Fundación CESGA

CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

IFCA
Instituto de Física de Cantabria

The European Grid Initiative, IBERGRID and the Spanish NGI

Dr. Carlos Fernández Sánchez (CESGA)
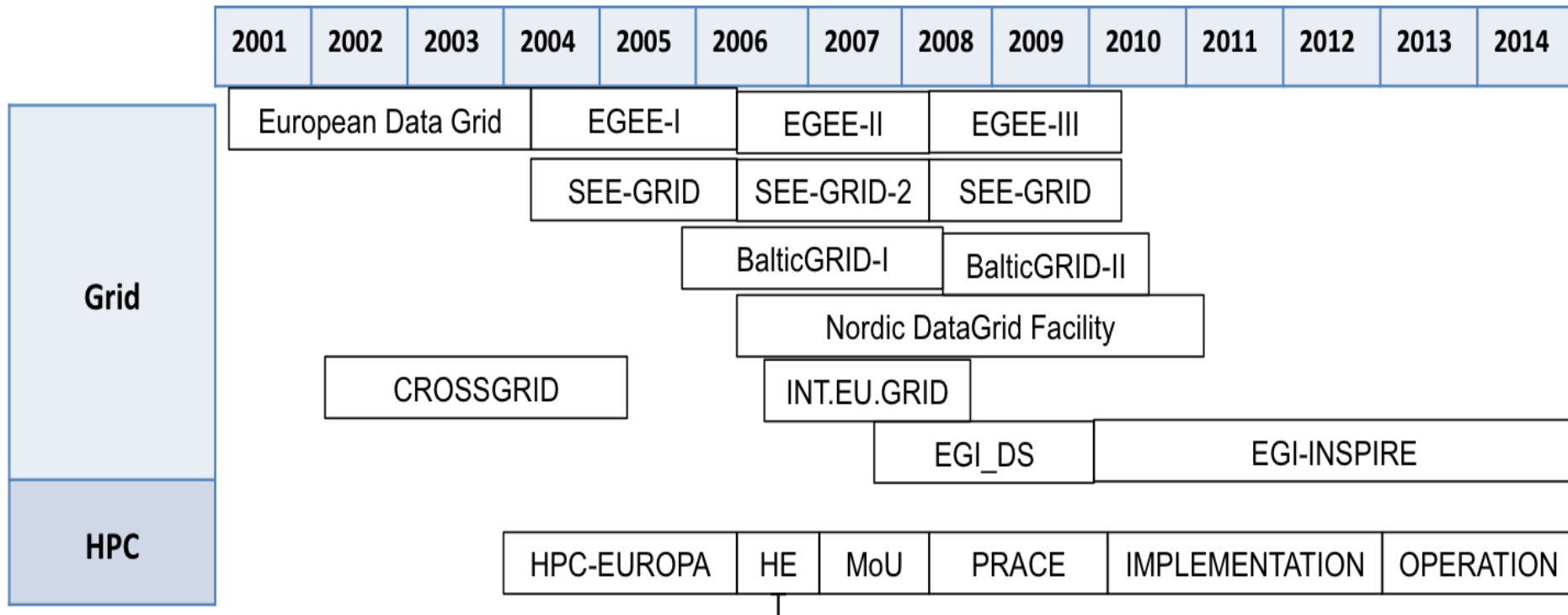**NGI-ES Operations Coordinator**
Dr. Isabel Campos Plasencia (IFCA)
EGI.eu Executive Board
G. Borges, J. Gomes, M. David, H. Gomes (LIP), J. López (CESGA)

- **EGI Framework**
- **Setup of the foundation EGI.eu**
- **EGI-Inspire Project**
- **IBERGRID**
- **Conclusions**

Cyclic project funding through EU Framework needs to be consolidated

- The project **EGI Design Study** (FP7, Sept. 2007- Dec. 2009)

  - Organized the participation of the countries in EGI by assembling the EGI Council
  - Fostered the creation of National Grid Initiatives in the countries
    - Letters of Intent were requested to the Ministries
    - A Memorandum of Understanding was devised in order to move ahead before having formal Statutes
  - Organized the election of the physical location of EGI.eu
    - Amsterdam (Science Park)
  - Organized and follow-up on the developments of the first EGI Councils (July 2009 – December 2009)
  - Concluded with the publication of the EGI-DS Blueprint
    - Guidelines, description of tasks needed to build the European Grid Infrastructure as a service for researchers

  http://web.eu-egi.eu/documents/other/egi-blueprint/

Establishment of a sustainable Grid Computing service for the European research area

