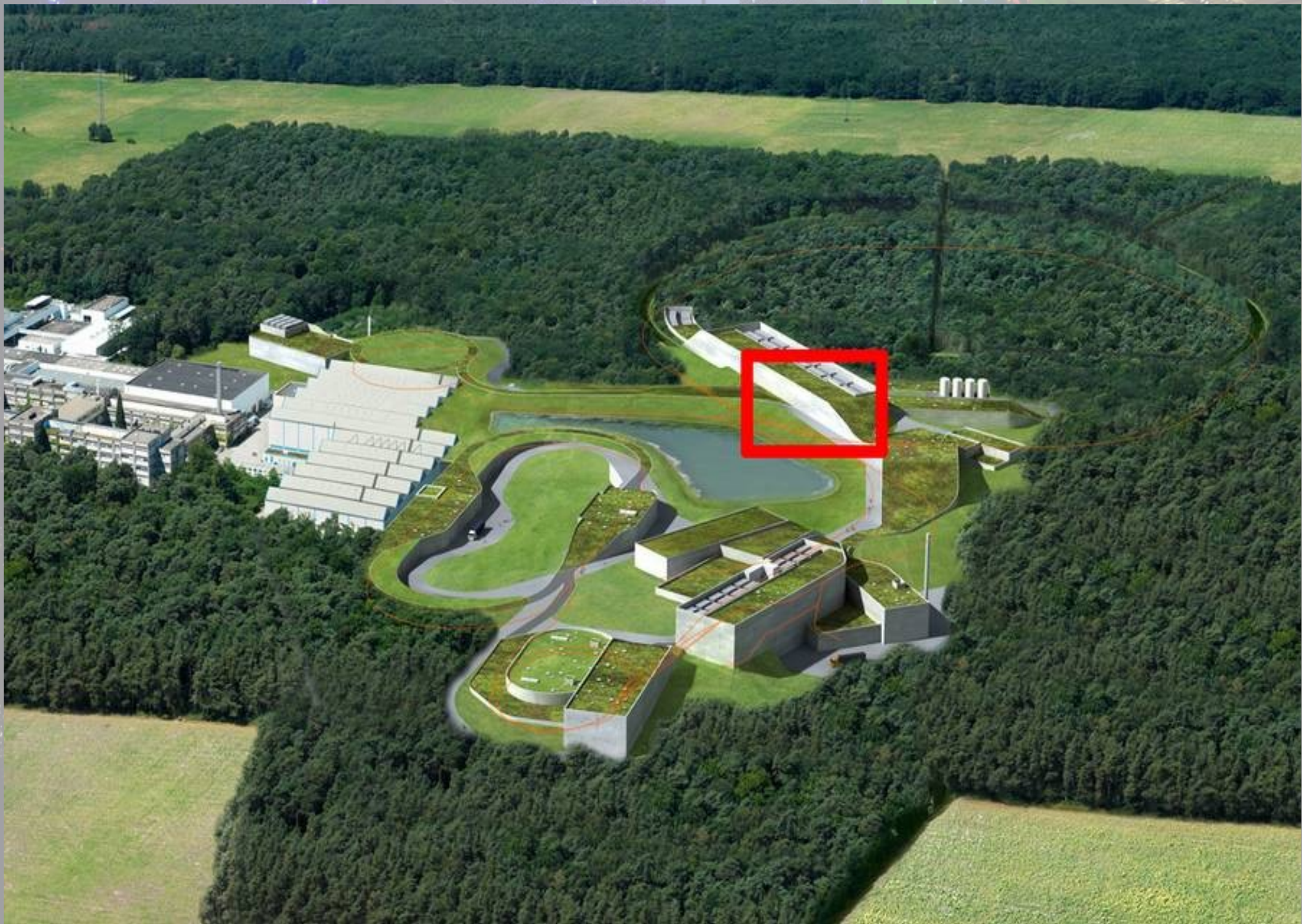
