

GRID Computing

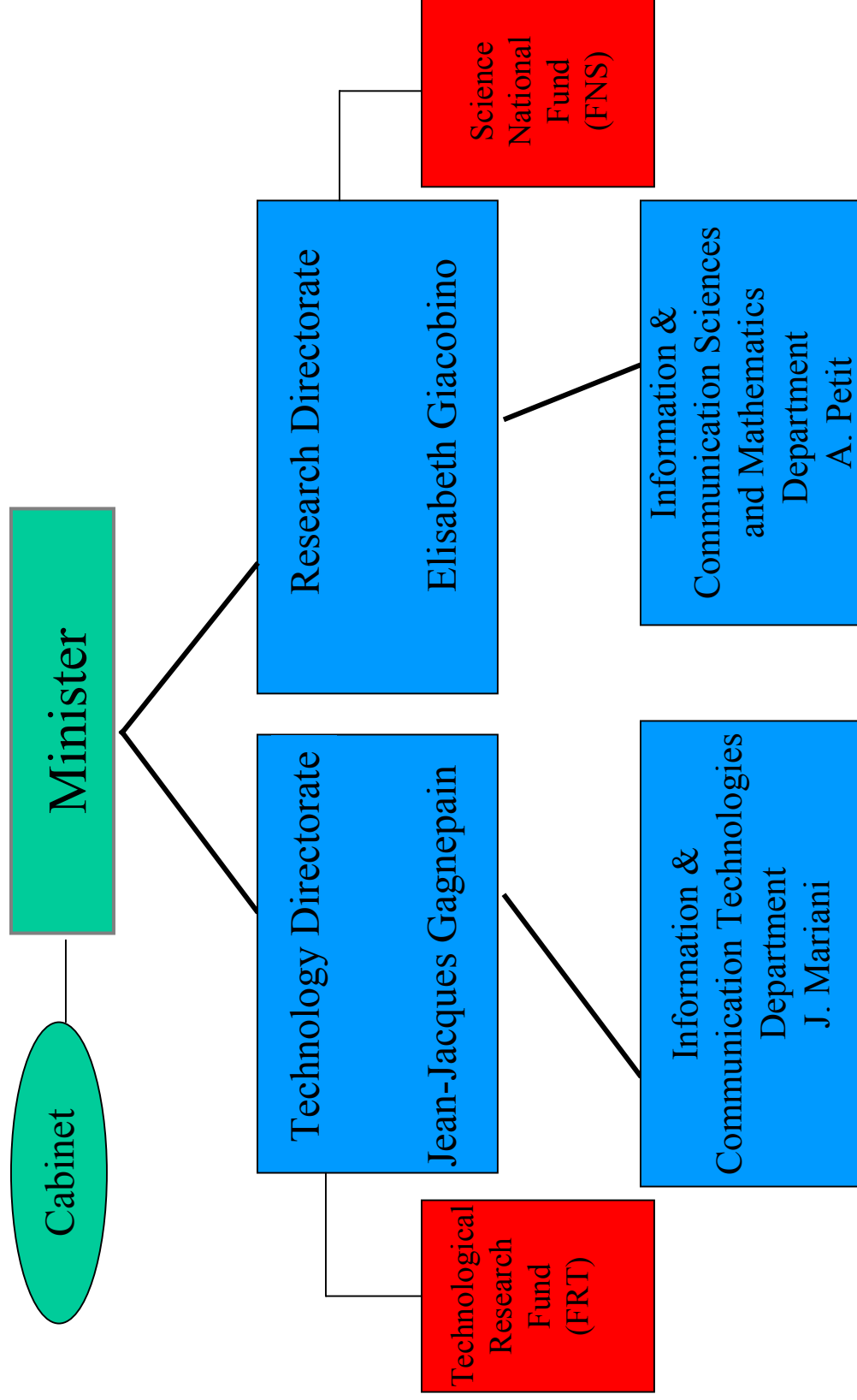
French Initiatives: an overview

Antoine Petit

Ministère délégué à la Recherche et aux Nouvelles Technologies

Direction de la Recherche

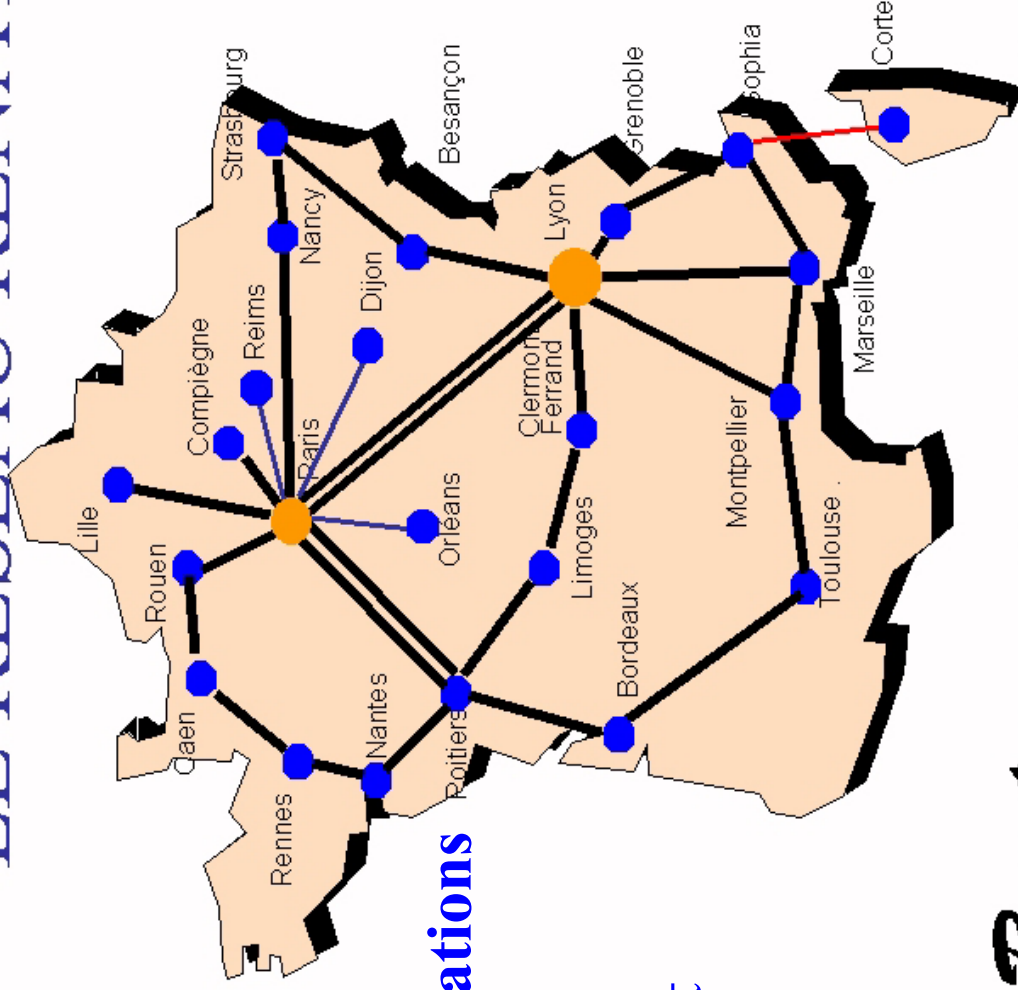
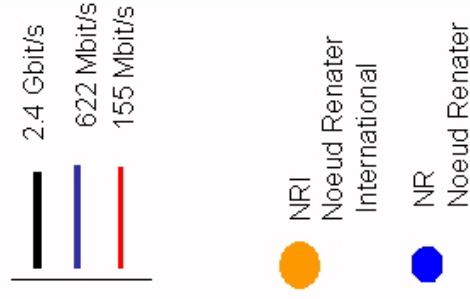
Organization of the MRNT for ICST



GRID Computing in France

- Several complementary national actions with a light informal coordination
 - Infrastructures
 - Support to research and development projects (with industrial partners)
 - Support to fundamental research projects (without funded industrial partners)