EGI.eu global services

NGI international tasks
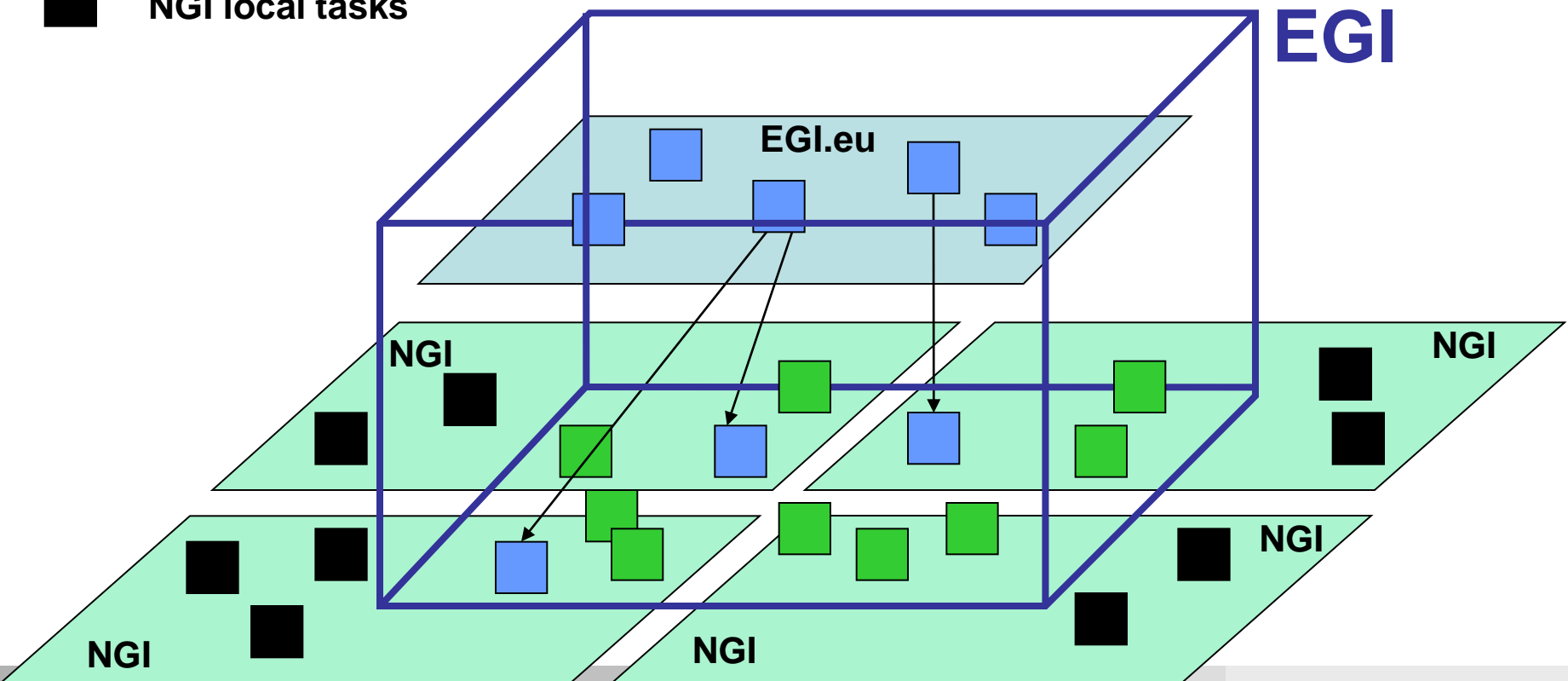
NGI local tasks

- **EGI**
  - EGI is "the collaboration" defined by the EGI-DS Blueprint which is the collection of NGI's and EIROs
  - EGI has a Council to take care of general policies and long term strategy

- **EGI.eu**
  - EGI.eu is the operational entity to provide general services and coordination useful to all EGI stakeholders
  - EGI.eu needs to have a legal entity to perform its duties: foundation
  - EGI.eu has a small Executive Board to take care of the legal and management issues of the foundation and has the Council as supervisor

Each NGI

- … should be a recognized national body with a **single point-of-contact**

- … should mobilize national funding and resources

- … should ensure the operation of a national e-Infrastructure

- … should support user communities (application independent, and open to new user communities and resource providers)

- … should contribute and adhere to international standards and policies

- **EGI Council first summit on 9th July 2009 in Amsterdam**
  - Participated by all the countries and EIROs that had signed the *Letter of Intent* and *Memorandum of Understanding*
    - 34 Countries + 2 EIROs
  - Starting point for discussions about the statutes of **EGI.eu**
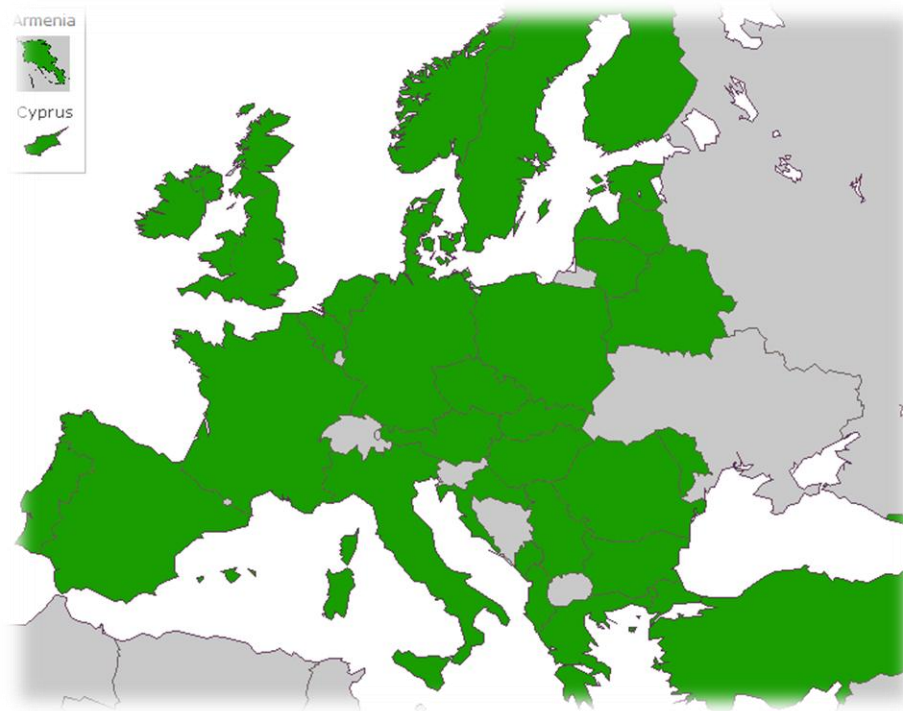
Foundation of EGI.eu

