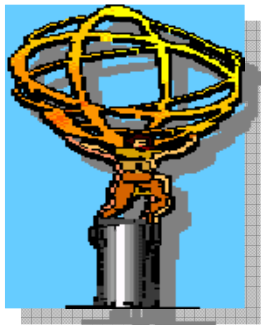
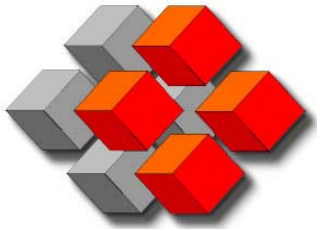
CHIPP Computing Board

Meeting 20.4.2006





Christoph Grab (ETHZ)

Contents

1) Phoenix: Status Report + 2006' slice of HW resources

- status resources + Ramp up plans [CG]
- funding requests (FORCE) [CG]
- status of RFP : discussion [DF, PK, CG]

* alternative models: [DU, PK, CG] : research agreements with companies; - status, legal aspects, ...

2) Issues at CSCS [PK]

- personnel at CSCS; status 2nd person [PK/DU]
- status of SW/HW services at CSCS for Phoenix [PK]
- network status; connectivities to T1 sites [PK]

3) Experiment's related SW issues:

* Status Tier-2 to Tier-1 relations [CG]
* status of usage of Phoenix-T2

- CMS : incl.report from integration meetings [DF]
- ATLAS: [FO]
- LHCb: [RB]

4) Status Service Challenges SC4 [CSCS, Expt's reps.]

- status preparations , timeline services

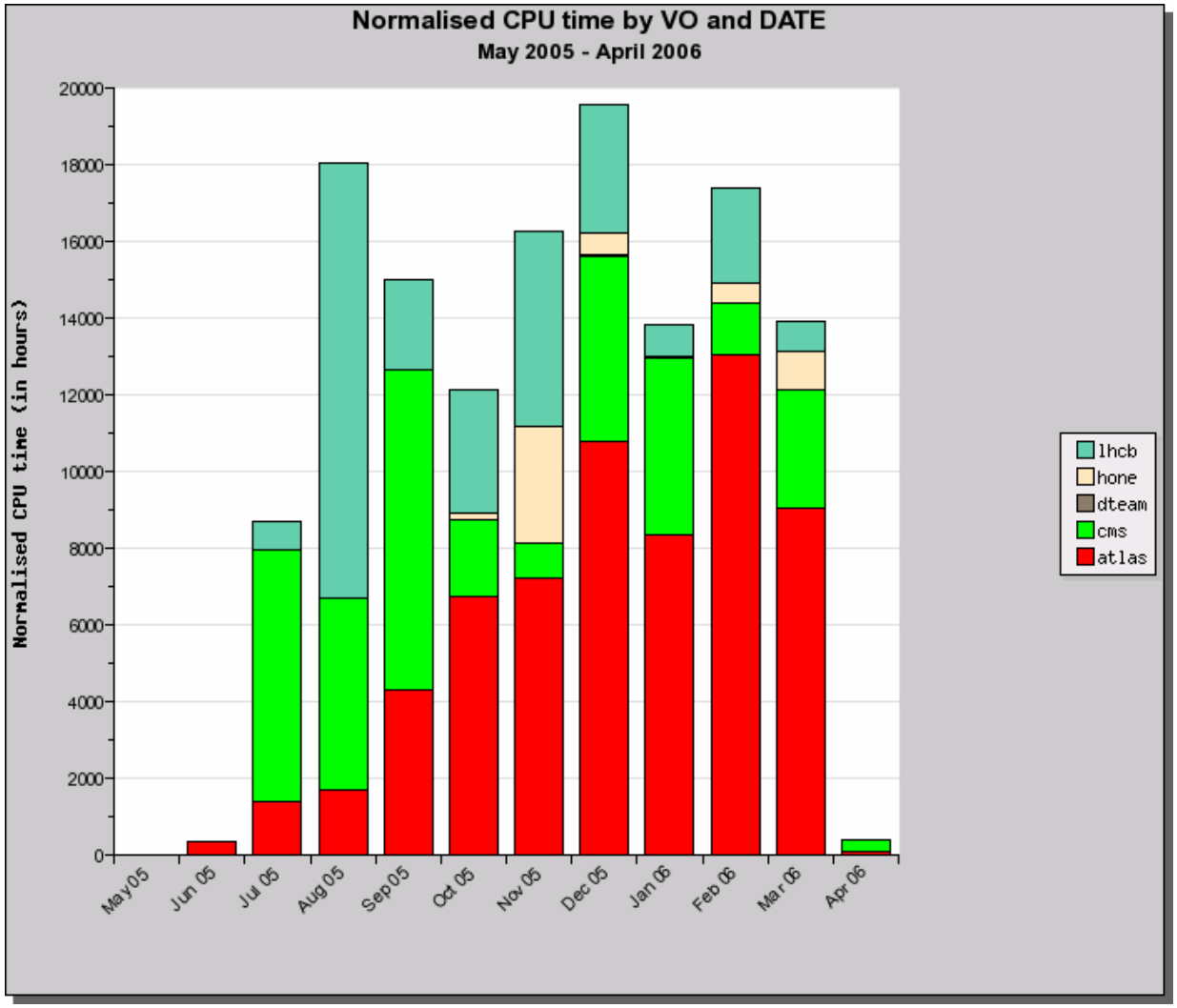
5) Status at home institutes [all]

