IBERGRID IMPLEMENTATION & DEPLOYMENT ROADMAP

Santiago de Compostela, 14 – 16 de mayo de 2007

WHERE WE ARE

The European Union has promoted the development of networks in Europe and the rest of the world..

There are several Grid initiatives around the world, one of them promoted by the European Union, another one by different countries.

Development of scientific Applications and services that cover many aspects of e-Science.

Many fields in Science need international collaboration activities, institutional cooperation and extended infrastructures able to provide a long-term continuity.

A e-Infrastructure global dimension is therefore an essential aspect.

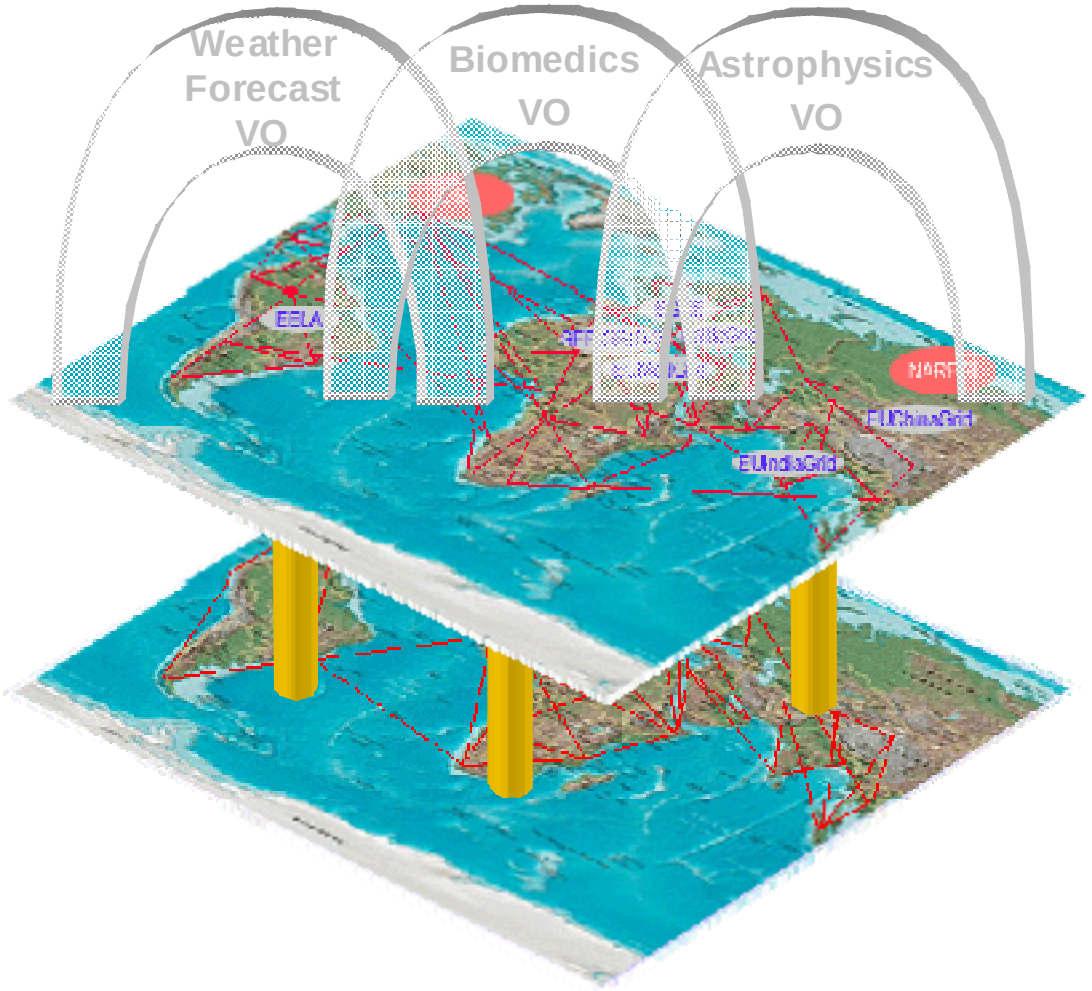
WHERE ARE WE GOING

There will be global services accessible in each part of the world.

Global Network will cover all countries.

All Grid initiatives will be interconected in an interoperable network.