Notary

Michal Turala (PL)

Neil Geddes (UK)

Isabel Campos (ES)

Arjen van Rijn (NL)

Sverker Holmgren (SE)

Dieter Kranzmueller (DE)

Per Oster (FI) as EGI Council Chair

- EGI.eu was founded Monday 8 February 2010 at the notary's office in Amsterdam.
- In this meeting the EGI council approved the statutes for the new EGI.eu foundation
- The Council also elected its Executive Board of 7 members

IFIC · INSTITUT DE FÍSICA CORPUSCULAR

Curso de Postgrado del CSIC - 2010

GRID & e-CIENCIA

IFIC - Valencia
06-09 / 07 / 2010

CSIC · GRID

EGI Council

| Participants (eg. EU NGIs) | Associated Participants (e.g. EIROs, ESFRIs, non EU NGIs) |

Invited Observers (e.g. Experts, etc.)

EGI Executive Board

EGI.EU

Staff in Amsterdam

Members fees

NGI/EIRO Funds
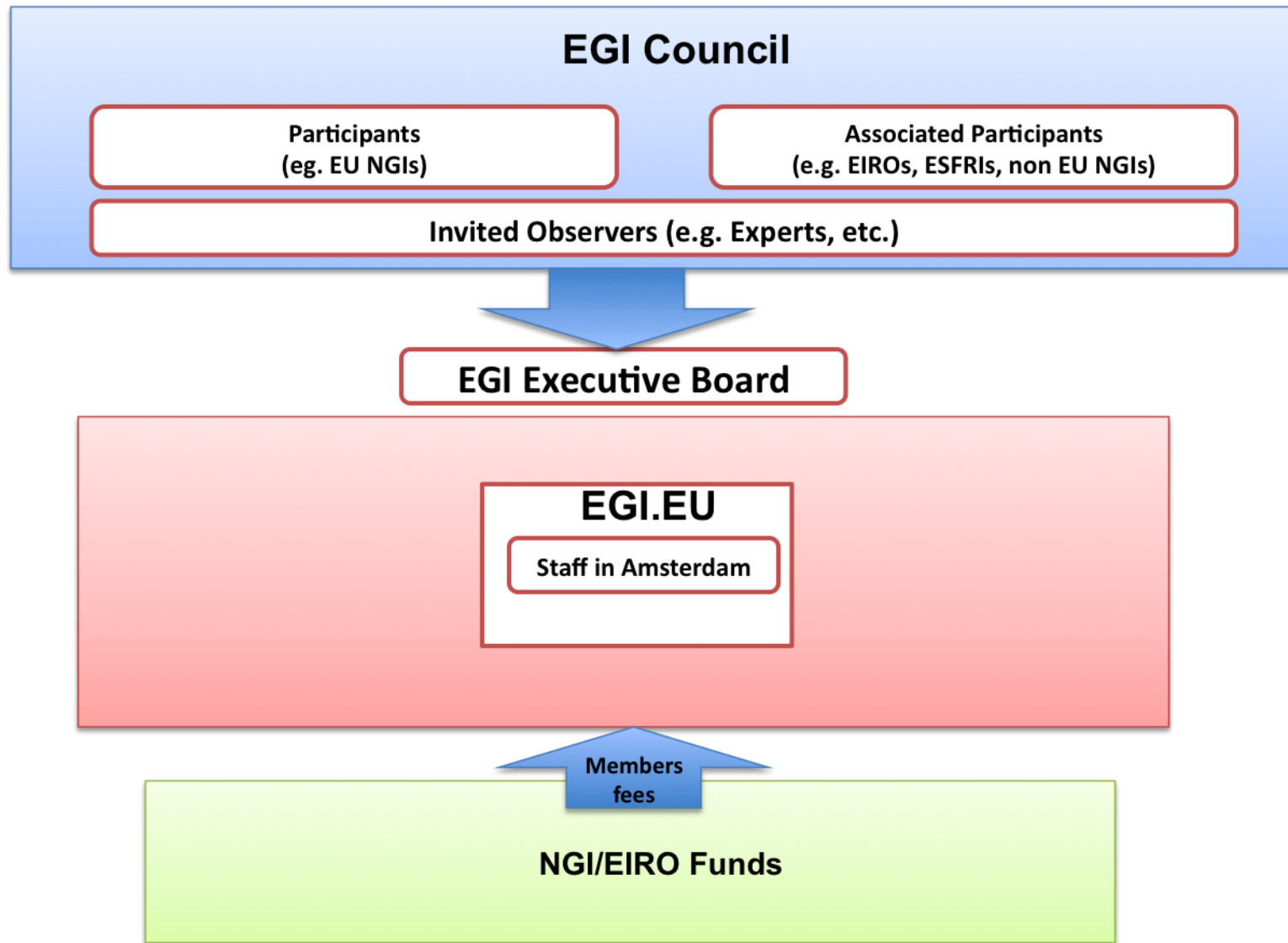
Technical and operational bodies in EGI
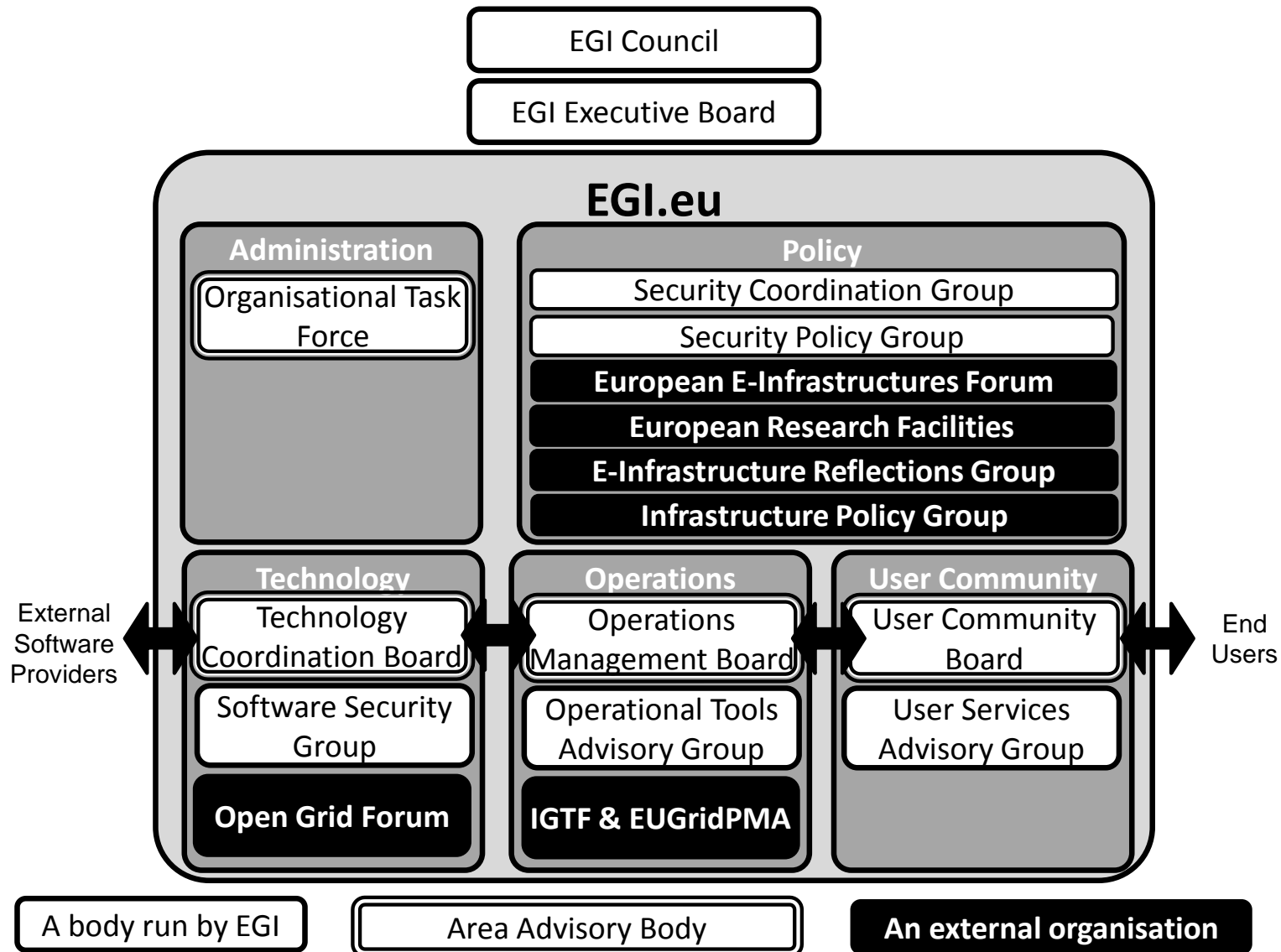
- Long-term vision:
  - **Management**, funded through membership fees
  - **Operations**, funded through usage charges
  - **Innovations**, funded through co-funded grants (EC and others)

