant IT-Projects @DESY
- > The German Tier 2 situation
- > Summary



# DESY Grid Centre usage by VO



# The German T2's (Atlas, CMS, LHCb)

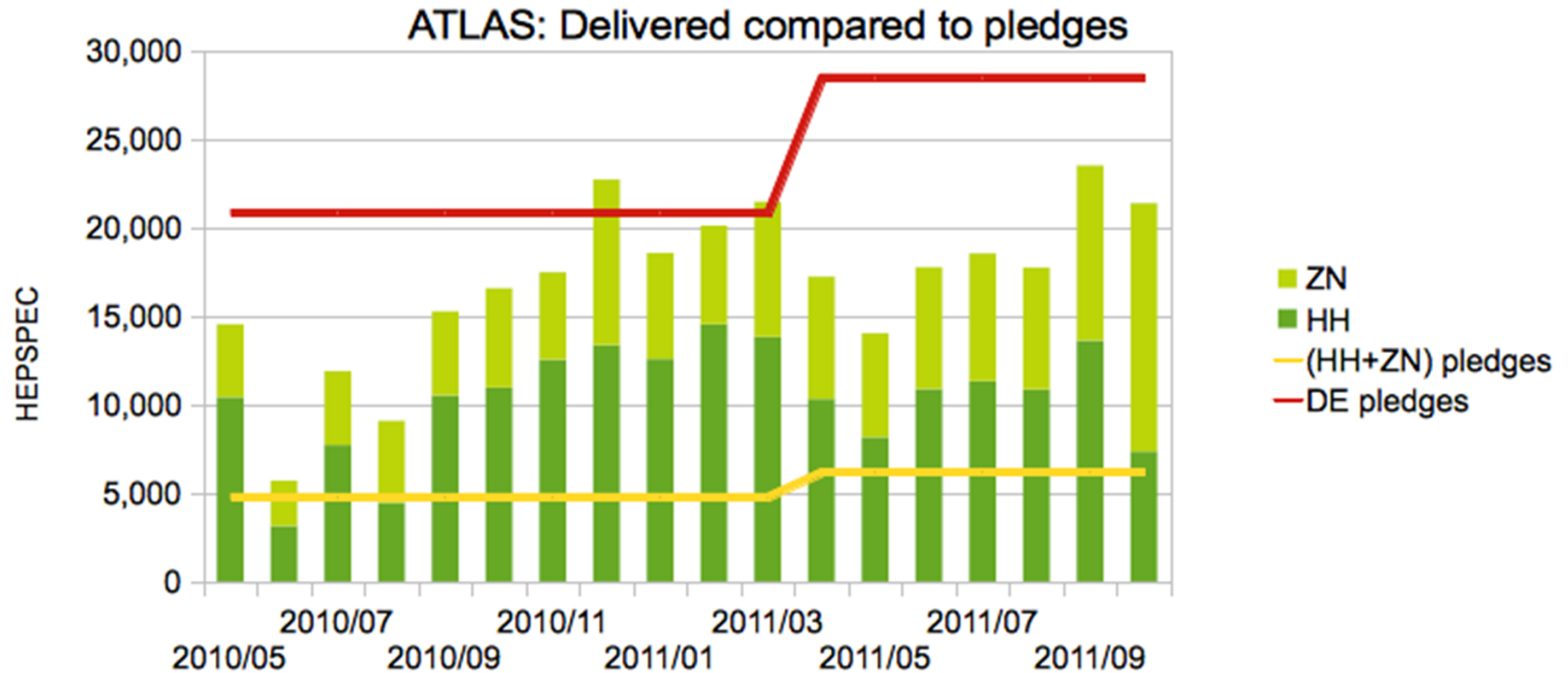


## Pledges for Germany

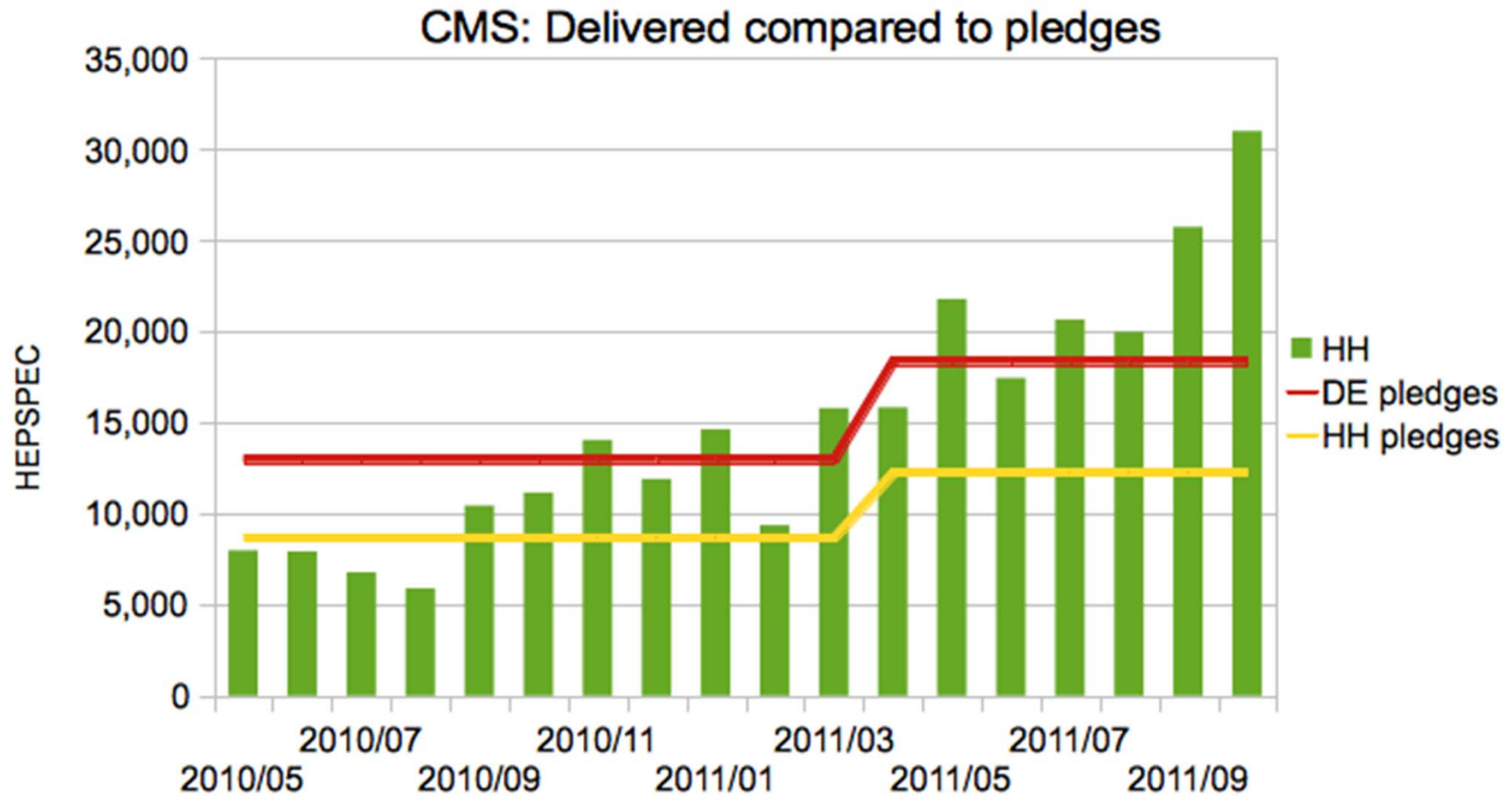
	CPU 2012 [HS]	CPU 2012 [% Tot]	Disk 2012 [TB]	Disk 2012 [% Tot]
<b>A DESY</b>	12000	5	1500	3
<b>C Aachen/DESY</b>	23625	8	1950	8
<b>A Goettingen</b>	3853	1	1000	2
<b>A Munich</b>	11560	4	1340	3
<b>A FR/Wupp</b>	8860	3	1566	3
<b>L DESY</b>	3200	7	2	10
<b>Summe CMS</b>	23625	8	1950	8
<b>Summe Atlas</b>	36273	13	5406	11
<b>SumDESY</b>	29950		2852	
<b>SumNonDESY</b>	33346		4506	
<b>Grand Tot Atlas-T2</b>	266000		47000	
<b>GrandTot CMS- T2</b>	315000		26000	



