



Grand Équipement National de Calcul Intensif

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HPC is a "Key Technology"

- Supercomputers are the tool for solving most challenging problems through simulations
- Access to world class computer capacity is essential for international competitiveness in science and engineering
- Providing competitive HPC services is a continuous endeavor
- This has been acknowledged by leading industrial nations such as USA and Japan since the 1990's



France : national organization has been set up
Europe : PRACE Project



CI-DRAFT: Version 7.1 (July 20, 2006)

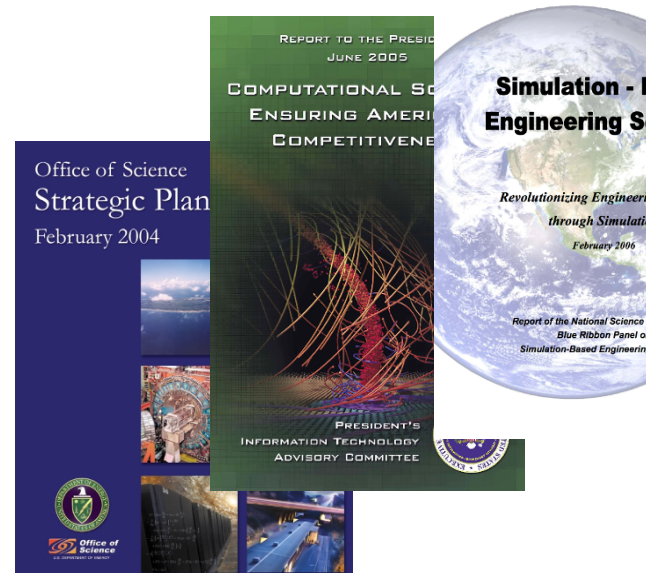
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NSF'S CYBERINFRASTRUCTURE VISION FOR
21ST CENTURY DISCOVERY