Scientifics will be able to access all world resources



BACKGROUND

- Scientific and technological cooperation agreement between portuguese republic and spanish kingdom of 8th november 2003.
- Memorandums of understanding for grid computing and R&D electronic networks of 19th november 2005 (Evora).
  - Common access to resources
  - Information interchange and training
  - Researchers mobility
  - Common R&D projects

- Mixed committee of memorandums in Madrid meeting (2-10-2006) commited a mixed work group to elaborate an Iberic Infrastructure common plan for distributed computation.
- Mixed work group in its Braga meeting (12-11-2006) designated the team and recommended to make a road map.

SPANISH AND PORTUGUESE E-SCIENCE CAPACITIES

SPAIN

- **Research Grid Groups**: PIC, UPV, CSIC-UV (IFIC), BIFI, CESGA, UCM, IFAE (UAB), CSIC-UC (IFCA), UB, USC, UAM, RedIris, CIEMAT, etc.
- **Supercomputing Centers**: BSC, CESGA, CESCA, CIEMATR, CICA, INM, EPPE, CEPBA (UPC), UPM, IAC, Zaragoza, Valencia, etc.
- **Main Projects:** EU Data.Grid, LHC Computing Grid, CROSSGRID, EGEEI&,II, EELA, EUMEGRID, LCGII, DEISA, Int.eu.grid.
- **Applications:**

  BIOMEDICINE (Proteomic, Medical Physics Diagnostic),

  ENGINEERING (Fotonic, Materials),

  ENERGY (Fusion, Renewable Energy),

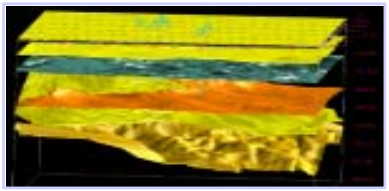
  SCIENCES (High Energy Physics, Cosmology, Gamma Ray Astroomy, Environment, Chemistry).

SPANISH AND PORTUGUESE E-SCIENCE CAPACITIES

PORTUGAL

- **Research Grid Groups:** LIP, University of Aveiro, University of Lusiada, University of Minho, University of Porto, LNEC, University of Coimbra.

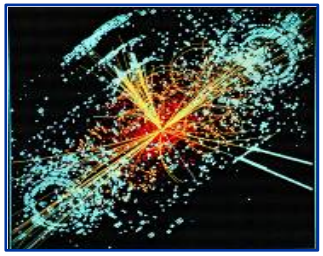
- **Main Projects**: EGEE I&II, EELA, Data.Grid, Int.eu.grid, LHC Computing Grid, COREGRID
- **Applications:**



BIOMEDICINE (Image Computing, Diagnostic),
ENERGY (Fusion),
SCIENCES (High Energy Physics, Environment, Maritime Simulation),
CIVIL (Fire Simulation, Civil Protection)

PORTUGUESE AND SPANISH GRID ORGANIZATIONS

PORTUGAL



- INGRID
  - Coordinator: FCT in collaboration with UMIC.
  - First call for middleware and applications in 2006.
  - Importan investments in network and Grid infrastructure in 2007.
  - NREN is considering specific dedicated network arquitecture for Grid.

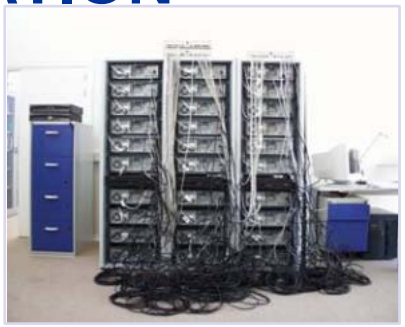
SPAIN

- E-SCIENCE NETWORK
  - E-Science white book in 2004.
  - IrisGrid.thematic network launched in 2002 with globus toolkit with 40 research groups.
  - Approved document for national Grid network (coordinator, middleware, aplications, Grid infrastructure, HPC infrastructure).

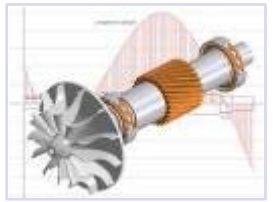
COLLABORATION BETWEEN SPAIN AND PORTUGAL

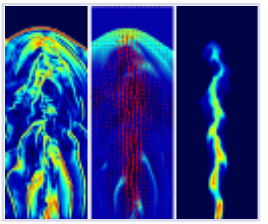
- EGEE. 14 Centers in southwest federation. Collaboration in SA1 (Infrastructure), SA3 (Middleware Certification), NA2, NA3 (Disemination and Training) and NA4 (Aplications).
- WLCG. TIER 1 (PIC), 3 TIER 2 in Spain and 1 TIER 2 in Portugal
- EELA
- CORE.GRID
- TORGA.NET
- CYTED GRID
- CROSSGRID
- INTERACTIVE EUROPEAN GRID
- COMMUNICATIONS. Connections in Galicia and Extremadura frontiers.