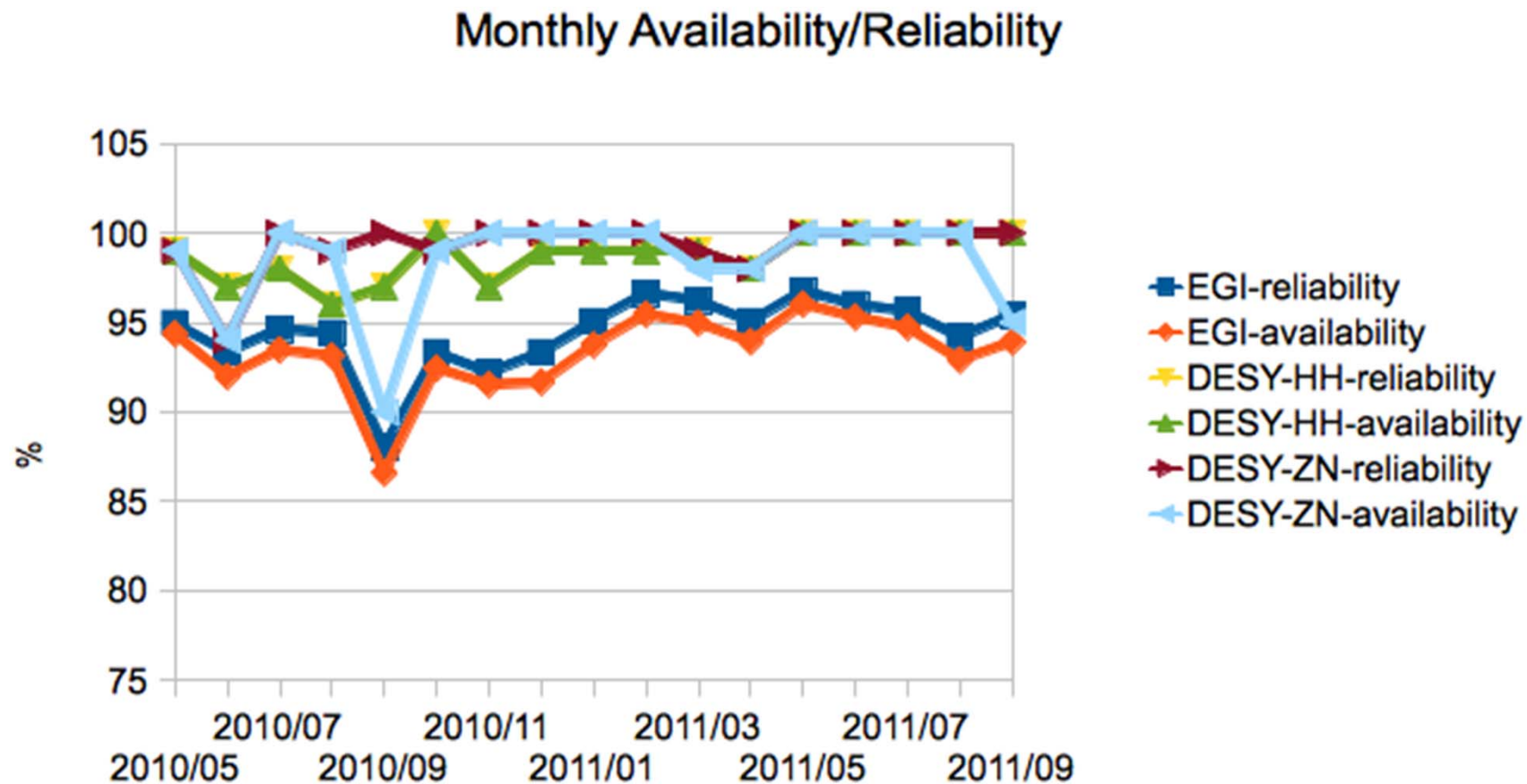
# Atlas delivered vs. pledged CPU resources@DESY