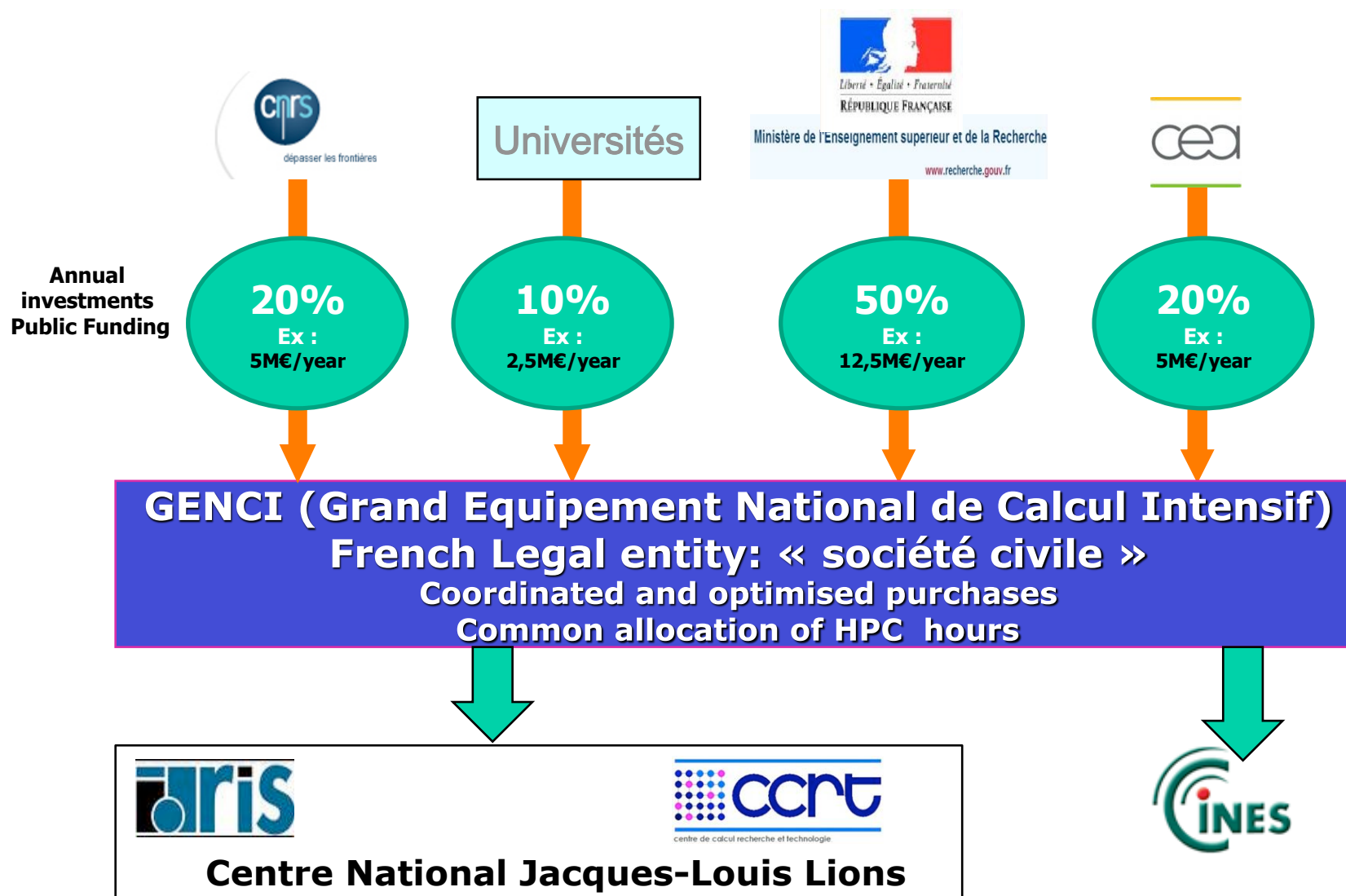
NSF Cyberinfrastructure Council



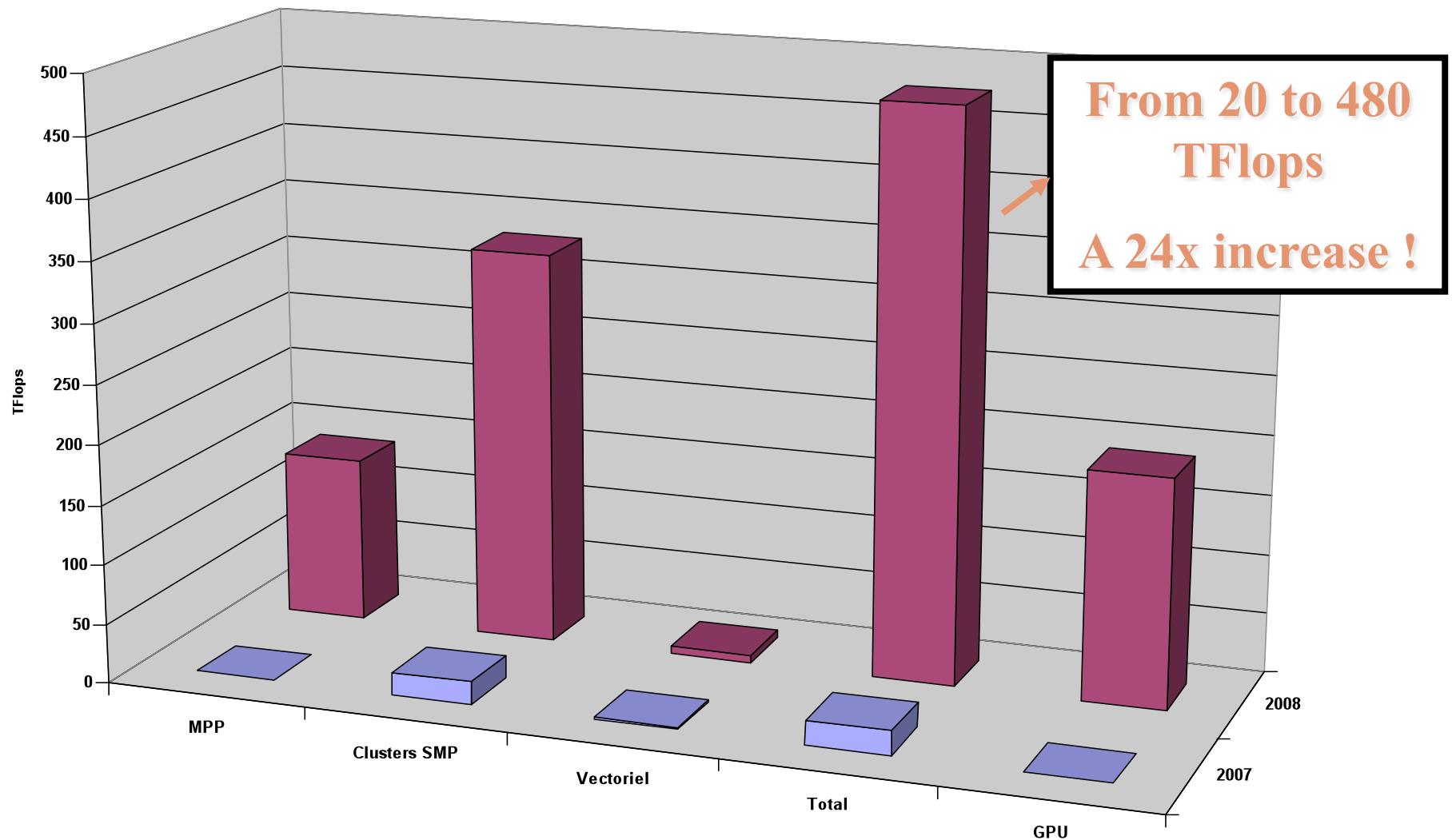
National Science Foundation
July 20, 2006
Version 7.1



