



**IN2P3**

INSTITUT NATIONAL DE PHYSIQUE NUCLÉAIRE  
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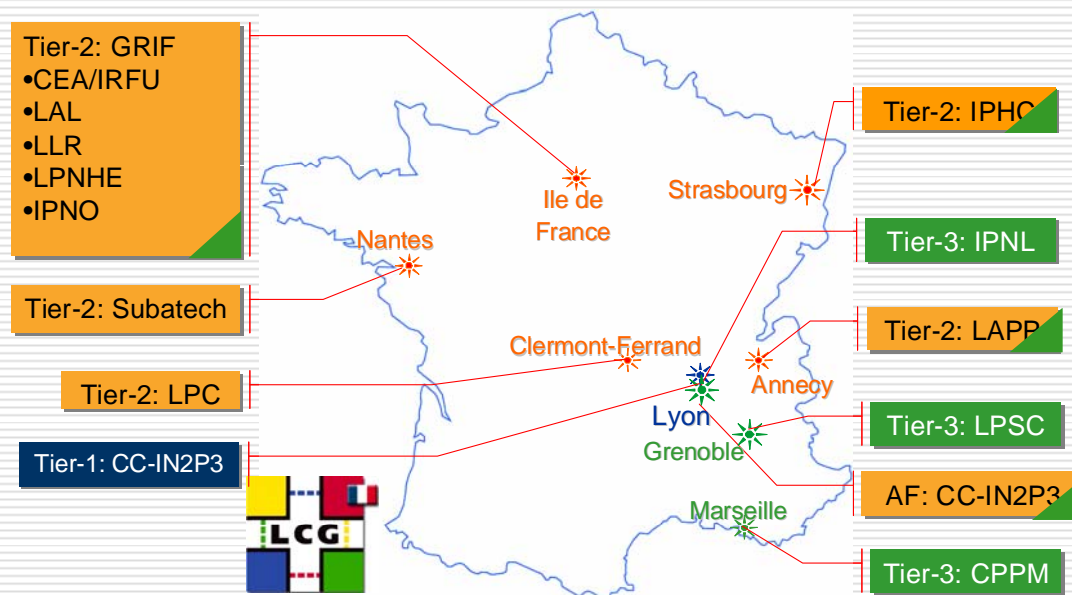
# LCG-France

*Finding a way to collaborate at the region level*

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On behalf of sites and  
experiment representatives

LCG Grid Deployment Board  
CERN, October 8th 2008



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- LCG-France project management
- Coordinated activities

*Dealing with global project, complexity and distributed teams...*

# LCG-France project overview

<http://lcg.in2p3.fr>

- **CNRS-IN2P3/CEA-IRFU initiative launched in 2004**

- French contribution to W-LCG (MoU commitments)
- Setup, develop and maintain a Tier-1 and an Analysis Facility at CC-IN2P3 in Lyon supporting the 4 LHC experiments
- Promote the creation of Tier-2/Tier-3 French sites and coordinate their integration into the WLCG collaboration

- **Organization**

- Scientific and technical leaders appointed, management (executive) and overview boards in place since 2004
- Formal coordination of tier-2 & tier-3s started on April 2006

- **Funding**

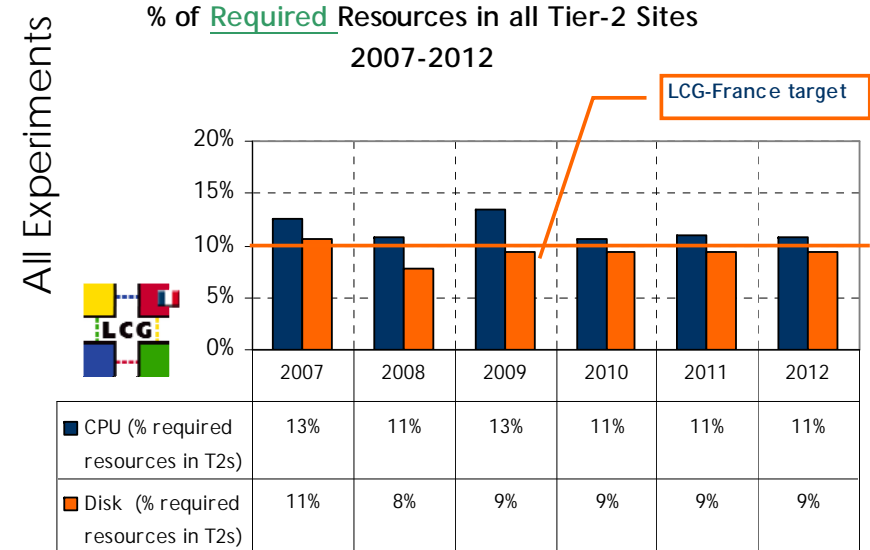
- National funding for Tier-1 and Analysis Facility in Lyon since 2004
- Tier-2s and Tier-3s have been funded by universities, regional government, hosting laboratories until now
- CNRS funding support expected from 2009 onward



