LHCOPN operations Presentation and training CNAF's session

Welcome, introduction and objectives of the session

Guillaume Cessieux (FR-CCIN2P3, EGEE networking support)

Bologna, IT-INFN-CNAF, 2009-12-10

Welcome

- **Many thank to CNAF and Stefano for hosting and arranging this meeting**
  - Forth session heavily benefiting of previous
    - Essence concentrated in half a day

- **Agenda and all materials of the session are here:**
  - http://indico.cern.ch/conferenceDisplay.py?confId=69191

Thursday 10 December 2009

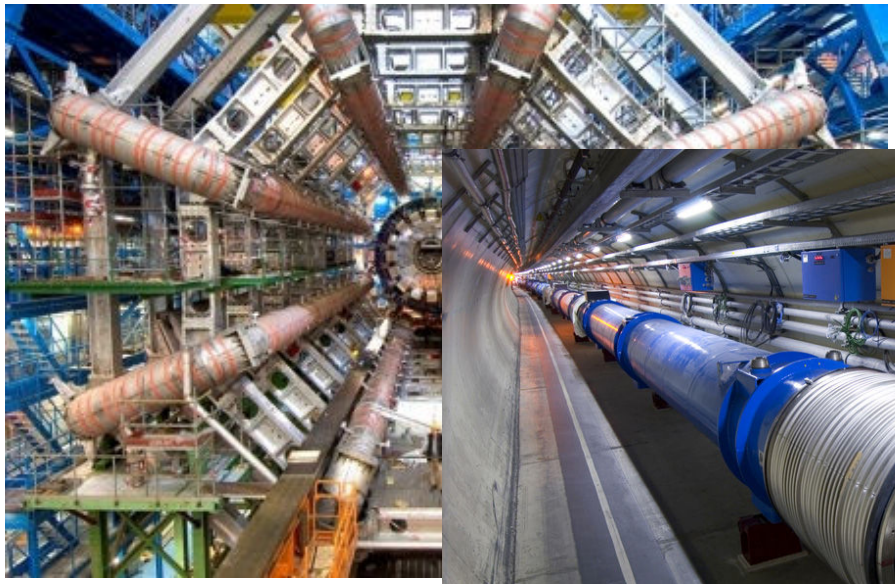
09:00	Start of the meeting
09:01	Welcome, introduction and objectives of the session (09')
09:10	Goals and general overview of operational model (40')
09:50	Presentation of tools supporting LHCOPN operational model, tests and handling (35')
10:25	Coffee break (20')
10:40	Use cases and best practices around processes and tools (1h00')
11:40	Round table (feedbacks on tools and processes and confidence into using them on-sites) and conclusion (20')
12:00	End of the meeting (01')

