

# The NAF: Past, Present, Future



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## Some history

- > Helmholtz Alliance “Physics at the Terascale”
- > More resources for German LHC physicists
- > NAF should be at DESY
  
- > Two sites for LHC computing at DESY: Hamburg and Zeuthen
  - Idea: If the NAF is something for the whole German community, and hence somewhat external to DESY, why integrating it into either Hamburg or Zeuthen? One could create a new facility, somehow virtually placed between Hamburg and Zeuthen?
- > Worked to some extend: Collaborative effort between Hamburg IT and Zeuthen DV



# Why changing something in the setup? Changes since 2007

- > Changing needs from users
  - More interactivity (like NX)
  - More collaborative tools
  - More development and debugging
  - Closer integration into site specific setups
  - No real need for a distributed setup, only making things more difficult
- > Experience from running the NAF since 2007 “as is”
  - No benefit from distributed setup between HH and ZN
  - Impact from WideArea: Induces latency and adds complexity
  - Three out of four experiments concentrated to one site
  - Need a better integration into site specific workflows
- > Changes in DESY landscape
  - HH and ZN: additional focus (with same manpower): Photon Science and AstroParticle
- > What will **NOT CHANGE: NAF is open for ALL German LHC/HEP institutes!**



# How? A very broad picture (oversimplified)

## DESY HH site

- Batch system
- AFS cell
- Application support
- Support team

## DESY ZN site

- Batch system
- AFS cell
- Application support
- Support team

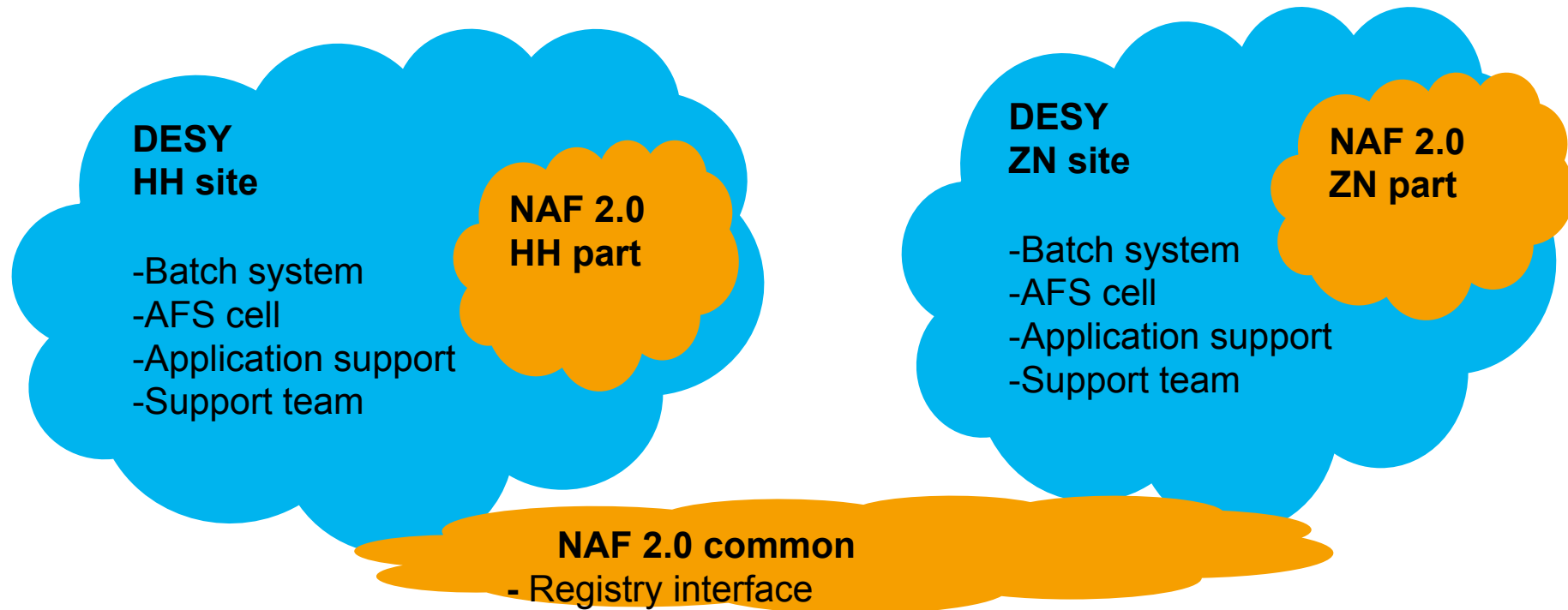
## NAF "as is"

- Registry
- AFS cell
- Application support
- Support team

(in reality the two DESY sites are not as separated as shown here)



# How? A very broad picture (oversimplified)



(in reality the two DESY sites are not as separated as shown here)



## First consequence:

- > Two (slightly different) WGS and batch system setups
  - Will probably not hit CMS and ILC (Hamburg-based) and LHCb (Zeuthen based), and will only use resources at one site
  - Will impact ATLAS, as distributed over two sites
  
- > Discussions with ATLAS for some time now on how to organize ATLAS and NAF 2.0 best
  
- > DESY review committee made clear statement that NAF computing for ATLAS should be consolidated at one single site
  
- > Decision: Hamburg will enlarge resources to offer a complete NAF for ATLAS in future
  - Affects NAF CPU, Lustre/Sonas and ATLASLOCALGROUPDISK
  - Will start purchases in early 2013
  - Does not affect current NAF, but will affect NAF 2.0



## Consequences for all experiments \_ 2

- > Remote graphical tools will come.
  - Office in Hamburg, WGS in Zeuthen (or the other way round, or office at CERN, or some other place ...) should be OK, no performance penalty
  - This also means “plain ssh” instead of gsissh – in the first phase.
- > Will add gsissh and further “gridified” tools as GridFTP for Sonas later
- > Support has shown to be a crucial and controversial subject
  - The NAF will change from an “exotic infrastructure” to a “mainline IT/DV system”. More people within IT/DV will know about it.
  - Support at all levels (First-level UCO -> Experts) should be faster and more detailed
- > DESY offers quite some services
  - Now unavailable for the NAF – but available in a future integrated NAF
  - Like the whole software maintained , e.g. compilers, debuggers, analysis tools, ...
  - GPU computing, HPC cluster, ...