- Transition phase:
  - Strong support from EC required to establish EGI model and to keep it at the leading edge of technology
  - Usage fees will not be introduced
  - **EGI.eu Management**, funded through membership fees (1M€/year)
  - **Operations + Innovations**, funded through co-funded EC grant
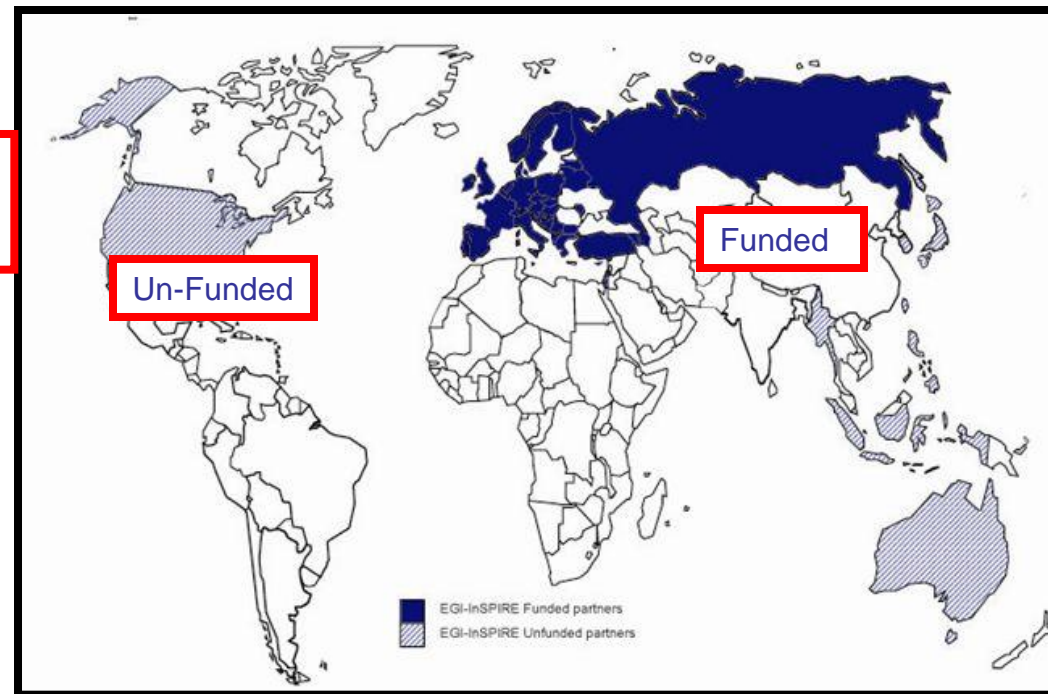
THE PROJECT EGI-INSPIRE