LE RESEAU RENATER-3



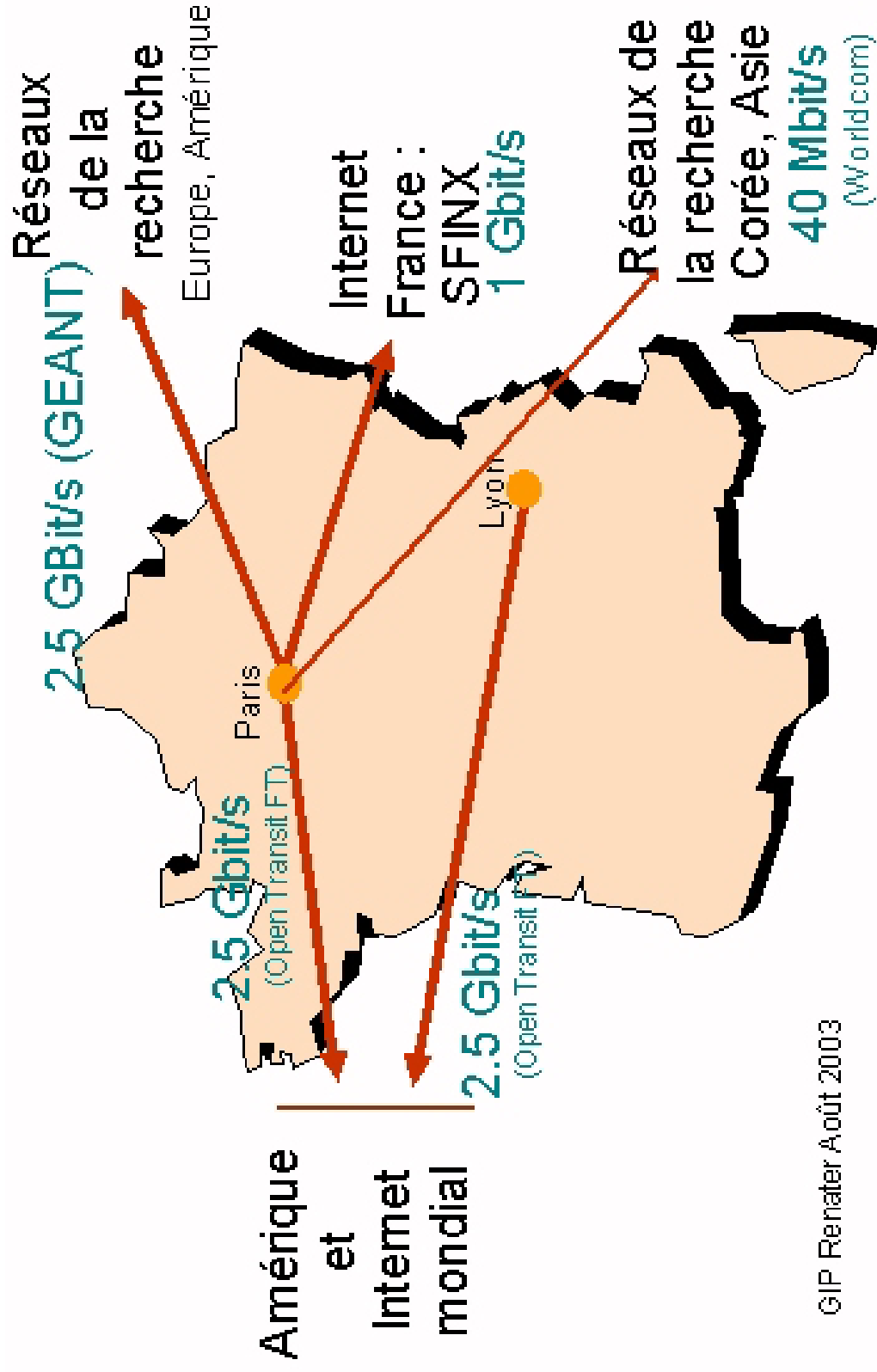
**RÉseau
National de
Télécommunications
pour la
Technologie,
l'Enseignement
et la
Recherche**

