



# Research on Grids and Production Grids Bridging the Gap

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## Making connections

- ▶ One of the missions of the Institut des Grilles
- ▶ In cooperation with Aladdin/Grid'5000
- ▶ In both directions
  - ▶ Research ↔ Production

## First call to proposal in 2009

- ▶ Total funding: 20,000 euros (10 from IdG, 10 from Aladdin)
- ▶ Lightweight procedure: scientific program on 3 pages
- ▶ Objective: establish consortiums and submit bigger proposals
- ▶ Selection ratio: 7/9

- ▶ **Modeling, Simulation and HPC for Solar Energy**
  - ▶ Simulation of turbulent flow submitted to large thermal gradients
  - ▶ Investigate 3D cellular automata
- ▶ **HPC on GPUs for Integrative Biology**
  - ▶ Multi-scale, multi-agent system for the simulation of transport problem in tumoral tissues
  - ▶ Monte-Carlo on EGI + Interactive part on GPUs
- ▶ **Funding: 2 000 euros for a common project**
  - ▶ Both aim at using GPUs

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  - ▶ Monte-Carlo on EGI + Interactive part on GPUs
- ▶ Outcome: common ANR INFRA project submission
  - ▶ Use complex systems for solar energy systems

- ▶ XWHEP, A secure Computing Grid interconnected to EGI
  - ▶ Interconnect Desktop Grid and production grid
  - ▶ Special focus on security
  - ▶ Funding: 2 000 euros
  
- ▶ Virtual Screening of Seeds
  - ▶ Letting lineage grows is long and expensive
  - ▶ Find correlations between genetic markers *in silico*
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  - ▶ Outcome: FUI Virtual Testing
    - ▶ Cloud computing for corn genomic selection

- ▶ Energetic Efficiency in Grids: from research to production
  - ▶ Instrumentation and algorithms in research context
  - ▶ Extend them to the production world
  - ▶ Funding: 4 000 euros
  
- ▶ SimGLite, when SimGrid meets gLite
  - ▶ How to calibrate experiments without wasting production resources?
  - ▶ Simulation/Emulation of gLite components
  - ▶ Funding: 5 000 euros



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  - ▶ Outcome: ANR JCJC ScaLab submission
    - ▶ Methods, Services and Tools for Challenging Large-Scale Experiments on Distributed Testbeds

- ▶ **Simulating Data-Intensive Applications**
  - ▶ How to try new replication strategies without service interruption?
  - ▶ Coarse grain models of storage elements
  - ▶ Funding: 5 000 euros

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  - ▶ **Outcome: ANR INFRA SONGS submission**
    - ▶ Simulation of Next Generation Systems with SimGrid



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## Bad points

- ▶ Money for meetings is not an issue
  - ▶ Time and Manpower are
- ▶ Have to think to alternate funding schemes
  - ▶ Internships for instance

## ► Other unofficial interfaces



- ▶ JSAGA + DIET (SAGA+GridRPC)
- ▶ Cigri / OAR (Ciment / Grid'5000)
- ▶ Cloud @ ENS in December 2010
- ▶ NGI Operation Meeting
  - ▶ Common procedures and tools
- ▶ Hopefully more to come!