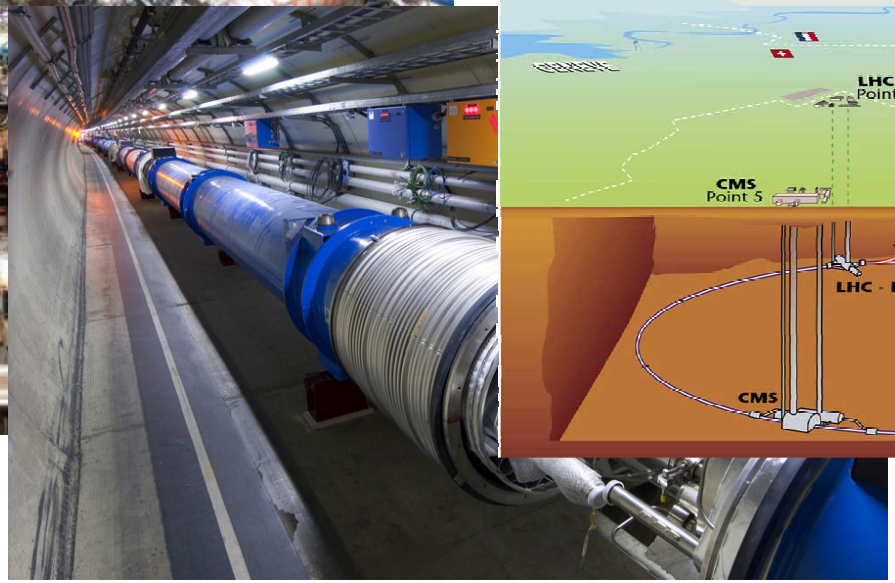
Objectives of the session

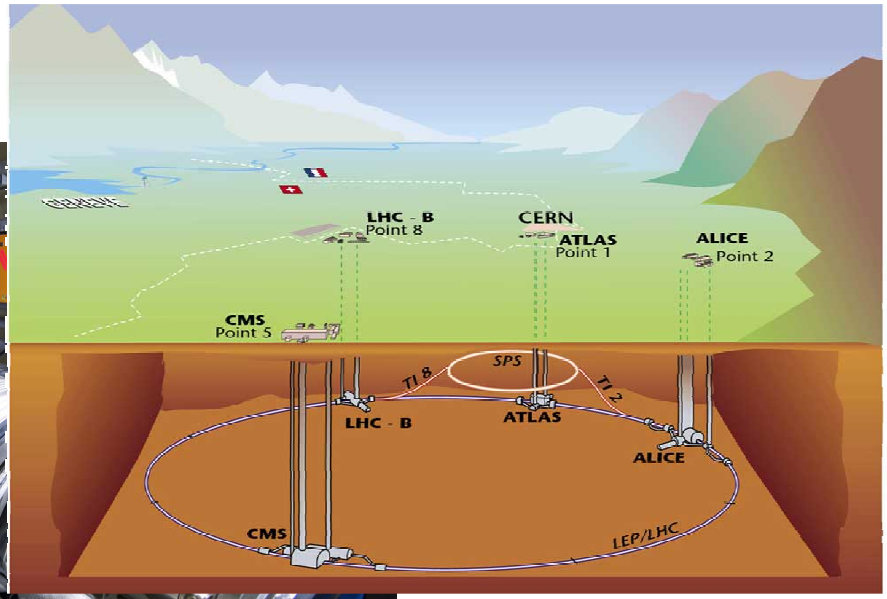
- **Presenting what is in mind on operating LHCOPN**
  - Tools, processes etc.
  - “““Training”””
- **See how you are confident and confortable into successfully implementing LHCOPN related processes in your site**
- **Retrieve feedbacks to trigger improvement processes**
  - There are possibilities for improvement!
    - This is still fifth round of review
- **Session is flexible, drive it with what you need**
  - Site’s needs, shifters need etc.
  - Help me avoiding making something too annoying

WLCG: Worldwide Large Hadron Collider Computing Grid

- Goal: Analysing LHC data – 15 PB/year
- Federating several international Grid projects into achieving that
  - EGEE, OSG…
  - Tiers model: 1 T0 - 11 T1s - 50 T2s