INTEGRATED SUSTAINABLE PAN-EUROPEAN
INFRASTRUCTURE FOR RESEARCHERS IN EUROPE

- It is a 4 year project with 25M€ EC contribution
  - Project Total cost 69M€
  - Staff ~ 170FTE

Project Partners (48)
EGI.eu, 37 NGIs, 2 EIROs, 8 AP

Un-Funded

Funded

EGI-InSPIRE Funded partners
EGI-InSPIRE Unfunded partners

EGI-InSPIRE Objectives

- EGI-InSPIRE is a 7th FP project
- Started 1st of May 2010 will go on 4 years
  - Transition to a sustainable federated European e-infrastructure built from national resources
  - Deliver production quality services to all its user communities and users
  - Provide a scalable user support model for international research communities within Europe and their worldwide collaborators
  - Interoperation and interoperability with other e-infrastructures
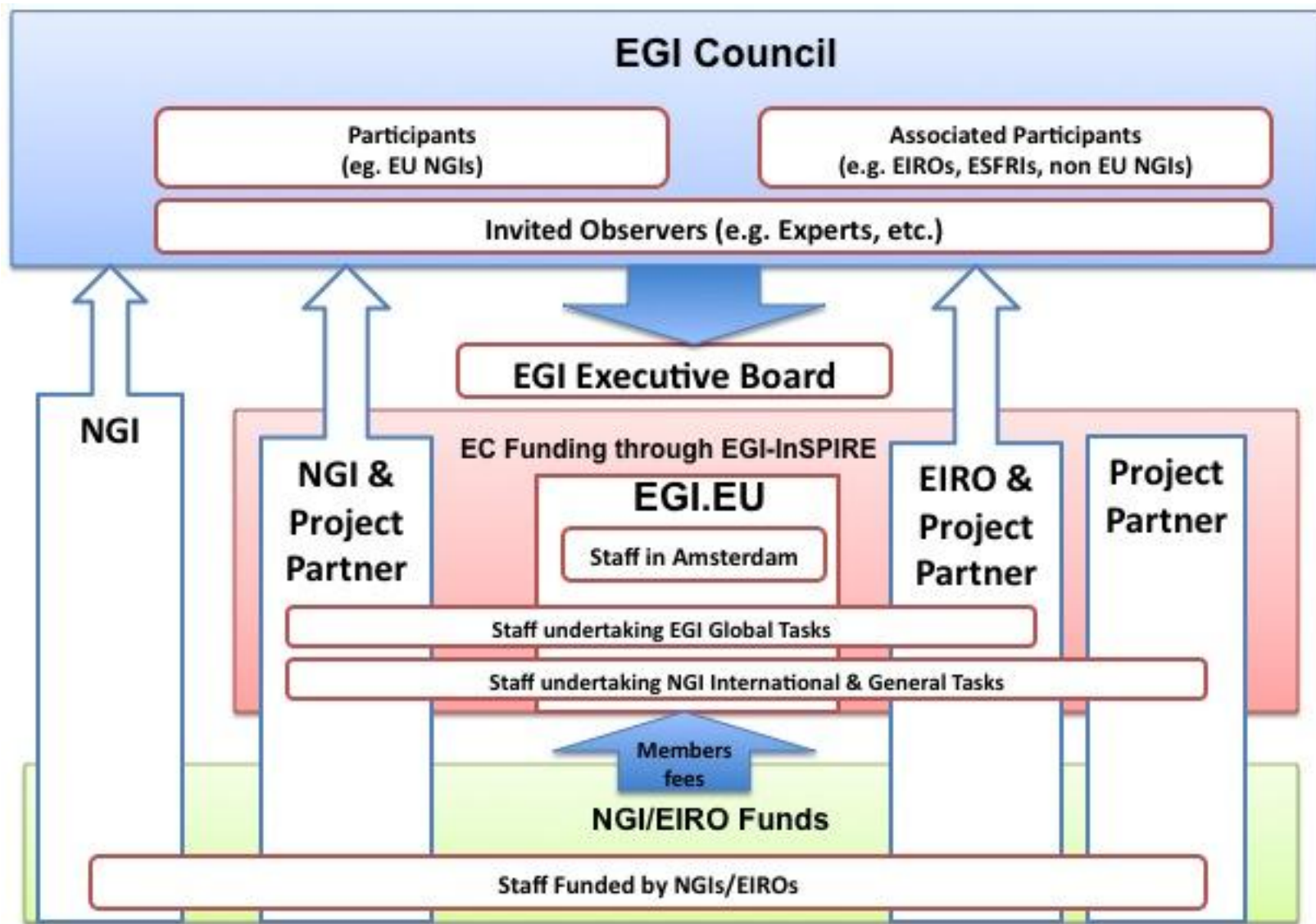
Who does what in EGI-InSPIRE?