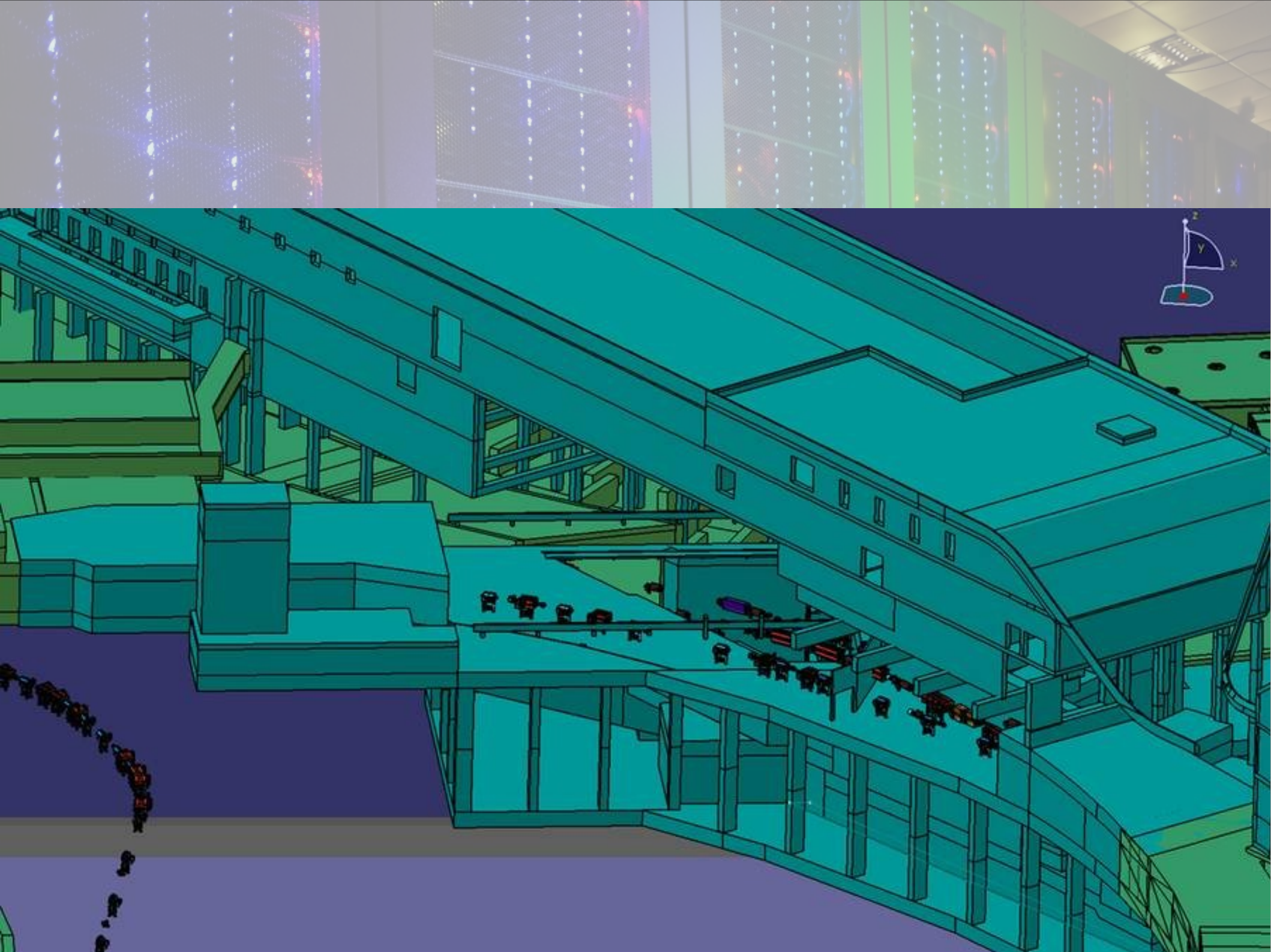
Site Report GSI
Beijing Fall 2012