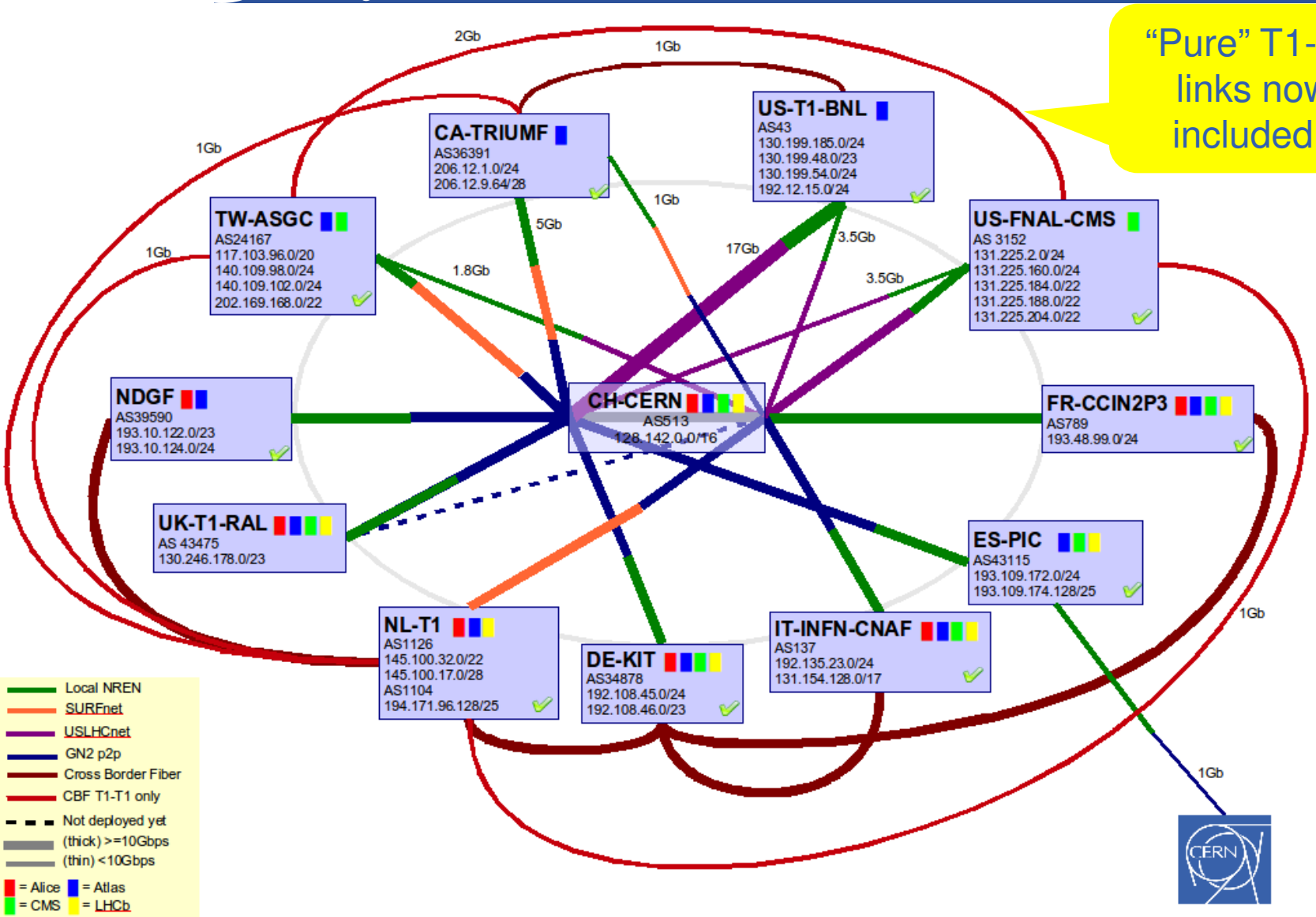
Networks for WLCG

- **To much traffic expected betwen T0/T1s to be carried by generic IP**
- **Quality of service needed: CERN has a limited buffering ability**

- **Dedicated network built: The LHCOPN**
  - Aiming to sustain T0/T1 traffic
    - T1-T1 traffic allowed, but should not disturb T0-T1 exchanges