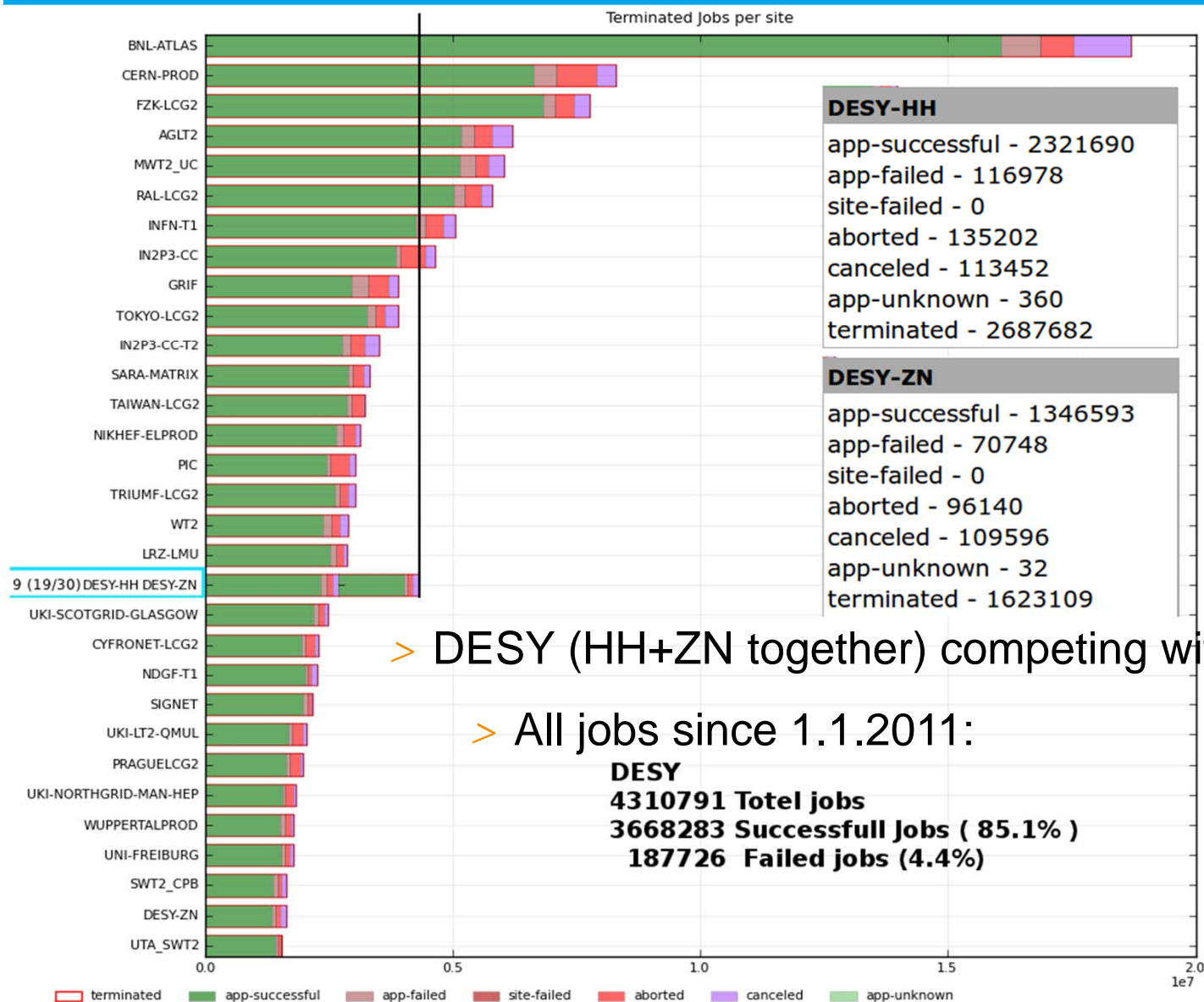
# CMS delivered vs pledged computing



# DESY T2 availability/reliability from WLCG monitoring



# ATLAS: DESY