A national coordination



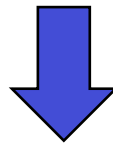
Capacity of high performance computing available to the whole scientific community in early 2009



- To promote simulation and high performance computing in fundamental and industrial research
 - ➡ **Member of Ter@tec**
 - ➡ **Strong interest in IESP**
- To promote the organization of an European HPC area and to participate to its achievements
 - ➡ **GENCI is the french representative in** 
- To open its equipments to all interested scientific communities, academic or industrial, national, european or international

HPC through simulation : important leverage for both research and industry competitiveness

- From a national perspective : it is not sufficient to follow the trends but it is crucial to anticipate them :
 - To be able to face future societal or industrial challenges
 - To prepare users for future parallel architectures and applications
 - To increase future scientists or engineers involvement in these techniques



Integration in a global European HPC ecosystem
Collaboration with international teams



PRACE = An agreement between 15 partners in charge of HPC in their own countries



Partnership for Advanced Computing in Europe

Supercomputers are indispensable tools for solving the most challenging and complex scientific and technological problems through simulations. To remain internationally competitive, European scientists and engineers must be provided with leadership-class supercomputer systems. PRACE, the Partnership for Advanced Computing in Europe will create a persistent pan-European high performance computing (HPC) service and infrastructure. This infrastructure will be managed as a single European entity. European scientists and technologists will be provided world-class leadership supercomputers with capabilities equal to or better than those available in the USA and Japan. The service will comprise three to five superior HPC centers strengthened by regional and national supercomputing centers working in tight collaboration through grid technologies. In other words, the partnership will become a unique entity of the pan-European HPC ecosystem.

Objectives

- To create from 2010 a permanent pan-European HPC infrastructure
 - 3 to 5 Tier0 HPC centers $\geq 1\text{PFlop/s}$ (in 2010)
 - Structure, legal entity, governance, coordination/management
 - Center with recognized competencies able to provide the academic community with high quality and complete service
- To provide a smooth insertion into the European HPC Ecosystem of national and regional centers.



1st action FP7 « preparatory phase »
20 M€ - 08/01/01 to 09/31/12