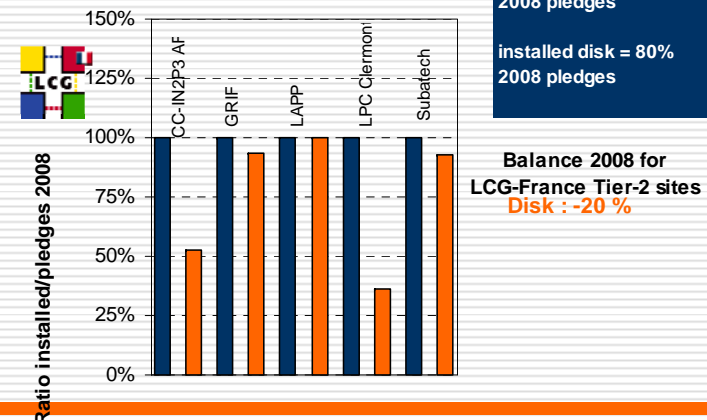
# LCG-France project overview

<http://lcg.in2p3.fr>

- Global project made out of sites initiatives
- Involved sites sharing a common goal and explicit targets
  - MoU between LCG-France sites agreed in 2008
- Events
  - Workshop, training sessions
  - Press & Media events
- Risk analysis (to be done)