Renater

Paris, 27 juin 2002

RENATER-3

10/12



GIP Renater Août 2003

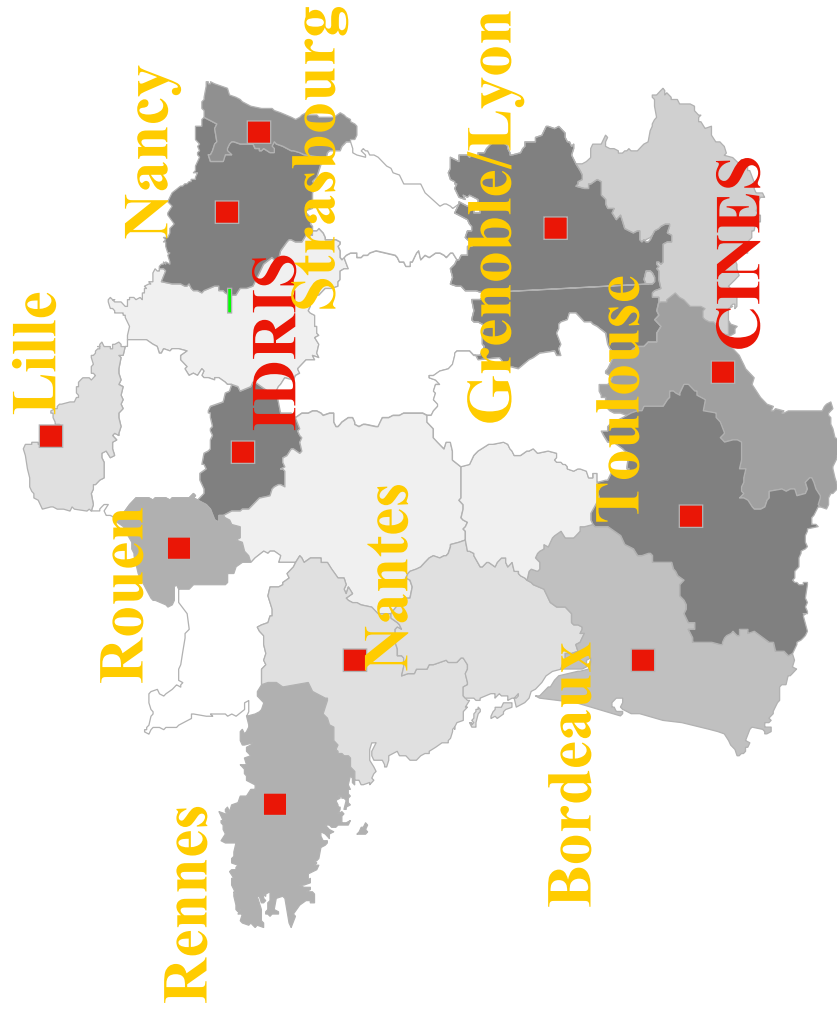
Réseau National de Télécommunications pour la

Technologie, l'Enseignement et la Recherche

- Network backbone (2.4 Gb/s)
- More than 600 sites connected
- Sectorial deployment (research, education, medical, administration, culture...)
- Local deployment (backbone, regional plaques)
- Opening to international
 - Geant, Asia, Mediterranean countries, Balkans, US
- Use for GRID computing

Supercomputing centres

- Two national centres
 - CINES (Montpellier)
 - IDRIS (Orsay)
- Nine regional centres
 - experiments
 - formation
- Thematic centres
 - CEA/DAM
 - IN2P3
 - Genopoles
 - ...