Walter Schoen, GSI

News from GSI – FAIR project





=>„real work“ is going on :-)

News from HPC Department
- new people :-)

- new people :-)

- Victor Penso (jan 2012)
- Matthias Pausch (IT Security/HPC, April 2012)
- Birgit Alborea (HPC, July 2012)
- Thomas Stibor (HPC, September 2012)
- Matteo Dessalvi (HPC) (October 2012)

Thomas Stibor

Matthias Pausch

News from Prometheus / Hera

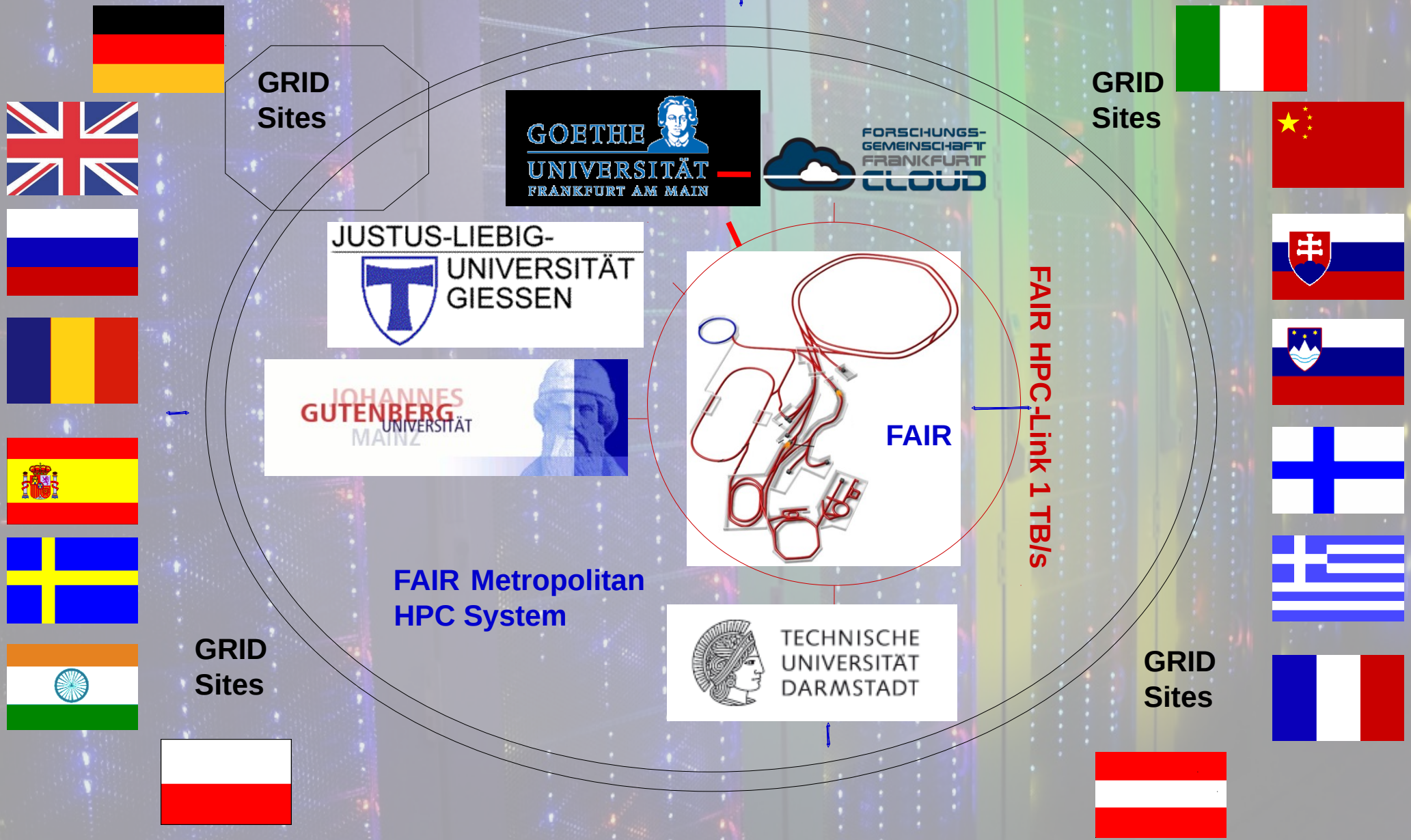
- Prometheus: The IB cluster, Hera: The IB lustre
- Users are happy :-), IB works very stable, lustre is stable
  (some incidents with aged lustre hardware)
  => migration of users to Prometheus
- 2048 cores from Prometheus reserved for lattice tests
  - ongoing perfomance tests with lattice QCD on „bulldozer“ CPUs
    => needs optimization
  - will be test cluster for „wheezy“ release (improved FP's)
  - will be test cluster for slurm scheduler
- GE: ok for our 10.000+ core cluster however there are open questions
  - good for massive parallel jobs? => (network topology support)
  - scalability good for 300.000+ cores?
  - future of GE?

News from lustre, II

=> /hera will be growing :-)
What is the future of /lustre - the ethernet lustre?

- Still 1.7 Petabyte, will loose capacity
  due to migration of the „new“ OSS
  (less than 3 years old) to Hera, the IB lustre
- Will loose capacity due to aged hardware,
  data on RAID 5 OSS will be migrated to RAID6 OSS,
  Then final shutdown of RAID 5 … :-) …... next months
- There will be still (reduced) capacity for the ethernet cluster