**installed/pledges CPU / Disk capacity (31/06/08)**



# LCG-France sites

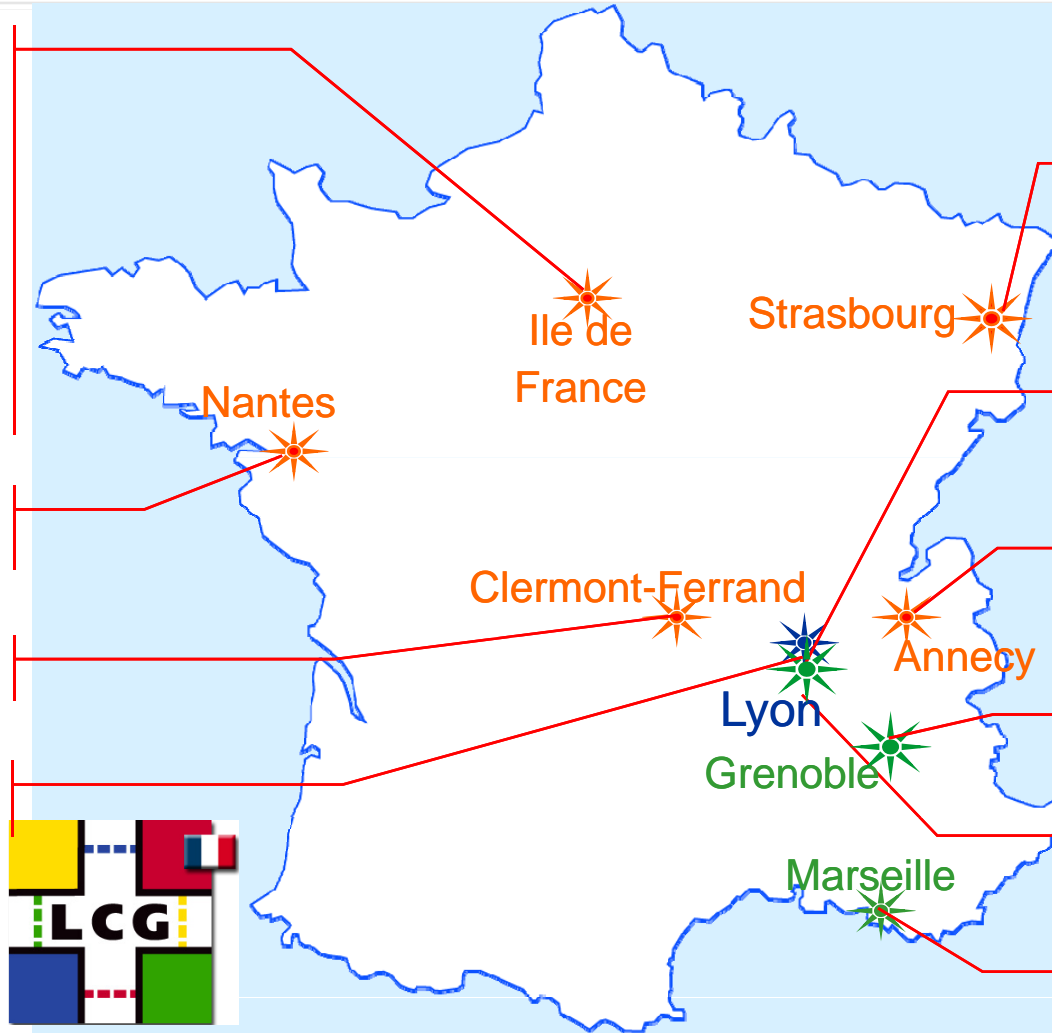
Tier-2: GRIF

- CEA/IRFU
- LAL
- LLR
- LPNHE
- IPNO

Tier-2: Subatech

Tier-2: LPC

Tier-1: CC-IN2P3



Jun. 2008

Tier-2: IPHC

Oct. 2007

Tier-3: IPNL

Tier-2: LAPP

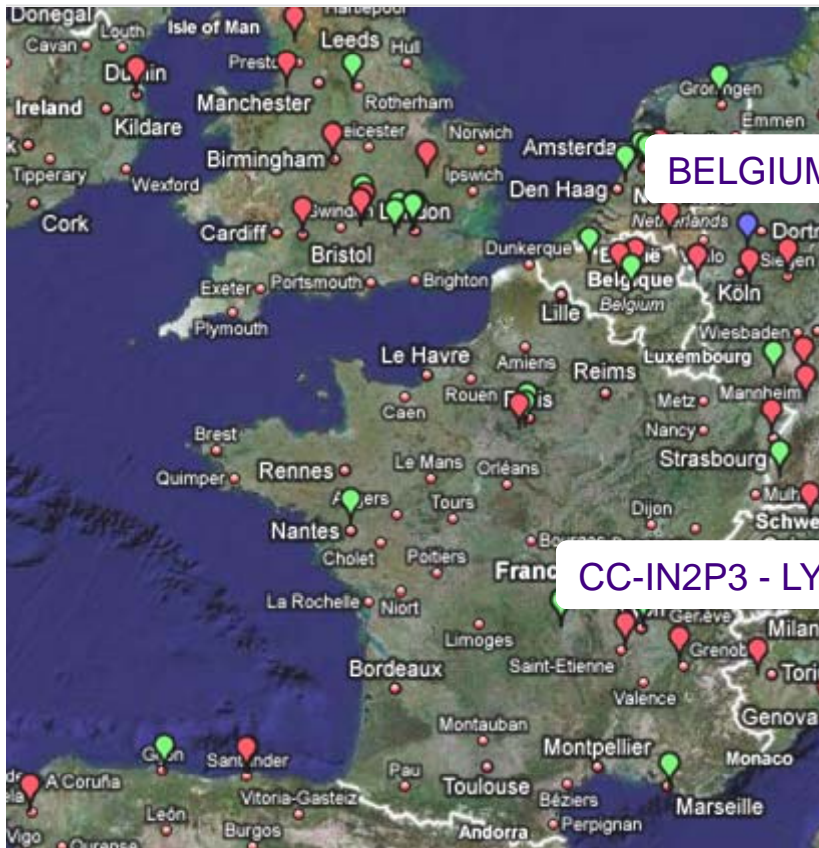
Tier-3: LPSC

AF: CC-IN2P3

Tier-3: CPPM



# Associated foreign Tier-2s

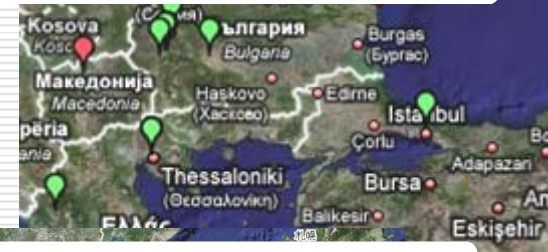


BELGIUM CMS TIER-2s