- Internal National Infrastructure & Activities
  - Infrastructure that is not visible internationally
  - Activities with no external dependency
- NGI International Tasks
  - The 'service' interface to your national grid
  - Community defined that EGI will enforce
- EGI Global Tasks
  - Provided by EGI.eu through community partners
  - Services needed for the whole EGI community

- Design facts:
  - EGI federation of national grid activities
  - EGI is not developing middleware
  - EGI does not control the resources its users use
- As a consequence:
  - EGI will need to integrate different middleware
  - EGI needs to identify interoperable solutions
- EGI must work with multiple software providers and deployments to achieve its goals
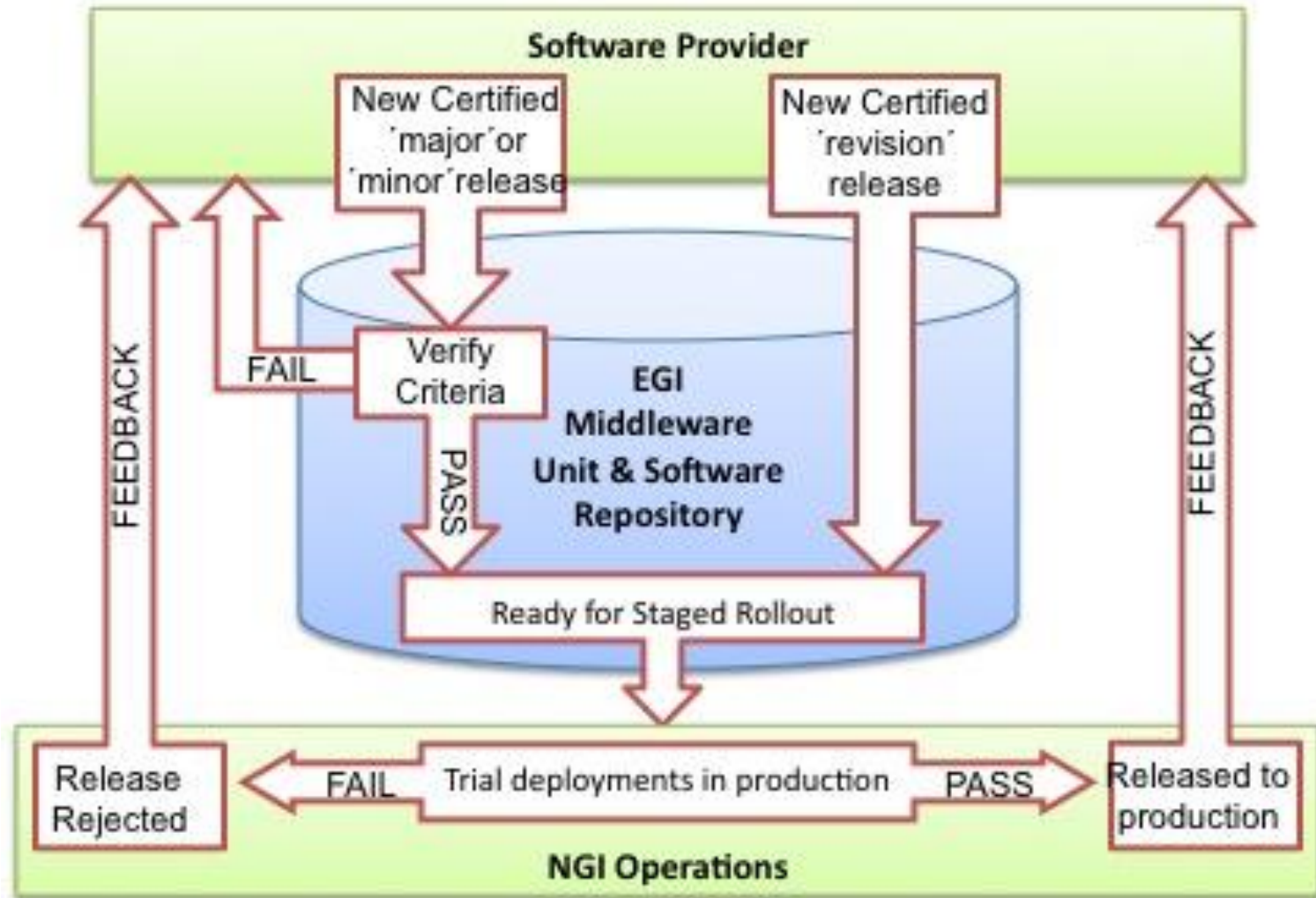
EGI Operations: Objectives

- **Continued operation and expansion** of todays' production infrastructure

- "Set up an organisation that will enable the sustainable provision of grid services to the European scientific community"

    - **EGI global operations services**
    - **NGI/EIRO operations services**

- "The EGI should ensure a seamless and progressive transition in service provision from the current arrangements to a new scheme that is more sustainable organisationally and financially"

    - **Extension of accounting to support different business models**

- "The EGI should promote close collaboration and interoperability with similar infrastructures in other parts of the world."