and German Cloud contributions (1)



> DESY (HH+ZN together) competing with ATLAS T1's

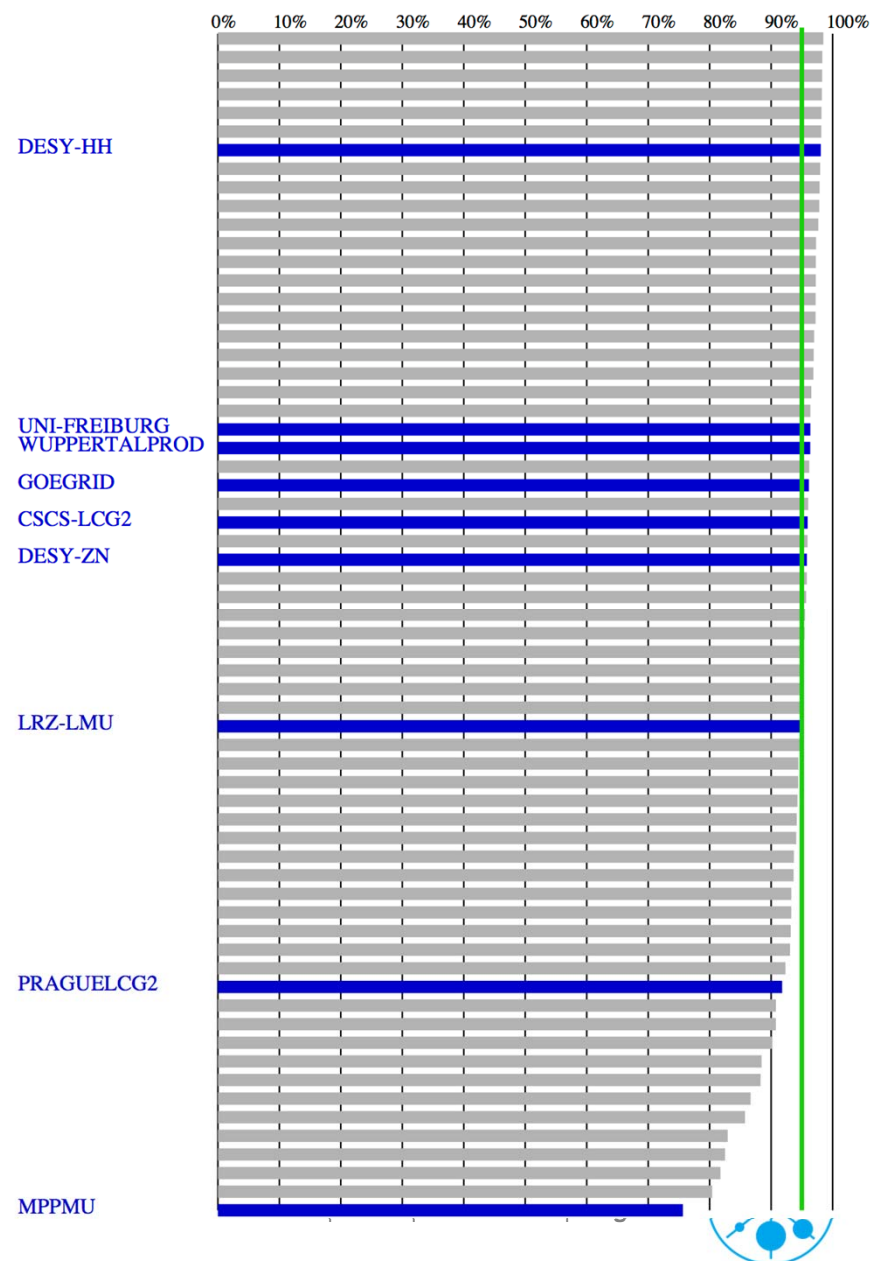
> All jobs since 1.1.2011:

**DESY**  
**4310791 Total jobs**  
**3668283 Successfull Jobs ( 85.1% )**  
**187726 Failed jobs (4.4%)**

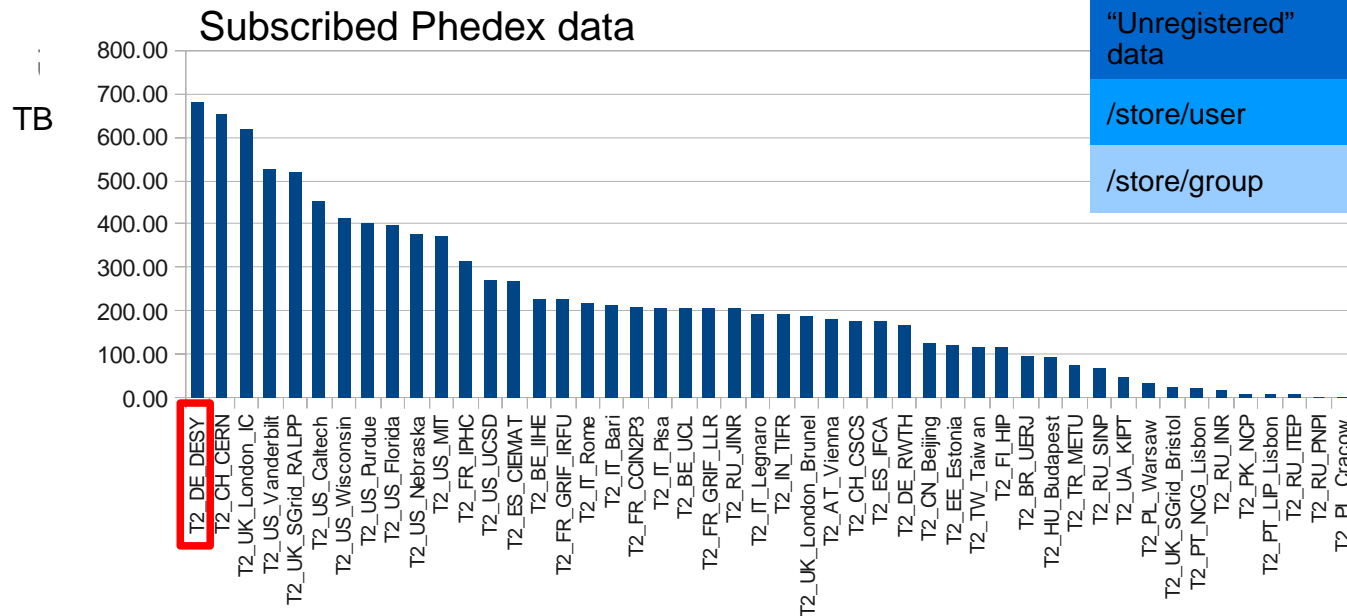
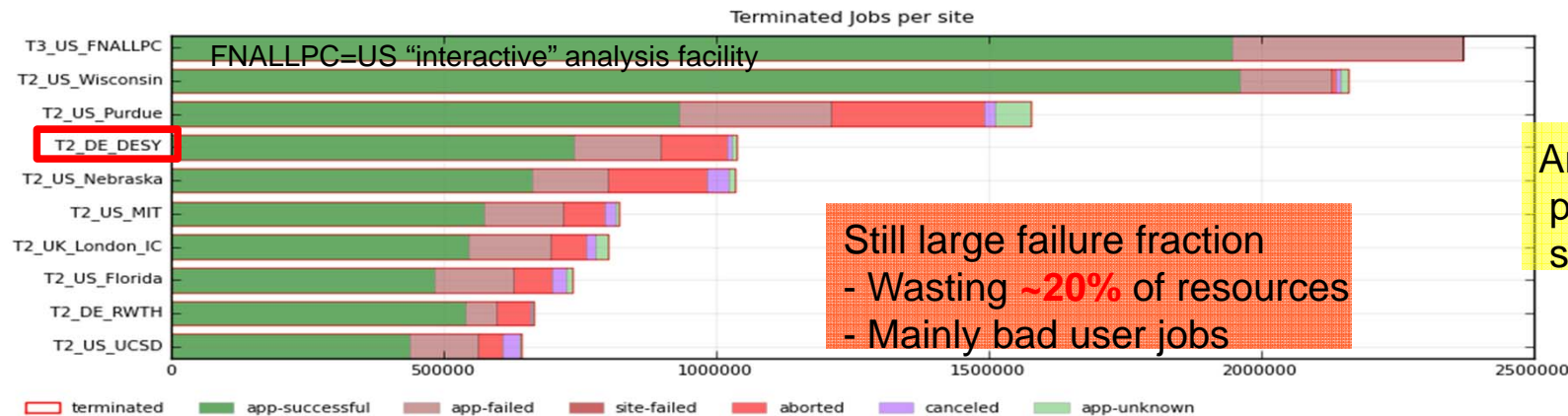