RENATER + Centres

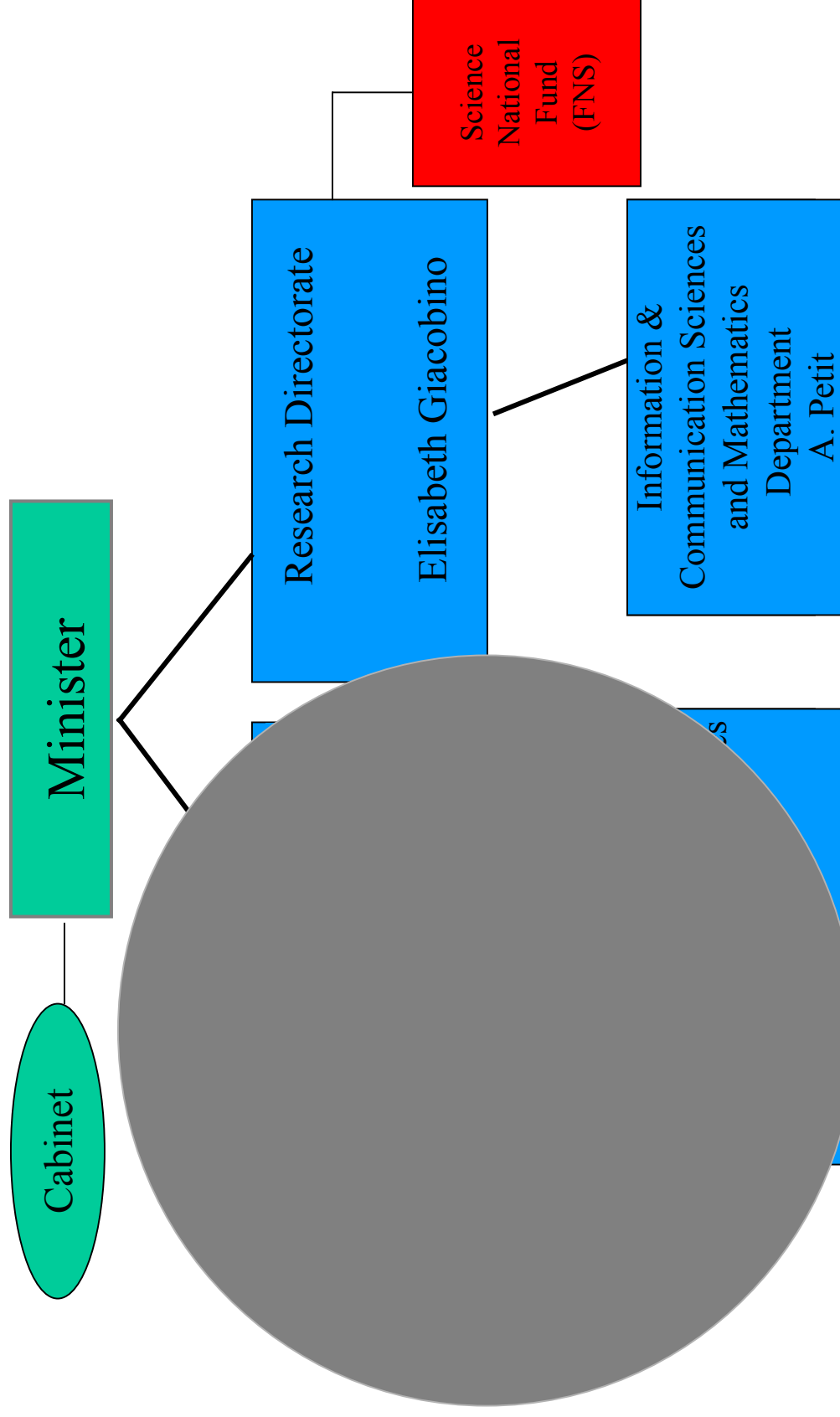
	RENATER	CINES	IDRIS	Total
People	25	45	65	135
Annual Budget	26 M€	8 M€	15 M€	49 M€

- CINES + IDRIS: ~ 6 Tflops
- Ongoing reflection to develop grid services for users
- Effort has to be done on formation of non specialists

GRID Computing in France

- Several complementary national actions with a light informal coordination
 - Infrastructures
 - Support to research and development projects (with industrial partners)
 - Support to fundamental research projects (without funded industrial partners)