GENERAL IDEAS FOR GRID COLLABORATION

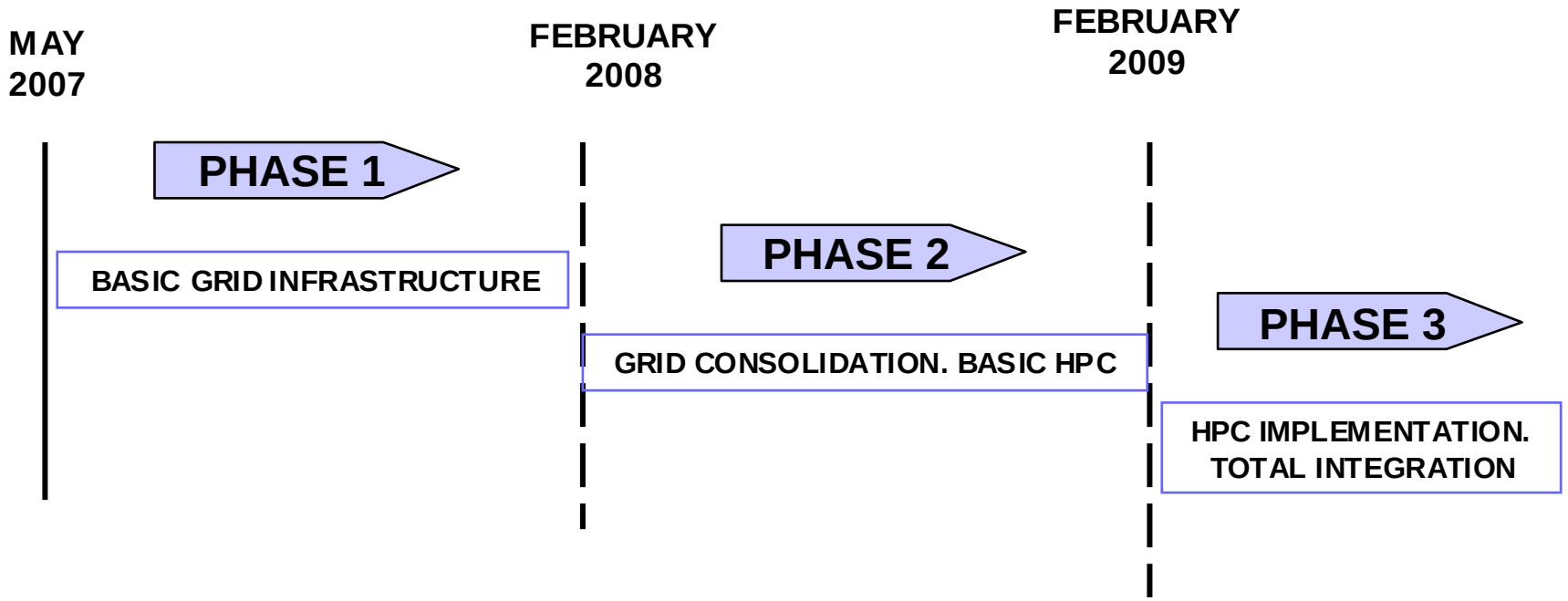


- Wide open and effective collaboration
- Strategic alliance in UE
- Common Infrastructure
  - Firstly Based on EGEE and EELA Standar
  - Powerful Common Communications Network
    - Coordination RedIris-RCTS; Possible specific Grid Network
  - Organized Structure of Resources
    - Users certification; Resource centers support; Security; Monitoring and control
- Applications
  - Push Common Virtual Organizations
  - Select Appropriate Common Applications
- Information and Training
  - Take Advantage of Common Initiatives
- Researchers Mobility
  - Coordinate National Plans and Promote Bilateral Cooperation





ROAD MAP



There is not favorable winds for people who don't know where to go

Seneca

ORGANIZATION

BUDGET

- Each country should finance its coordination costs through special actions of National Plans.
  - One first estimation of coordination costs is aprox. 30 K€/year/country
- For infrastructure and specific applications the money should be obtained from National Grid Programmes. An specific coordination between national programmes would be very effective.