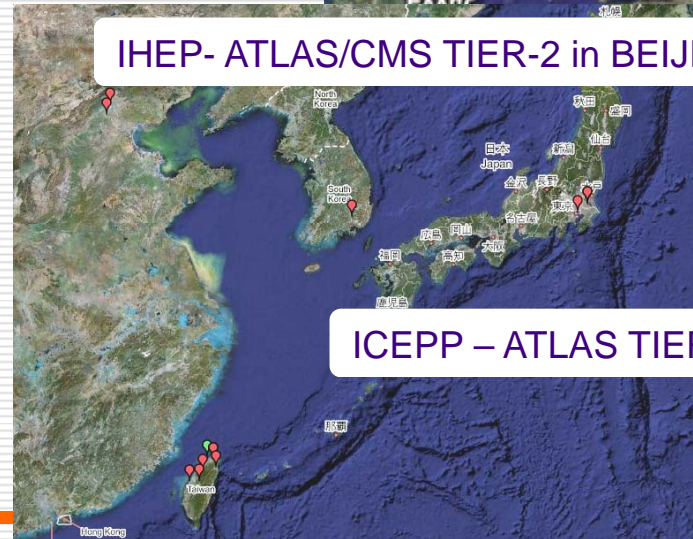
CC-IN2P3 - LYON



ROMANIAN ATLAS FEDERATION



IHEP- ATLAS/CMS TIER-2 in BEIJING



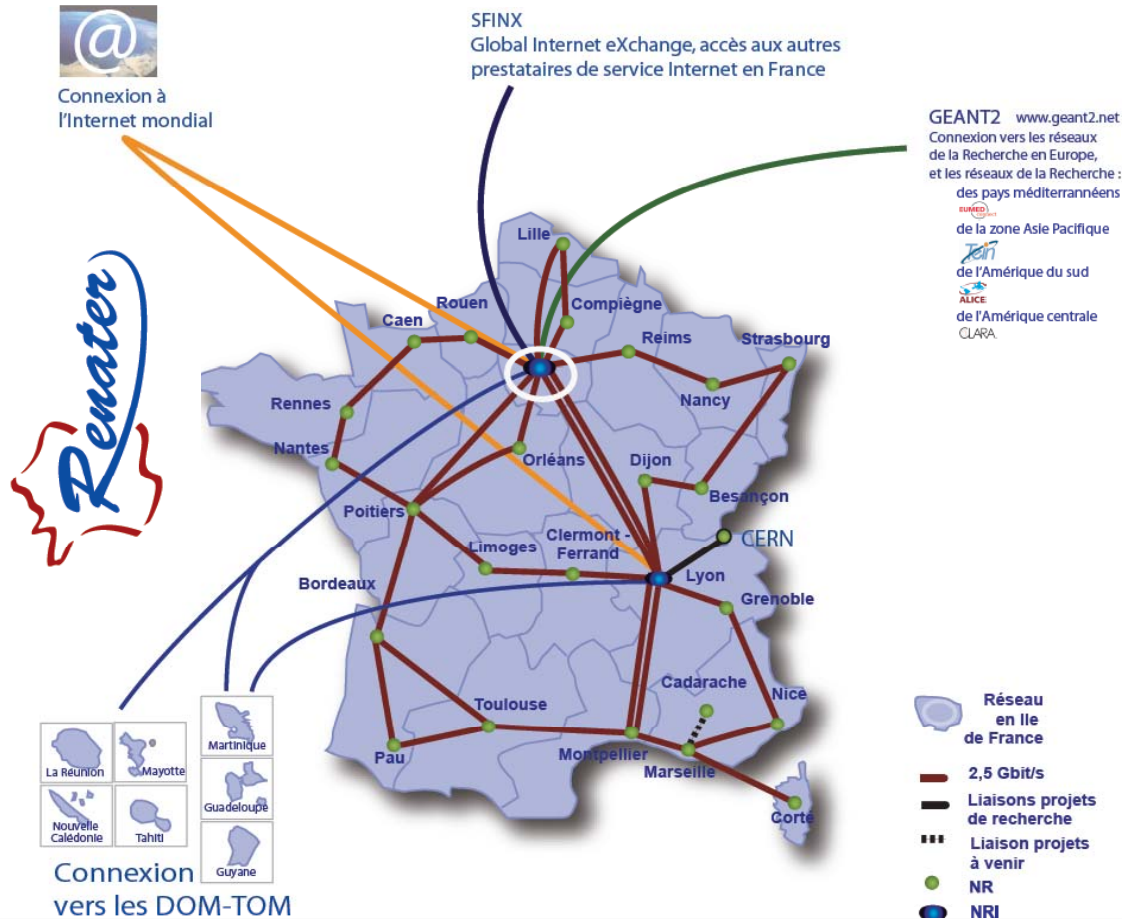
ICEPP - ATLAS TIER-2 in TOKYO

# Supporting 4 LHC VOs

- All sites also support other virtual organizations, including the EGEE official VOs and local users
  - Non HEP funding – Agreement with other communities
    - ◆ Share of resources in place. Bursty LHC activities allows an opportunistic usage of unused LHC capacity.