Organization of the MRNT for ICST



Technological Research Fund (FRT)

- 2003: 144 M€
 - among which 78 M€ for Technological Research and Innovation Networks (RRIT)
- Additional funds from other ministries: MinEFL, MCC

- Joint funding of MRNT, MinEFI and MCC for research / industry cooperation
- Exploratory projects (MRNT), precompetitive projects (MinEFI/MCC), Platforms (testbeds)
- Projects: at least 3 partners, 1 public research, 1 industry
- Support from Ministries :
 - Public laboratories : 100 % marginal cost
 - SMEs : 50 % total cost
 - Large companies : 20 % total cost / 35 % if SME participates in consortium

ICT RRIT

- 2003: 24,6 M€
 - RNRT (Telecommunications) : created in 1998
 - RMNT (Micro & nanotechnologies) : created in 1999
 - RNTL (Software technologies) : created in 2000
 - RIAM (Audiovisual & Multimedia) : created in 2001
- From 1998 to 2002
 - 430 labeled projects
 - representing a total effort of 720 M€ (360 M€ public support, 360 M€ industrial support)

e-Toile project

- Schedule:
 - RNTL Label : 11 / 12 / 2001 for 2 years
 - Web site : <http://www.urec.cnrs.fr/etoile/>
- Dimensions:
 - Human resources: 500 men-months (till 50 persons)
 - Budget for 2 years (estimation with salaries) : 13,6 M€
(1.9 M€ from RNTL)
- Main objectives of this exploratory project:
 - building, at France scale, a software platform for experimentation in high performance grids
 - original components integration in a grid middleware for a step forward vs existing middleware limitations
 - proving their efficiency for complex applications, cpu intensive and data intensive

e-Toile partners



CENTRE NATIONAL
DE LA RECHERCHE
SCIENTIFIQUE

uréc



IRISA

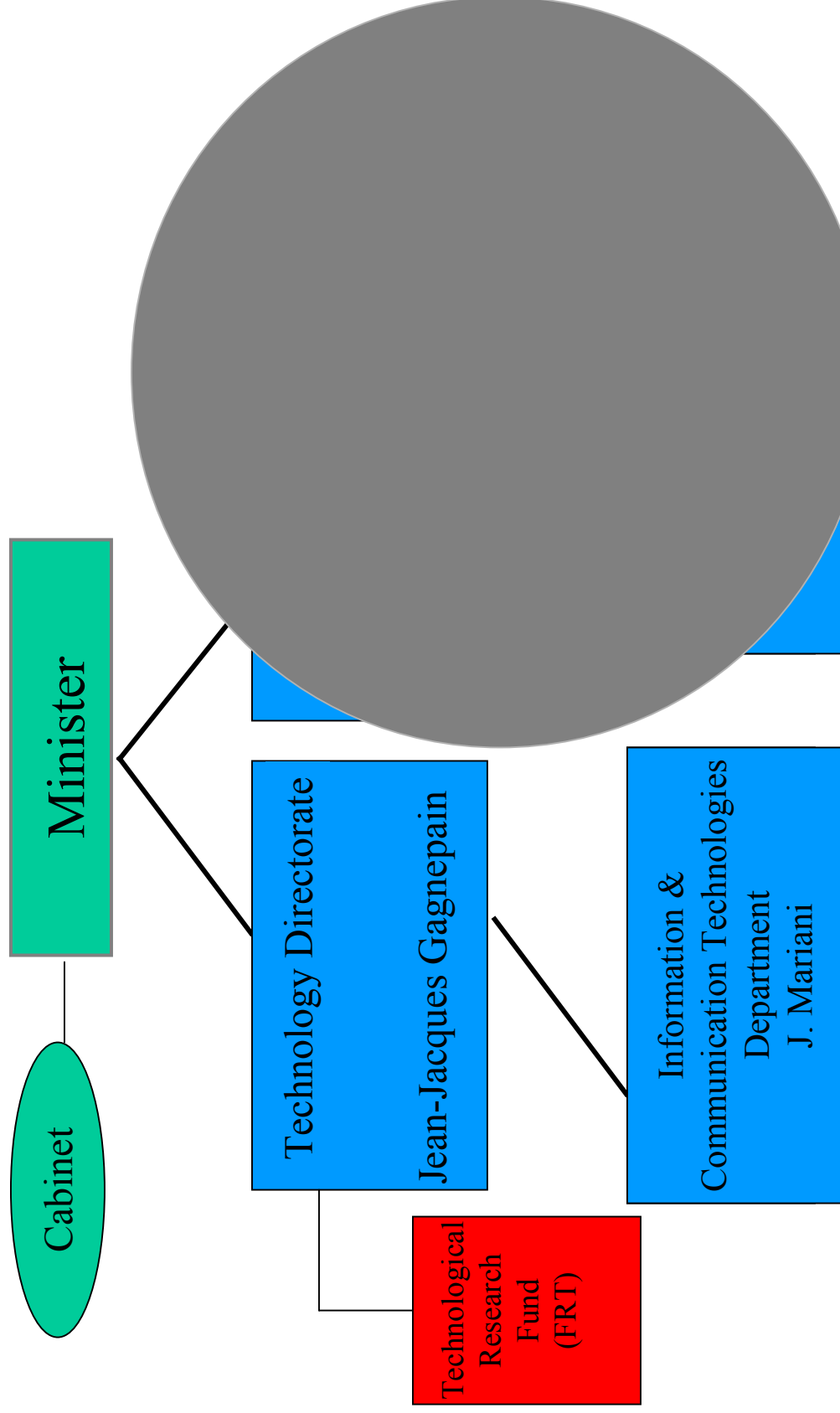
institut de recherche en informatique
et systèmes aléatoires