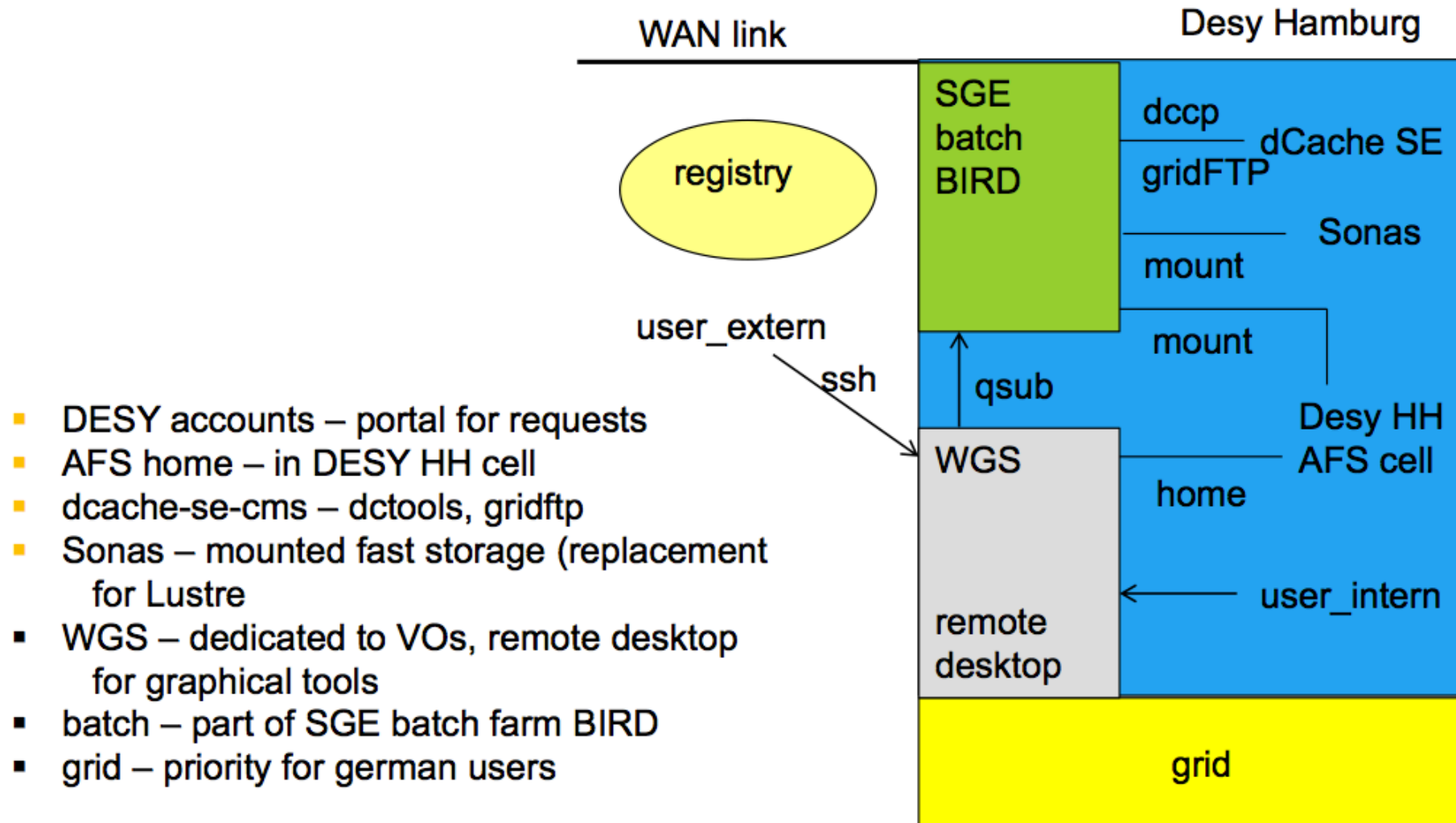
## Timeline:

- > End of September: Detailed announcement to experiment's delegates and Grid Project Board
- > Beginning October: First test users with DESY accounts using special resources
- > Beginning November: Adding NAF Remote Desktop
- > Now: Starting to look for first external volunteers
  - Some work ahead – concerns how to register non-DESY people
  - Can do this manually for a handful of people – Who is brave?
- > Further timescale depends on outcome of the first tests
  - And will be discussed in detail in NUC meetings
- > **Plan: Have a fully working NAF 2.0 in 2013 – and switch off current NAF in 2013.**





## ... backup: A closer look at one site



- DESY accounts – portal for requests
- AFS home – in DESY HH cell
- dcache-se-cms – dctools, gridftp
- Sonas – mounted fast storage (replacement for Lustre)
- WGS – dedicated to VOs, remote desktop for graphical tools
- batch – part of SGE batch farm BIRD
- grid – priority for german users



## ... backup: Changes in detail

changed	unchanged
user accounts	grid
AFS cell	dCache SE
Lustre mounts	Sonas
WGS access	dctools (until SL6, pnfs in future)
batch farm	batch system
supporter basis	support entry naf-helpdesk
network setup	network speed
access to DESY software base	