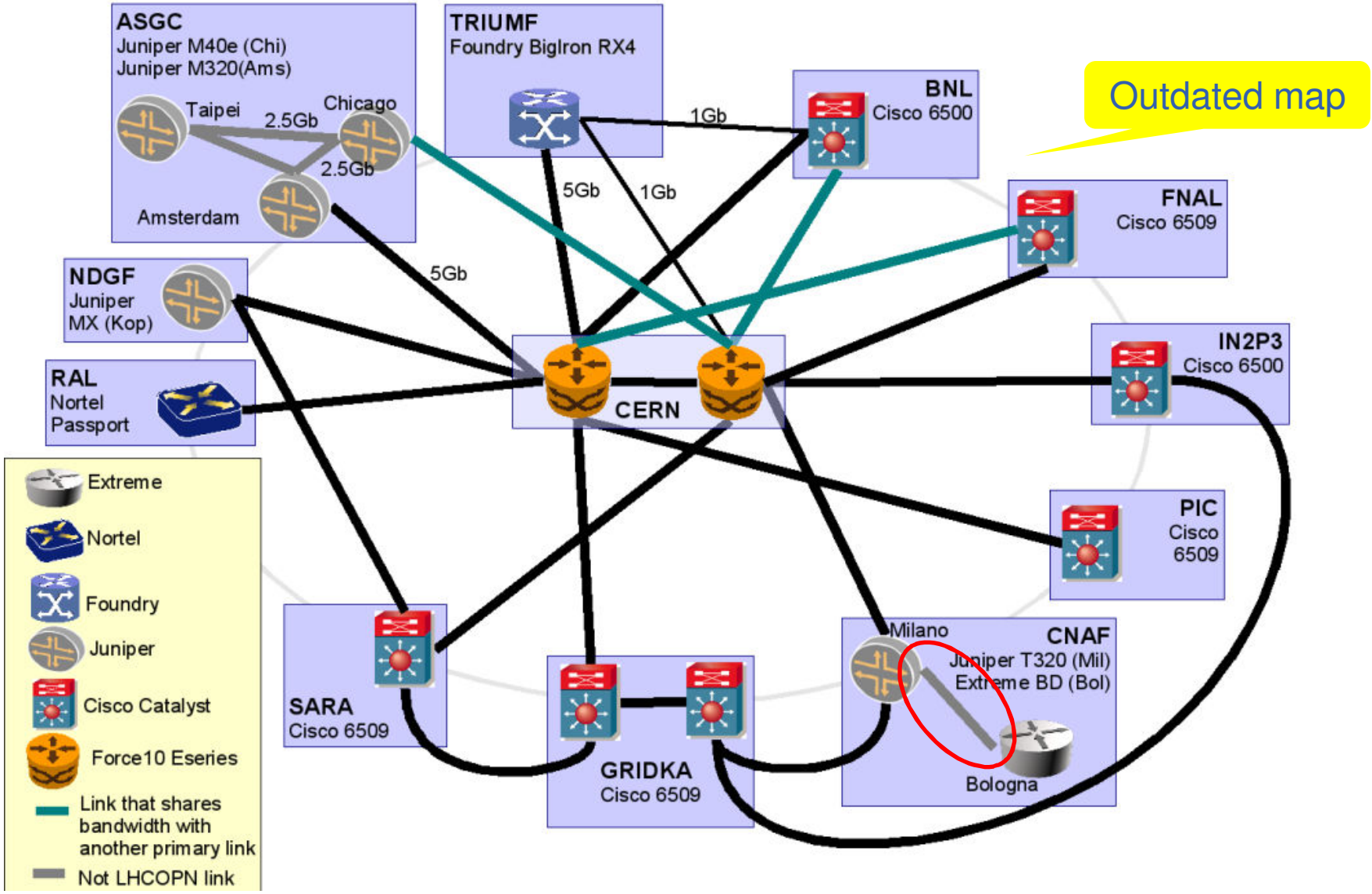
- **Made of stitching lightpaths provided by NRENs**
  - Often 10Gb links
    - Overseas ones are very complicated
  - Ending on sites: T0 and T1s

