



INFN – TIER1

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LHC Computing Grid Workshop

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INFN – TIER1 Project

- Location: CNAF – Bologna
- Multi-Experiment TIER1: ALICE, ATLAS, CMS, LHCb (+ VIRGO + CDF).
- Support to Tier2 and Tier3 Centers.
- Already with key role in Testbed (DataGRID, DataTAG, INFN-GRID, GLUE) and Data Challenges (2002).
- Resources: Assigned to Experiments on a Yearly Plan. Usage by other countries will be regulated by a Mutual Agreements.
- Authentication: Certificates (INFN CA + GRID) and/or Kerberos5.



TIER1 Resources

HARDWARE

<i>Year</i>	<i>FARM (SI2000)</i>	<i>DISKS (TB)</i>	<i>TAPES (TB)</i>
2001	60,000	10	10
2002	200,000	80	50
2003	900,000	120	300
2004	1,550,000	192	600
2005	3,100,000	380	2,000
2006	4,000,000	480	3,000

Tier2 will have almost the same amount of CPU & Disks



TIER1 Resources

PERSONNEL

Type	N.	New	Outsource
<i>Manager</i>	1		
<i>Deputy</i>	1		
<i>LHC Experiments Software</i>	2		
<i>Programs, Tools, Procedures</i>	2	2	
<i>FARM Management & Planning</i>	2	2	
<i>ODB & Data Management</i>	2	1	
<i>Network (LAN+WAN)</i>	2	2	
<i>Other Services (Web, Security, etc.)</i>	2	1	
<i>Administration</i>	2	1	
<i>System Managers & Operators</i>	6		6
Total	22	9	6

Tier2 Personnel is of the same order of magnitude.



INFN – Tier2

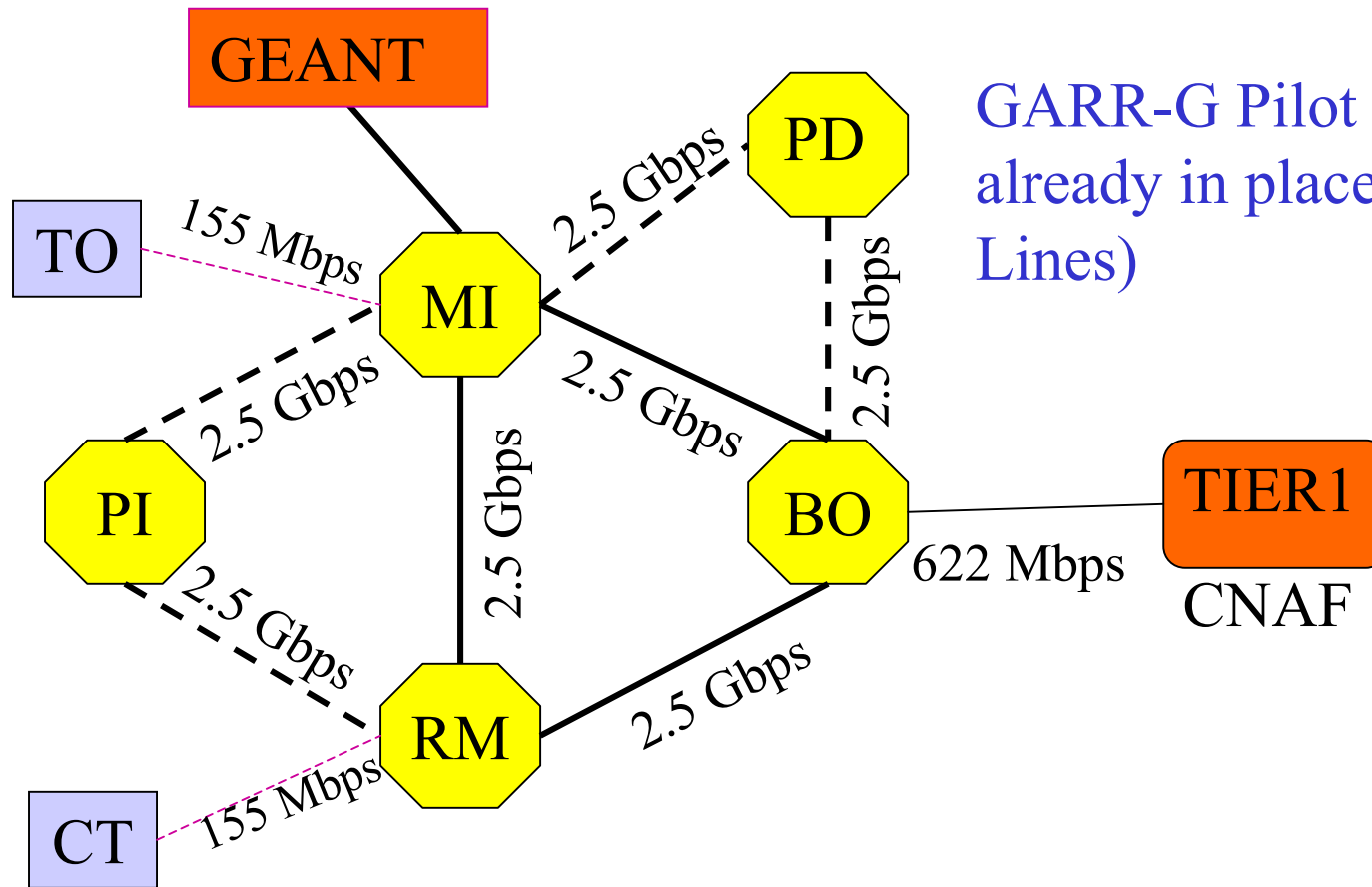
- 10 INFN candidate sites and 3 Experiments: ALICE, ATLAS, CMS (LHCb will have only Tier3's).
- 5-6 of them already very active in the Testbed (DataGRID+INFN-GRID) and Data Challenges.
- Around 50% of the CPU & Disks resources will be distributed in the Tier2's and the remaining 50% will be concentrated in the Tier1.



Networking

- New GARR-G Backbone with 2.5 Gbps F/O lines already in place.
- CNAF- Tier1 access is now 100 Mbos and will be 622 Mbps in a week (local fibre with GARR router already installed and tested).
- Many Tier2 are now 34 Mbps and will migrate soon to 155 Mbps.
- International Connectivity via Geant: 2.5 Gbps access in Milano and 2x2.5 Gbps links of Geant with US (Abilene) already in place.

Networking



GARR-G Pilot Infrastructure already in place (2.5 Gb F/O Lines)