REQUEST TO AUTHORITIES

- Support Iberic Plan Coordination Costs
- Quick Electronic Network Connection
- Specific R&D Programmes Coordination
- Mobility Programmes.

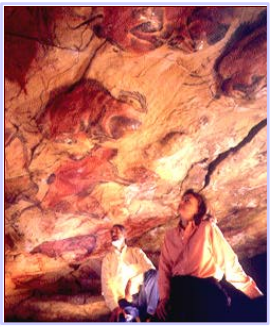
IBERIC INFRASTRUCTURE COMMON PLAN FOR DISTRIBUTED COMPUTATION

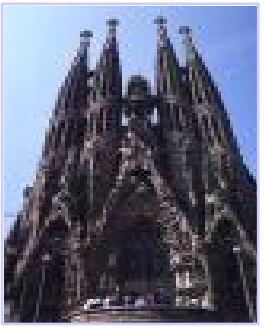
Thank you very much

ROAD MAP

PHASE 1 (9 MONTHS)

- Communication network connection trough Galicia and Extremadura.
- Organization approval and deployement.
- Starting with present infrastructures (glite).
- Identification of COIs and resources inventory.
- Definitions of resource centers characteristics.
- Resources access standars and procedures.
- EUGRID PMA (pkirisgrid + lip ca).
- Common rules of safety.
- Selection of 4 virtual organizations out of the list recomended in Evora. Identification of aplications.
- Training coordination.
- Ibergrid infrastructure sustainability study after UE support.
- Document to improve researchers mobility.

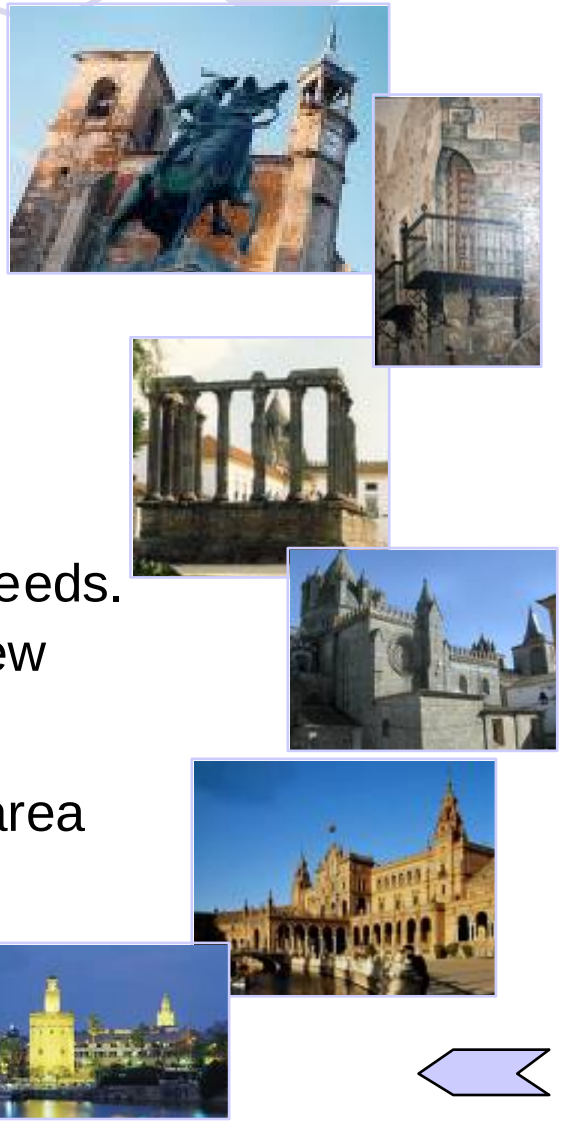




ROAD MAP

PHASE 2 (12 MONTHS)

- Push new resource centers
- Push new virtual organizations and applications
- Testbed deployement
- Definition and development of new middleware needs. Mechanisms for evolution and incorporation of new middleware
- Define and deploy a collaboration system in the area of supercomputing
- Training coordination on new activities



ROAD MAP

PHASE 3

- Supercomputing collaboration deployment
- Definition of specific access mechanisms to Ibergrid
  - Mare Nostrum
  - National Supercomputing Network
  - Finisterrae
  - Others
- Specific training programmes
- Middleware integration
- Apply specific mechanisms of personal mobility

ELECTRONIC NETWORK CONNECTIONS