- short reports + comments by all on T3 - activities ...

6) AOB

Resources

PHOENIX usage Report (20.4.06)



shown is
LCG-usage

Rest is
- NorduGrid
- user jobs

Ramp-up Plan for CH-Tier-2

Unchanged

- **Gradual increase according to (agreed on in Manno) percentage of CPU to reach size of the full Tier-2 RC by (end) 2008.**
- **Goal: buy as late as possible.**

	2005	2006	2007	**2008**
CPU (kSI2000)	45	231	692	**2307**
Disk (TB)	9	79	236	**787**
Tape (TB)	0	0	0	**0**
CPU fraction w.r.t. 2008 (%)	2	10	30	**100**

✂* 1 XEON 3 GHz ≈ 1.5 kSI2000

total ≈ 700 dual-CPU PCs in 2005

- **WAN: need > 3 Gbps in 2008**

  have already now 1 Gbps, and should get 10 Gbps in 2006 ☺

Required Tier-2 Resources

Unchanged

- Numbers here are ESTIMATES to set the scales. Updated in Sep. 2005 according to PASTA 2002; (need to revise when new HW-technologies available).

- Estimated costs for pure hardware acquisition for a full Tier-2 RC invested in 2006-2008 (based on 2005 costing) ≈ 3.0 MSFr.
- Costs for operation + replacement > 2008 ≈ 0.5 MSFr/a

- Number of FTEs needed for the Tier-2 (pure "GRID-FTE"; but not including: system-operation, HEP-specific SW, Tier-3 developments ..) ≈ 2 FTEs

- Local infrastructure (power, cooling....) and Networking → covered by CSCS and SWITCH

Financial Requests

- First FORCE (SNF) grant (requested 3.2004; granted 128 kCHF in 9.2004) was successfully invested in "Phoenix cluster". ☺

2005

- A new request to FORCE (via SNF) for total of 670 kFr to cover the"2006-slice" of CH-Tier-2 computing hardware has been submitted in September 2005 on behalf of CHIPP.
  - No manpower requested.

2006

- The request was passed on to "Staatsekretariat" – preliminary information indicates: 300 kFr only ... NO LETTER yet.
  - RFP ("Oeffentliche Ausschreibung"): draft is nearly finished.
  - Plan to get all HW operational by Q4/06.

- OPEN issue: long-term, recurring funding resources ?

2007,8,...