# ATLAS: DESY and German Cloud contributions (2)

- > Excellent reliability:
- > ATLAS GangaRobot hourly tests:  
Expect 95% reliability
  - Aug&Sept 2011, all ATLAS T2



# CMS Tier-2 Contribution

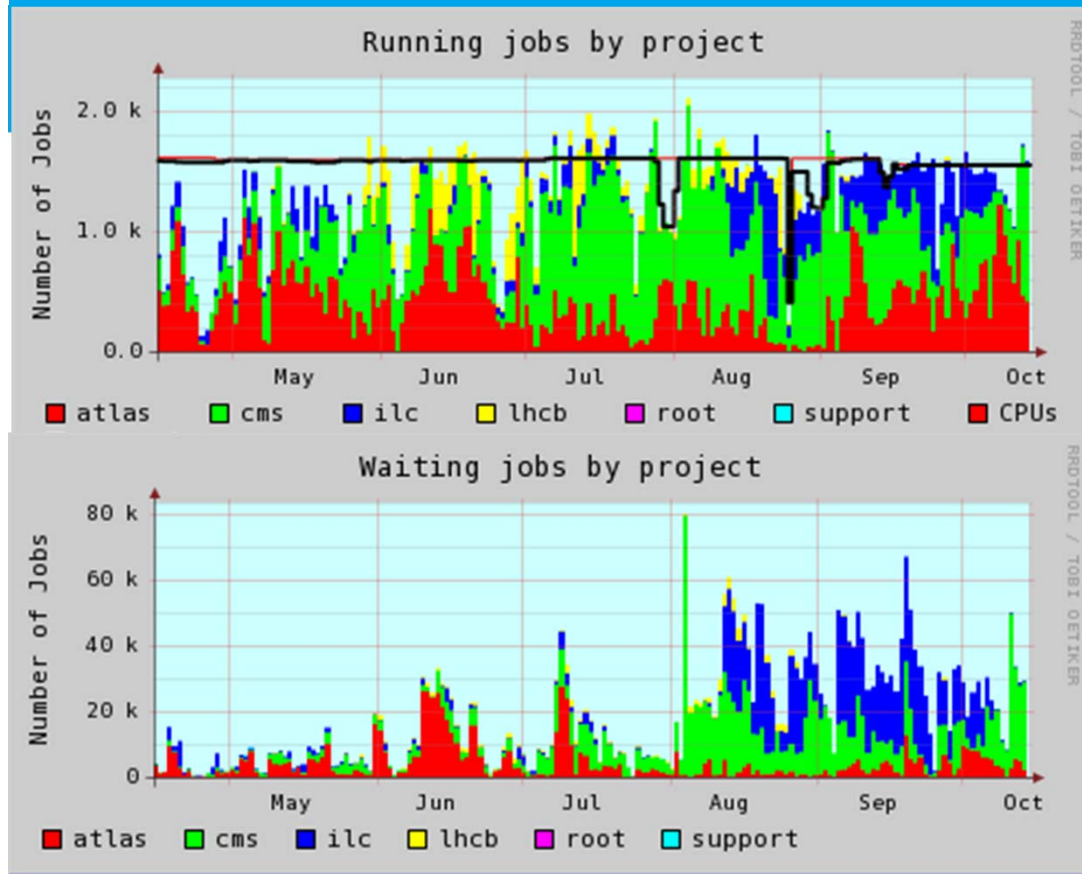


"Unregistered" data	DESY[TB]	RWTH[TB]
/store/user	290*	113
/store/group	14	78

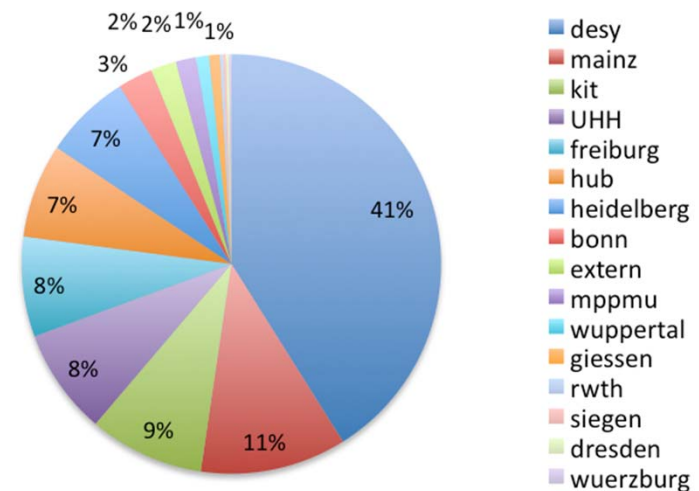
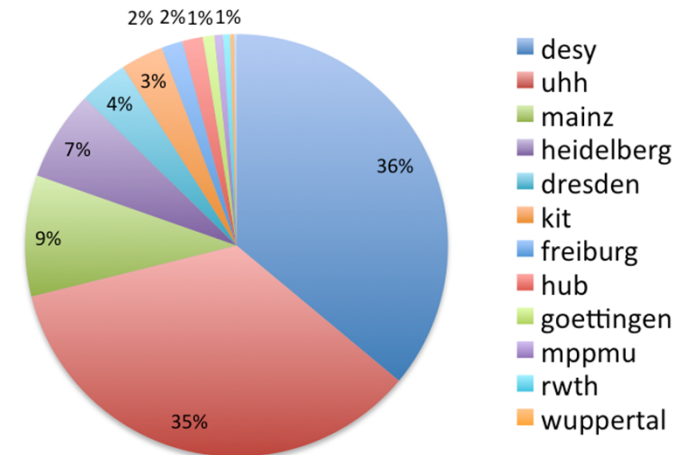
- Very good performance  
- DESY is a very important CMS Tier-2



# NAF usage



- > NAF well utilized.
- > Operation very smooth and reliable since last PRC
- > UHH/CMS strong user (own purchases!)



# NAF CPU resources

## > Total (with recent purchases)

- 41.3 kHS06
- 3000 Slots
- Huge contribution UniHH/CMS

NAF purchases given to experiments according to the key 4 ATLAS / 2 CMS / 1 ILC / 1 LHCB

