



# Grid Deployment Board

## 2<sup>nd</sup> Meeting of the GDB T0/T1 Networking group

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# Grid Deployment Board - GDB

Summary of the first Tier 0/1 Network  
Meeting Held January 20/21 2005

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## Conclusions & Actions of the first meeting

- Create a summary of the experiment requirements
  - J. Shiers is maintaining the requirements summary as part of the service challenge activity,
- Create a planning document of anticipated end-end connectivity, by when, from T1's to CERN.
  - Dante will provide the information for all european T1's
  - For non-european T1's the individual centers will be contacted.
- Create a network architecture document for the LHC network.
  - Coordinated by Erik-Jan Bos of Surfnet, the intention is to start with a high level overview before starting to study all the detailed issues.
  - A preliminary overview of the IP routing issues has been prepared by CERN.





# T0 - T1 Networking 2005 (including SC3)

Site Path

- FNAL LHCNet 10G -> Starlight Chicago -> FNAL 10G
- BNL LHCNet 10G -> Starlight-> ESNNet (2.5G) -> BNL LAN (10G)
  
- RAL 2 x 1G Netherlight -> 2x1G UKLIGHT
- SARA 10G netherlight
- ASCC 2 x 1G Netherlight -> 2.5G to ASCC
- TRIUMF 1 x 1G Netherlight -> Starlight ?) -> CANARIE 1G  
(TRIUMF have 10G for a short period in June - swap with SARA 10G?)
  
- FZK GEANT 10G (Layer-2 routed via France)
- INFN CERN GEANT 10G -> GARR -> INFN 1G
- IN2P3 CERN GEANT 10G -> Renater (2.5G) -> IN2P3 1G
- PIC GEANT
- Nordic GEANT to Sweden

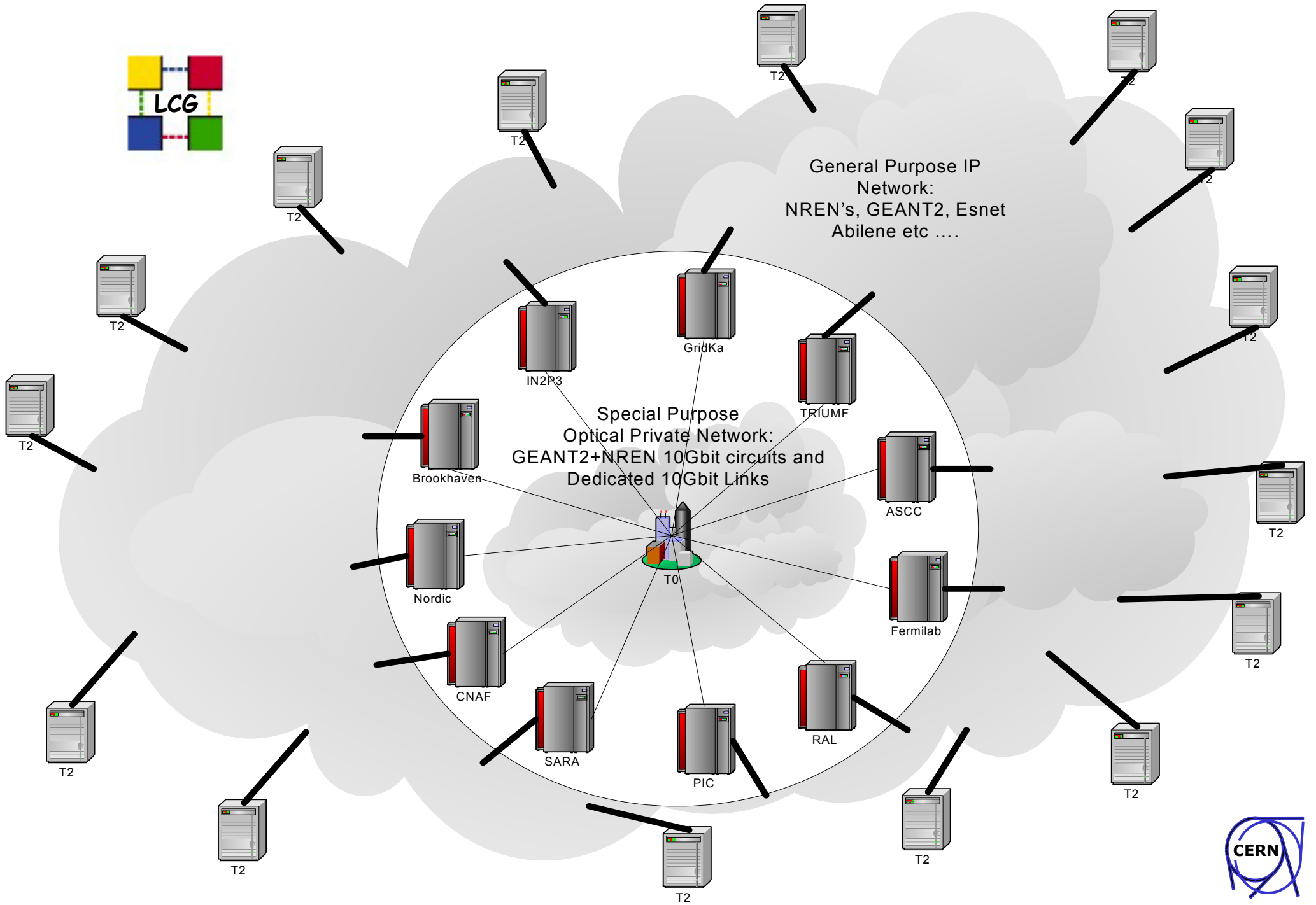




# Upcoming CERN Changes

- 2H 2005
  - Upgrade of the SC infrastructure to the production network infrastructure based on the new equipment purchased as part of the call for tender.
    - Requires integrating the new equipment into the core network.
    - Want to be at 25% of the LCG farm capacity by end 2005 in production.
  - Anticipating the installation of the GEANT2 POP but contractual and other issues still open.
- Sept
  - The new contract for the US Link will come into effect. It is still under discussion but likely to be 2 links, 1 to NY and 1 to Chicago (via NY, but how?)







# Some highlights

- 10Gbit to each Tier-1 from CERN T0 is a fundamental requirement.
- Good T1-T1 and T1-T2 connectivity is also required which is an issue for the T1's
- List of agreed T2 sites is needed
- Important to get some planning as activities ramp up towards LHC startup.
  - A target date for each Tier-1 for a 10Gb/sec production circuit to CERN (T0-T1)
    - Needed to set expectations for the service challenges.
    - These need to be operated as "production" circuits.
  - A network vision for LHC
    - High level architectural view
      - Europe, US, Asia, .....
      - GEANT dependable network services
      - Network domains for all T1 sites
      - Campus connectivity (e.g. storage)
    - Management considerations
      - SLA's
      - Operations (monitoring and intervention)
      - Cost Models
    - Technical considerations
      - Security
      - Switching and Routing considerations
      - IP addressing
      - Backup paths
    - Infrastructure and exploitation
      - Data movers and Protocol stacks
      - On demand use





# Objectives of this meeting

- Review the progress since the last meeting.
- Decide on the next set of work items to be done.
  - Architecture
  - Technical Design
  - Planning and Implementation
  - Management and Operations
  - Exploitation and Research Issues
- Preliminary timetable for the next meeting.