		Alice	Atlas	CMS	LHCb
T1	CC-IN2P3	●	●	●	●
Tier-2	AF Lyon	●	●	●	●
	GRIF (Paris region)	●	●	●	●
	LPC (Clermont)	●	●		●
	Subatech (Nantes)	●			
Tier-3	CPPM (Marseille)		●		●
	IPHC (Strasbourg)	●		●	
	IPNL (Lyon)	●		●	
	LAPP (Annecy)		●		●

# Networking infrastructure



- Each Tier-2 connected to RENATER backbone at 1 Gbps
- Separate circuit for connecting tier-1 and foreign sites (through GEANT) at 10 Gbps
  - In operation since June 20<sup>th</sup>
- 2 Tier-2s (IPHC, LAPP) connected through regional networks



# Tier-2s & Tier-3s technical group

- Objectives
  - federate tier-2 & tier-3 technical teams and ensure their integration in the WLCG collaboration
  - coordinate the deployment of computing resources in Tiers-2 & Tiers-3 for simulation and analysis of LHC experiments
- Organization
  - Strong collaboration
    - ◆ with tier-1 at CC-IN2P3
    - ◆ with national experiment representatives
  - Monthly (remote) meetings with representatives of french sites
  - Two physical meeting per year
  - Work in coordination with the EGEE operations organization in the region
    - ◆ Based at the tier-1, which acts as EGEE Regional Operations Centre
    - ◆ Includes non LHC sites (both academic and private)
  - Dedicated mailing list, wiki (<http://lcg.in2p3.fr/wiki/index.php/T2-T3>) and agenda category (<http://indico.in2p3.fr/categoryDisplay.py?categId=61>)

# Coordinated activities

- Procurement
  - Meetings with potential hardware vendors for introducing the project, identifying representatives and getting similar commercial conditions for all sites
  - Sharing of technical (i.e. results of hardware evaluation) and commercial information between sites
  - Sharing of technical documents used for call for tenders
- Strong partnership with RENATER
- W-LCG CPU normalization on all sites
- Site management (common choices / global expertise)
  - Quattor used by most of the LCG-France sites
  - Management of clusters with Torque/Maui
    - ◆ Sharing technical information on how to configure Torque/Maui in the context of each particular site
  - DPM-based storage elements

# Coordinated activities (cont.)

- SA1-FR / LCG-France working groups
  - Accounting WG co-animated by C.Barbier (LAPP), F.Schaer (Irfu)
  - Monitoring WG co-animated by C.Leroy (Irfu), C. L'horphelin (CC-IN2P3)
- Integration of grid resources and grid operations into the daily computing operations
- Involvement of physicists working together with sites is absolutely necessary
  - stronger coordination of the computing activities of each experiment at the national level would help sites deliver a better service
  - impossible for site representatives to attend all the computing meetings for all supported experiments
- How to follow the experiments activities at the region level ? Each experiment seems to have its own approach. Some answers and more informations were given today
  - ATLAS Cloud fits well with LCG-France regional approach provided you have experts
  - CMS mesh : direct contacts with all sites
  - Alice : efficiency of the Alice Task Force
  - LHCb : centralized approach

# *“Finding a way to collaborate”*

- LCG-France has created a community
- Project management helps a lot
  - Global project made out of sites sharing a common goal
  - Funding, Project charter, Planning, Partnership...
- Coordinated activities are the key points
  - Technological and scientific impact on the sites
  - Teams are globally distributed
  - Adaptive organization, knowledge network...
- Towards LCG service...
  - We are now operating grid services with EGEE operational model
    - ◆ We have a generic operational model for baselines services
    - ◆ Next step : Transition to NGI
  - Needs for a specific LCG operational model included all Tiers ? What are LCG specificities compared to the EGEE operations ?
  - Needs for an LCG-France operational model compatible with EGEE (a future NGI) and W-LCG ?