Comments on Personnel

- **REMINDER:** need dedicated personnel with long-term commitment

- **CHIPP stopped direct Swiss contributions to LCG (@ CERN):**
  - F.Orellana: fully active for ATLAS; new vice-chair computing board (position ?)
  - D.Feichtinger: now fully active for CMS (at PSI) THANKS

- **Personell at CSCS:**
  - G.L.Volpato left us ☹; Peter Kunszt started in 1.2.2006 ☺
  - BUT: still only one GRID-FTE, need urgently 2nd FTE in 2006;
  - about 1.5 FTE for system and technical support available

- **Need :**
  - Physicists: from each experiment at least ONE FULL FTE
    - ATLAS, CMS covered; LHCb ? Really needed for LHCb?
  - Physicists + IT-personnel at Tier-3s ← Do not underestimate

RFP for PHOENIX-II

Status of RFP draft:

Draft exists; update discussion of details after this meeting,

(version was distributed to all members)

Alternative Models:

- for funding: NF, KTI,
- research agreements: discussions with SUN (later HP) are scheduled ….

CSCS – Issues (PK)

Tier-1 to Tier-2 Relations

Tier-2 to Tier-1 Relations

- **Overall computing models are being slowly adapted to reality (?)**

  The purely hierarchical structure is being replaced by a more dynamic "cloudy structure", where T1 – T2 associations are adapted to needs by experiments.

- **The LCG Overview Board strongly recommended: "Experiments must define to which Tier-1(s) the Tier-2 connect ...."**

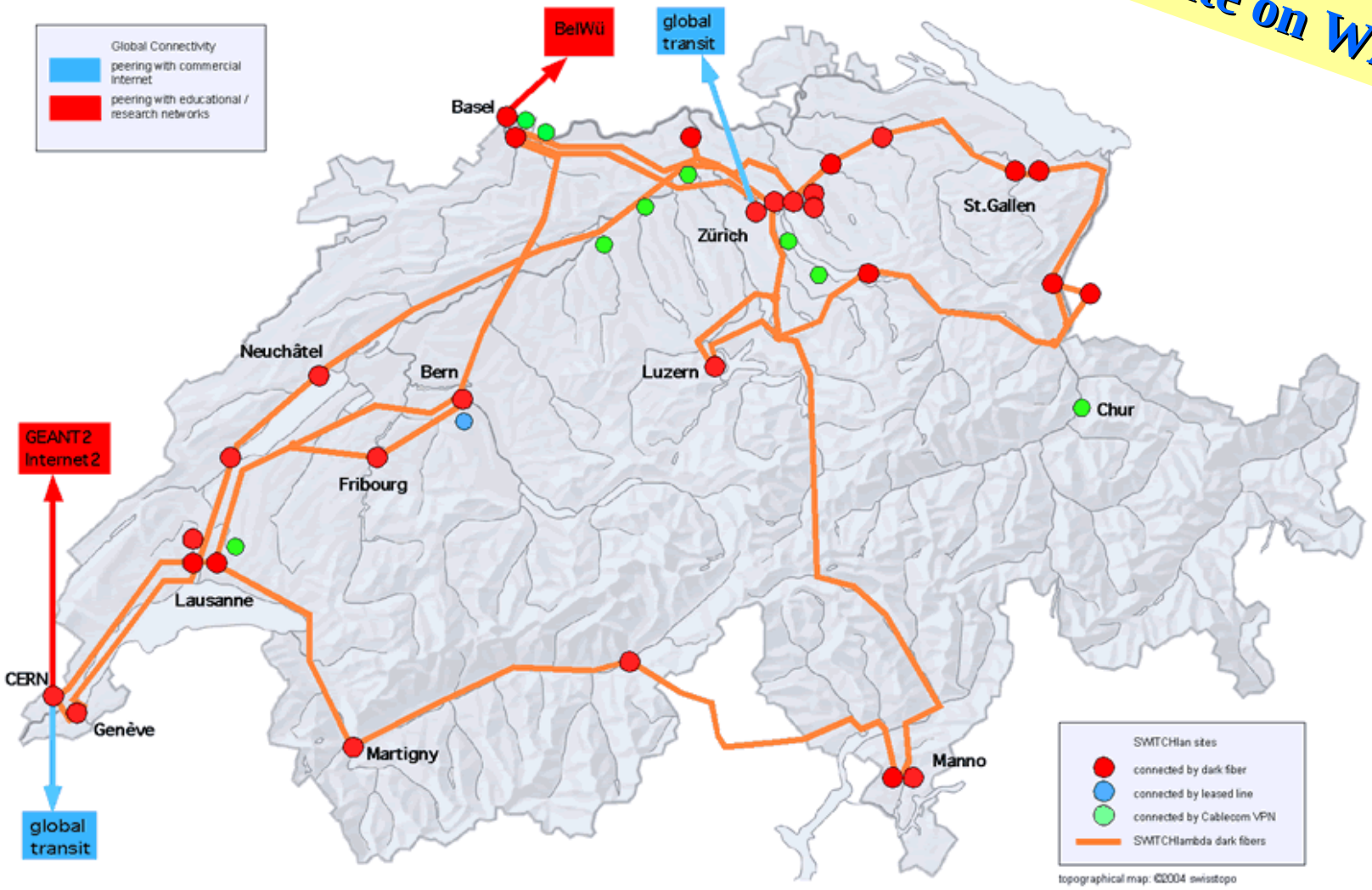
- **Discussion and decisions now under way in experiments; to report at the next OB and GDB meetings (**