    - **Extension of operational procedures and policies**
    - **Enhancement of monitoring and accounting tools**

User Support & Services in EGI

- Support User Communities
  - Researchers in International Collaborations
  - Scale up from the single VO to a community
- Provide a federated Helpdesk linking:
  - Discipline specific support (e.g. Bio Apps)
  - National infrastructure support (e.g. NGS)
  - Generic services (e.g. Training)
- Provide core services to support users
  - Manage VOs, Application DB, Training DB

IFIC — INSTITUT DE FÍSICA CORPUSCULAR · Universitat de València

Curso de Postgrado del CSIC - 2010

GRID & e-CIENCIA

IFIC - Valencia
06-09 / 07 / 2010

CSIC · GRID · CSIC

- **EGI has began to work**
  - A legal entity, EGI.eu has been created to coordinate the European Grid
- **EGI-InSPIRE will undertake the migration** of the European Grid e-infrastructure and its services into a new sustainable governance model
  - The NGIs are already supporting over 90% of the total costs implied by EGI-InSPIRE.
- **EGI will evaluate multiple sources of funding** including new business models where services are to be offered for a fee or alternative direct contributions

The Spanish and Portuguese NGIs have joined forces to take an active role in the global tasks of EGI

IBERGRID will operate inside EGI as a single entity
GLOBAL EGI TASKs UNDERTAKEN BY IBERGRID

- **EGI Operations**
  - Middleware rollout will be coordinated from Ibergrid
  - Accounting portal and operational developments related to accounting
- **EGI Technology**
  - Middleware certification and validation will be taken care by Ibergrid
    - **Definition of requirements for the UMD**
    - **Certification and validation process definition**
- **EGI Support to User Technical Service**
  - User Technical Services: tools available for user communities

- Common Portuguese/Spanish Iberian infrastructure
  - Grid computing, HPC
  - Network, Applications
  - Volunteer computing

- Provides an umbrella for an Iberian regional grid
  - Integrating Portuguese and Spanish NGI resources
  - Fully interoperable with EGI

- IBERGRID has taken the role of EGEE SWE ROC in EGI
  - Towards a sustainable model without loosing synergies and advantages

IBERGRID Transition Plan

Portugal Tasks

- ▶ Common VO management and coordination
- ▶ Operations portal
- ▶ Catalogues and services for the VOs
- ▶ Certification Authority for Portugal (LIPCA)

Spain Tasks

- ▶ Helpdesk (Request Tracker)
- ▶ Monitoring and accounting
- ▶ Infrastructure database (GOCDB/HGSM)
- ▶ Certification Authority (PKIrisGrid)
- ▶ Middleware security

Common Tasks

- ▶ Core services and redundancy
- ▶ Regional information system; Support groups
- ▶ Training infrastructure; Operations coordination
- ▶ Infrastructure security; Seed resources for new users

EGEE

IBERGRID TRANSITION PLAN TO THE NATIONAL GRID INFRASTRUCTURE BASED MODEL

Document identifier:	Ibergrid_Transition_Plan_to_EGI_v14.doc
Date:	08/02/10
Country:	Spain (ES) and Portugal (PT)
NGI:	Ibergrid: NGI-ES + NGI-PT
Document status:	1st Public Release
Document link:	

Abstract: This document describes the transition plan to migrate Ibergrid infrastructure into EGI. Ibergrid is composed by NGI-ES and NGI-PT.

International Tasks

O-N-1	Operations of the NGI topology and configuration repository
O-N-2	Operation of the NGI accounting repository
O-N-3	Operation of monitoring and performance repositories
O-N-4	Operations of the NGI Operations Portal
O-N-5	NGI infrastructure oversight, Operators on duty, etc.
O-N-6	Operations of the NGI ticketing system
O-N-7	Regional Helpdesk
O-N-8	Operation of production core services for international VOs
O-N-9	Operations Coordination at the NGI level

Operational Tools Status

Service	Responsible	Status
Regional Nagios	CESGA	Ready
HGSM	CESGA	Ready
Regional Accounting Portal	CESGA	Ready
Operations Portal	LIP	Under deployment
RT Ticketing System	IFCA/IFIC/RedIris	To be installed
SWE Helpdesk	IFIC	Ready
Infrastructure security	LIP/RedIris	Teams in place
Middleware security	UAB	Teams in place

IFIC
INSTITUT DE FÍSICA CORPUSCULAR

Curso de Postgrado del CSIC - 2010

GRID & e-CIENCIA

IFIC - Valencia
06-09 / 07 / 2010

CSIC

Central Services Status

Service	Instances	Status
WMS	CESGA/LIP/IFCA	Up and running
CrossBrokers	CESGA/LIP/IFCA	Up and running
TopBDII	CESGA/LIP/IFCA	Up and running
Main VOMS	LIP/IFCA	Up and running
Backup VOMS	CESGA	Up and running
LFC	LIP/IFCA	Up and running
Backup LFC	CESGA	Under deployment
My Proxy	LIP	Up and running
RGMA Registry	CESGA	Up and running