GRID Computing in France

- Several complementary national actions with a light informal coordination
 - Infrastructures
 - Support to research and development projects (with industrial partners)
 - Support to fundamental research projects (without funded industrial partners)

Organization of the MRNT for ICST



Science National Fund (FNS)

- 2002: 151 M€
 - ICS: 3,75 M€
 - Nanosciences: 6,75 M€
- 2003: 147 M€
 - ICS: 12,15 M€
 - Infrastructures: 1,5 M€
 - Nanosciences: 7,7 M€

FNS 2003: ICS

- ICS: 12,15 M€ (No salary included!)
 - Security of Information Systems: 5,35 M€
 - Massive data: 5,4 M€
 - ✓ both with CNRS/DSTIC and INRIA
 - GRID'5000 action: 1 M€
 - Support to submissions of NoE: 0,4 M€
- Additional Post-doc and PhD grants
- In cooperation with CNRS/STIC and INRIA

Globalisation des Ressources Informatiques et des Données

- Created in 2001
- Director : Michel Cosnard
- Chairwoman of the Scientific Council: Brigitte Plateau
- <http://www-sop.inria.fr/aci/grid/public/>

	Submitted	Funded	Apart from salaries (3 years projects)	Estimation with salaries (3 years projects)
2001	57	18	2,25 M€	24,9 M€
2002	21	12	3 M€ + 8 phd grants	18,7 M€
2003		2+1	2,2 M€ + 1 phd grant	4,8 M€
		32 + 1	7,45 M€ + 9 phd	48,4 M€

GRID Programme (contd)

- Multidisciplinary projects: 14
 - 4 mathematics libraries, 6 physics-chemistry, 4 data
- Software projects: 11
 - 2 network, 4 middleware, 3 component and compilation, 2 data
- Animation activities : 4
- International: 1