Tier-2 to Tier-1 Relations

- **Result for us: CSCS will be associated with several Tier-1s**
  - **CMS: with the "Nordic T1" : i.e. ok**
    - **FZK in Karlsruhe; IN2P3 in Lyon, RAL in UK, PIC (+..?), CERN if available**
  - **ATLAS – ok.**
    - **FZK in Karlsruhe, CERN if available**
  - **LHCb - still under discussion ...**
    - **FZK in Karlsruhe, CERN if available**
- **network requirements :**
  - **we need at least 1 Gbps from CSCS to EACH of the Tier1's,**

Network: Switch backbone (Q1/06)

Update on WAN

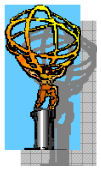


Tier-3 Status

Tier-3 Resources Ramp-up

Updated Q1/06

ATLAS : 30 active users in 2008 (Be:Ge 1:2); 1.5 kSI2k+ 1 TB /ye



	2005	2006	2007	2008	2009	2010	2011	2012
CPU (kSI2k) analysis	25	58	123	203	248	293	338	383
Disk (TB)	10	25	55	95	125	155	185	215
Tape (TB) user	0	0	0	0	0	0	0	0

Initial value per user:
5 kSI2k + 2 TB

CMS: 30 active users in 2008 (Be:Ge 1:2); 4 kSI2k+ 2 TB /year/user

	2005	2006	2007	2008	2009	2010	2011	2012
CPU (kSI2k) analysis	25	70	160	290	410	530	650	770
Disk (TB)	15	40	90	160	220	280	340	400
Tape (TB) user	0	0	0	0	0	0	0	0

Initial value per user:
5 kSI2k + 5 TB

LHCb : 20 active users in 2008 (ZH:La 1:2); 5.6 kSI2k+ 1.5 TB /year/user

	2005	2006	2007	2008	2009	2010	2011	2012
CPU (kSI2k) analysis	10	28	56	112	168	224	280	336
Disk (TB)	2	4	9	18	27	36	45	54
Tape (TB) user	0	0	0	0	0	0	0	0

Conclusions

- **"PHOENIX" cluster operates stably, is routinely used for production**
  - **thanks to Volpato, Kunszt + CSCS, and also to D.Feichtinger and F.Orellana**
  - **we are prepared to increase capacity according to plans**
  - **RFP in good shape**
  - **need to participate in the SC NOW ...**
- **worried about financing..**
  - **Worried about personnel: CSCS and at institutes …**
- **Need strong commitment from the users**