## > Detail on purchases in 2011

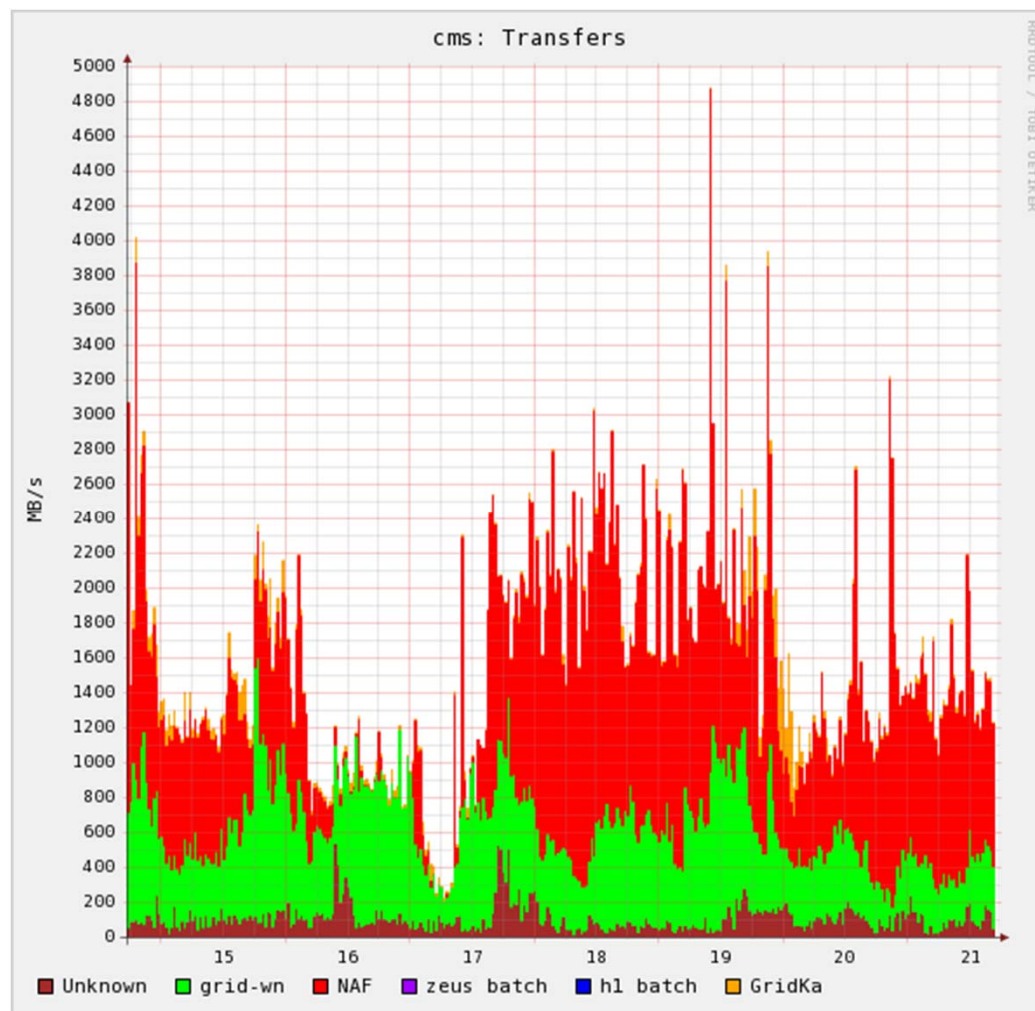
- 7.8 kHS06/576 cores: 0.5 replacement, 0.5 enlargement beginning 2011 (from DESY budget)
- 3 kHS06/192 cores: mostly replacement in Zeuthen recently (from DESY budget)
- 9.2 kHS06/672 cores: upgrade in Hamburg recently (from DESY budget)
- 9.2 kHS06/672 cores: upgrade in Hamburg recently (from UniHH/CMS group!)

## > Plan for 2012

- Await technology change end 2011 (AMD Interlagos) / 2012Q1 (Intel SandyBridge), planning end of 2012Q1
- In 2012: Plan for additional 10 kHS06



# Datatransfer from Storage Element (1 week sample)



# Future plans for the NAF

- > Replacement of Lustre file system
  - call for tenders ongoing
- > Strengthen NAF reliability, availability and performance
  - reduce impact on the HH-ZN WAN network connection
  - make two NAF parts more independent
- > New features for NAF, requested by users
  - e.g. Fast X-Connection, collaborative tools, ...
- > Hardware enlargement plans: See slide “NAF CPU resources”



# PRC relevant IT-Projects@DESY

- > Helmholtz Alliance until end 2012
- > Tier 1 for Icecube and Computing for CTA in Zeuthen
- > LHCone: Initiative to connect T2's and T3's, needs more experience and monitoring for further decisions
- > European Middleware initiative (dCache) until mid 2013
- > Large Scale Datamanagement project starting in 2012
- > Active role in HPC- initiative of the HGF (may end in funding)



# The German Tier 2 Situation

- > Funding of the NAF@ DESY secured through base investment
- > Funding of Tier 2's@DESY secured through base&capital investment
- > Funding of ½ Tier 2 @MPI secured
- > Funding of Universities' Tier 2: Invest only secured until mid 2012

Different ideas are under debate, DESY may be asked to act as a coordinator



# Summary

- > The DESY-Grid-Centre again was very reliable
- > The DESY T2 Centre is larger than some T1's centres
- > The DESY T2 is very attractive because of the available data
- > The NAF was used intensively and nationwide
- > The NAF is in the process of further development, major upgrades took place and are planned
- > dCache is still the major working horse for LHC datamanagement and DESY has the lead
- > DESY is very active in attracting 3rd party money
- > There is still an open financing issue for the Universities' Tier 2 after end 2012