Infrastructure status



Courtesy of Edoardo Martelli – CERN – 2009-11-03

L3 devices in the LHCOPN

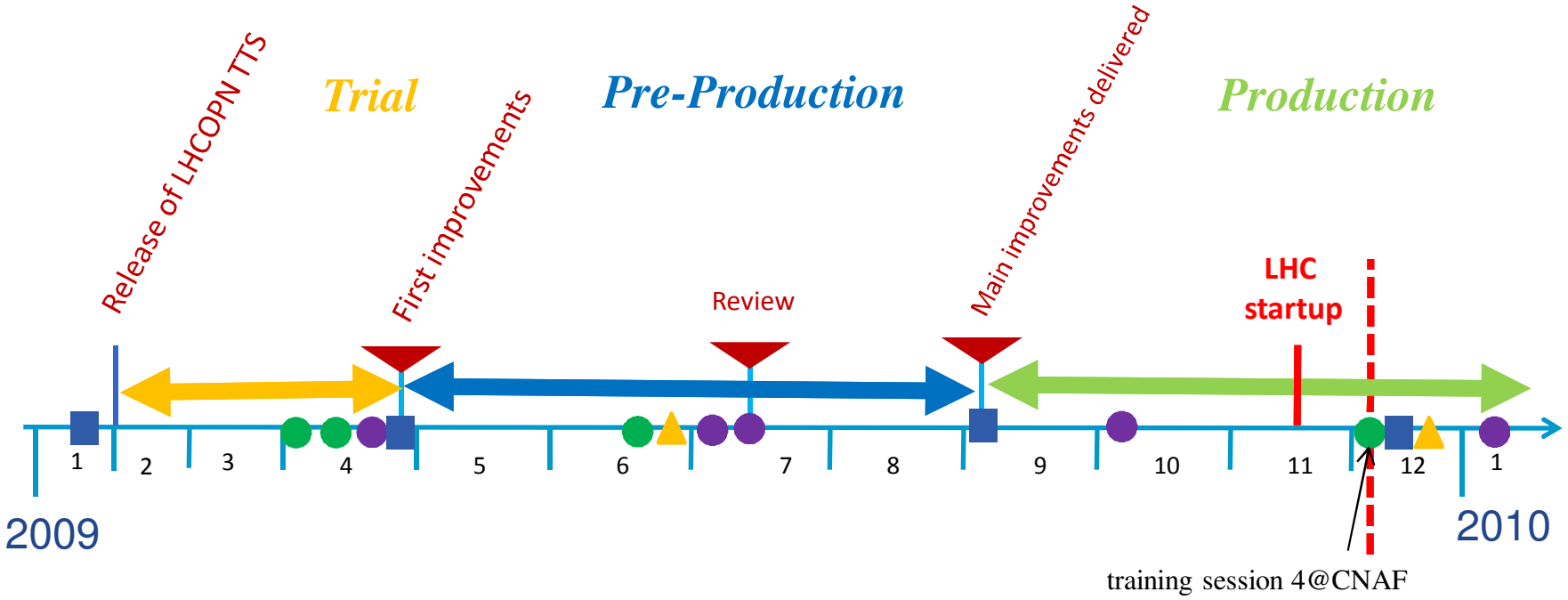


Courtesy of Edoardo Martelli – CERN – 2008-12-15

What are LHCOPN links

- **"It is a dedicated link part of the network specifically put in place to allow distribution of data from T0 to T1s"**
- **Now T1-T1 link not able to carry T0→ T1 traffic included in the LHCOPN**
  - Unify and benefit from operational tools and processes
- **Internal links**
  - Links with both end in same site which could have strong impact on the LHCOPN

Operations - Roadmap



Operations – Current impl. status

	Trained	R/W Access to the twiki verified	Access to the TTS verified	Started Ops production mode	Review of twiki
CA-TRIUMF	2009-04-08	2009-04-30	2009-04-30	2009-04-30	Partial 2009-06-19
CH-CERN	2009-04-02	2009-02-04	2009-02-04	2009-02-04	
DE-KIT	2009-04-02	2009-02-23	2009-02-04	2009-02-23	2009-09-14
ES-PIC	2009-04-02	2009-08-12	2009-02-04	2009-02-04	2009-08-12 (Twiki access issue)
FR-CCIN2P3	2009-04-02	2009-02-04	2009-02-04	2009-02-04	2009-12-07
IT-INFN-CNAF	2009-12-10		2009-03-25		
NDGF	2009-06-16	2009-07-14	2009-07-06	2009-07-14	
NL-T1	2009-06-16	2009-06-19	2009-03-20	2009-06-19	2009-10-07
TW-ASGC	2009-04-08	2009-06-03	2009-04-13	2009-06-03	2009-10-30
UK-T1-RAL	2009-06-16	2009-06-23	2009-06-19	2009-06-23	2009-11-04
US-FNAL-CMS	2009-04-08	2009-06-22	2009-05-04	2009-06-22	
US-T1-BNL	2009-04-08	2009-05-27	2009-05-08	2009-05-27	2009-10-20 (twiki access issue)

Agenda for the session

1. Overview of operational model
2. Presentation of involved tools
3. Use cases and best practices
4. Conclusion and round table