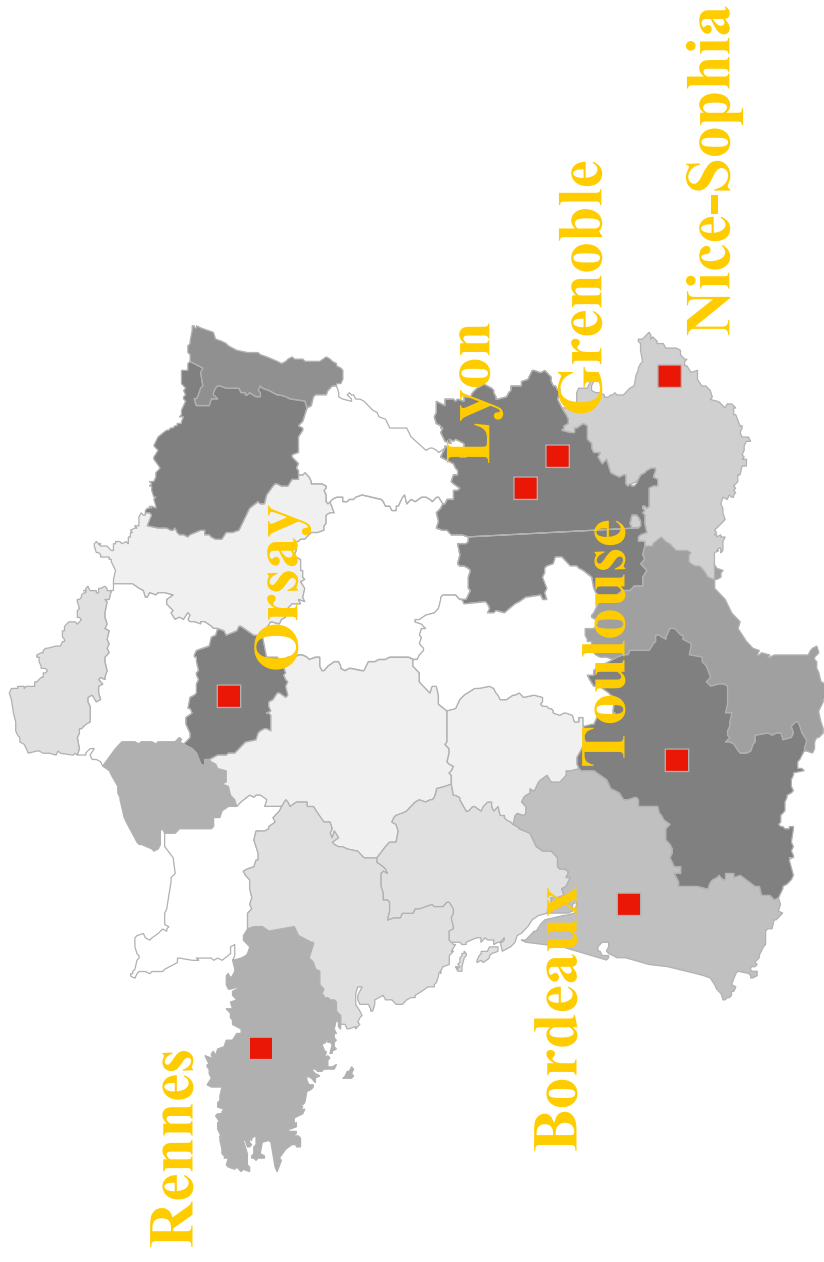
Funded projects in 2003

- Grid Data Service (GDS) 0,16 M€
 - A data sharing service for scientific grid applications
- Data Grid Explorer 1,03 M€
 - An emulation environment to study large scale configurations
- GRID'5000 1M€
 - A research platform

« GRID'5000 »

- National initiative to build a research platform
(10 sites of 500 pc each ?!)
- MRNT can and will play only a bootstrap role
- 1 M€ in 2003 to start the project
- Essential synergy with the other french infrastructures

GRID'5000: 1st phase



Conclusion

- A voluntary policy to develop GRID Computing
 - From a users point of view
 - From a research point of view
- A strong involvement in EU projects
 - GEANT
 - DEISA (EUROGRID)
 - EGEE (DATAGRID)
 - Submitted CoreGRID REX

Some ideas for future french/UK collaborations?

- Joint call for proposals?
 - For fundamental research projects?and/or
 - For research and development projects?
- Connections between French (GRID'5000?)
and UK GRID infrastructures?