FAIR HPC Backbone 1TB/s

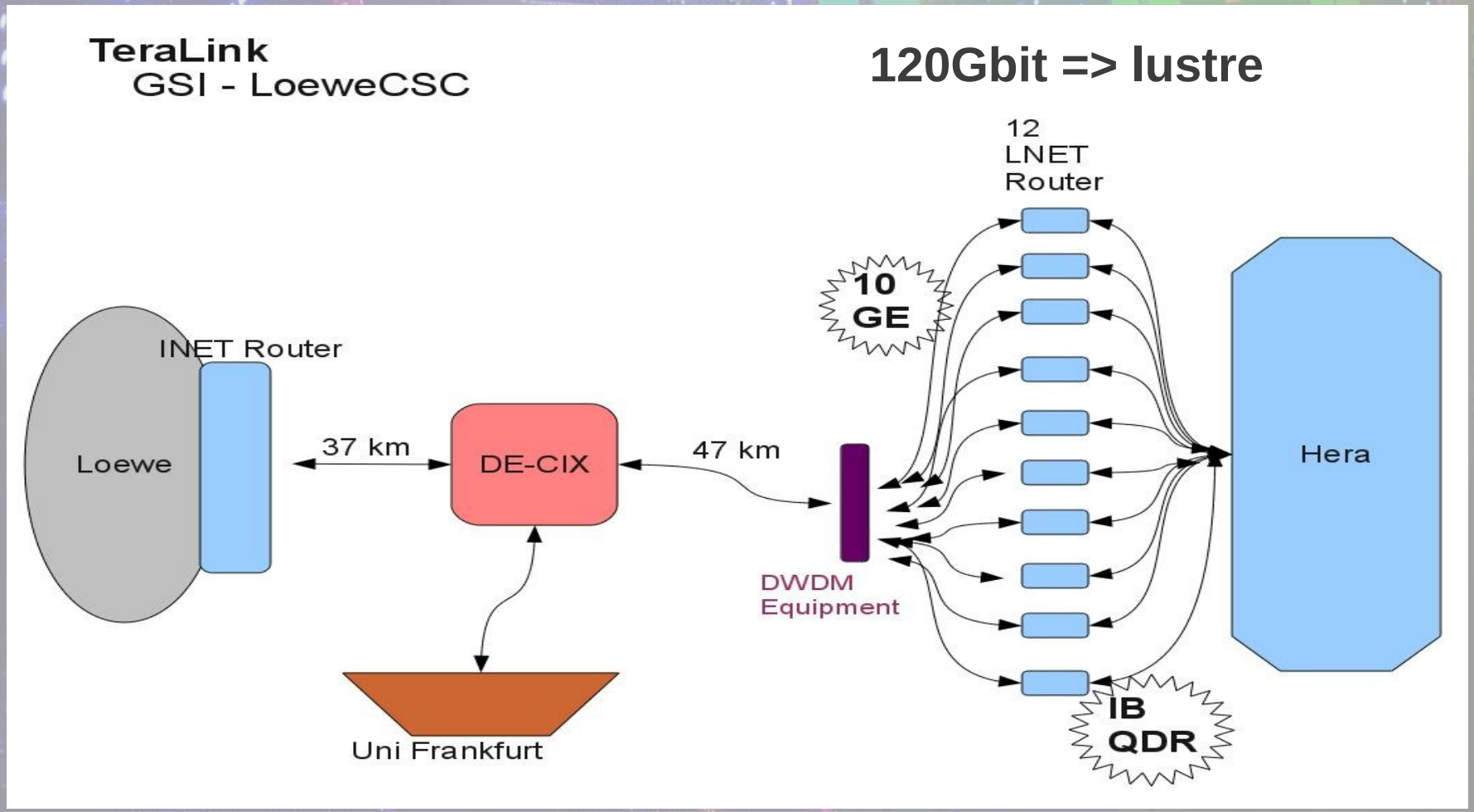


Volker Lindenstruth (www.compeng.de) 15.10.12— Copyright ©, Goethe Uni, Alle Rechte vorbehalten

Connecting Loewe-SC (Frankfurt) with Hera:

- Building HPC router cluster (LNET) for the TeraLink
  12 x 10 Gbit Ethernet => lustre IB loadbalacing

=> details: Thomas, lustre talk tuesday



New Developments

How to connect sites with different GID and UID space?

- Mapping of „outside“ GID/UIDs into a virtual lustre space (kernel)

=> Thomas (Stibor) merged newest lustre code 2.3xx with Kerberos 1.10.x + mapping features, creating Debian (Wheezy) packages

- „Kerberized“ communication between MDS and OSS on the test system is already working :-)

=> test with clients + perfomance measurements necessary

- Git: https://github.com/stibor/lustre-kbr/tree/b2_3-kbr

New Windows Domain Structure

=> launched by IT Security eliminate some „aged“ structure (e.g flat domain structure)

- **Common project of IT Security, Core IT (Windows,Network), HPC**
- **Hierarchical domain structur**
- **Introducing PKI, strong authentification, smart cards encrypted documents, key recovery**
- **VMs based on KVM (Linux), secured by Linux FWs => Kernel SamePage Merging + life migration**