IFIC
INSTITUT DE FÍSICA
CORPUSCULAR

Curso de Postgrado
del CSIC - 2010

GRID & e-CIENCIA

IFIC - Valencia
06-09 / 07 / 2010

CSIC GRID
CSIC

Core Resources
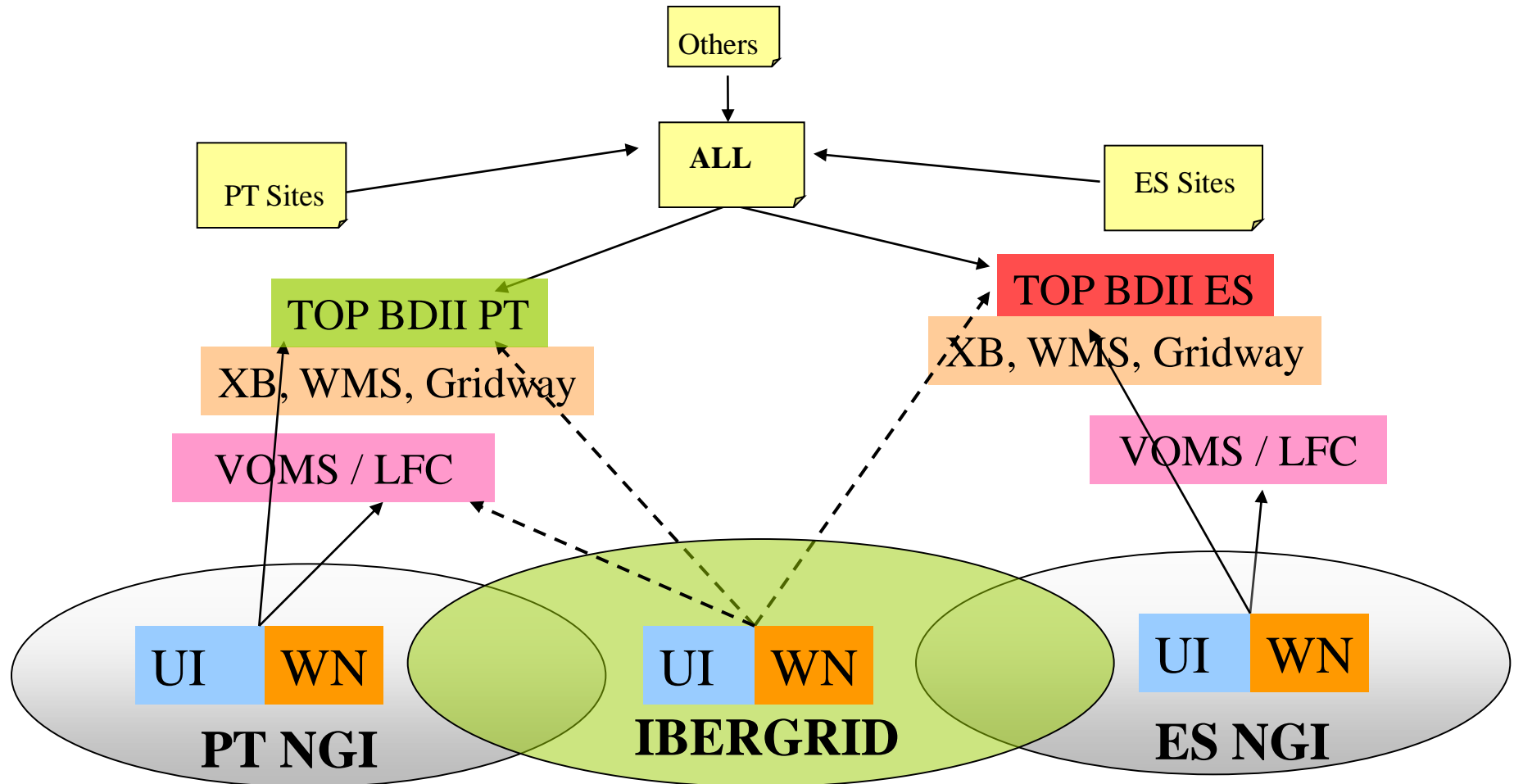
- Geographically spread
- Redundancy to failovers

34 sites

- 8 Portuguese sites
- 1 site from Marroco
- 25 Spanish sites

  - 16 sites in Certified status in GOCDB

Production Core Services
- NGI ES / IBERGRID CrossBroker
- NGI ES / IBERGRID WMS
- NGI ES / IBERGRID Top-BDII
- NGI PT / NGI ES / IBERGRID Backup VOMS
- NGI PT / NGI ES / IBERGRID Backup LFC
- NGI ES / NGI PT / IBERGRID R-GMA Registry

CESGA

CSIC-IFCA

LIP

Production Core Services
- NGI PT / IBERGRID CrossBroker
- NGI PT / IBERGRID WMS
- NGI PT / IBERGRID Top-BDII
- NGI PT / IBERGRID VOMS
- NGI PT / IBERGRID LFC
- NGI PT / IBERGRID MyProxy

Production Core Services
- NGI ES / IBERGRID CrossBroker
- NGI ES / IBERGRID WMS
- NGI ES / IBERGRID Top-BDII
- NGI ES VOMS
- NGI ES LFC

Global Tasks

O-E-2	Accounting Repositories	CESGA
O-E-9	Middleware Rollout	LIP/IFCA/CESGA
U-E-5	User Technical Services	UPV/LIP
M-E-1	Documentation of the overall process	IFCA/LIP/CESGA
M-E-3	Definition and Assessment of Quality Criteria	IFCA/LIP/CESGA

ES-NGI Computational Resources

	Cores de ejecución Año 2010	Almacenamiento Año 2010 (TB)	Prevision 2011 Cores de ejecución	Previsión 2011 Almacenamiento online (TB)
IFCA	1800	354	4000	1000
CESGA	477	144	1000	200
CIEMAT (Moncloa)	1116 (Moncloa)	370 (Moncloa)	posibles ampliaciones	450 mínimo
CIEMAT CETA	120	1	400	50
UPV	60	2	400	20
IFIC	1800	150	posibles ampliaciones	700
PIC	1318	1968	1800	2438
BIFI	280	1	3000	10

IFIC

Curso de Postgrado del CSIC - 2010

GRID & e-CIENCIA

IFIC - Valencia
06-09 / 07 / 2010

CSIC GRID

- Ibergrid has transitioned to the new EGI ecosystem with a full production infrastructure and minimal impact

- An initial set of <u>operational tools</u> has been deployed

- Additional tools may be required but Ibergrid specific needs will be evaluated after the transition

- New computing models

  - Cloud computing as a new layer : grid to provide services base on cloud/virtual computing

  - HPC and hybrid computational models

  - Workflows

- Still <u>a lot of uncertainty</u> surrounding EGI and EMI

  - EMI started May 1

  - EGI-Inspire starts June 1