Sustainable NGI model, Ibergrid case

e-IRG Workshop

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The word

http://en.wikipedia.org/wiki/Sustainability

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Sustainability

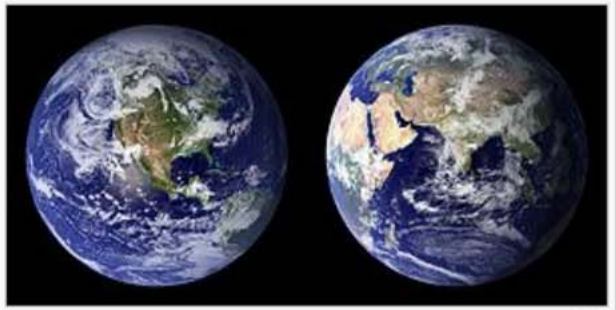
From Wikipedia, the free encyclopedia

For other uses of the term "Sustain", see Sustain (disambiguation).

This article **may be too long to read and navigate comfortably.** Please consider splitting content into sub-articles and using this article for a summary of the key points of the subject. *(April 2010)*

Sustainability is the capacity to endure. In ecology the word describes how biological systems remain diverse and productive over time. For humans it is the potential for long-term maintenance of wellbeing, which in turn depends on the wellbeing of the natural world and the responsible use of natural resources.

Sustainability has become a wide-ranging term that can be applied to almost every facet of life on Earth, from local to a global scale and over various time periods. Long-lived and healthy wetlands and forests are examples of sustainable biological systems. Invisible chemical cycles redistribute water, oxygen, nitrogen and carbon through the world's living and non-living systems, and have sustained life for millions of years. As the earth's human population has increased, natural ecosystems have declined and changes in the balance of natural cycles has had a negative impact on both humans and other living systems.[1]



Achieving sustainability will enable the Earth to continue supporting human life as we know it. "Blue Marble" NASA composite images: 2001 (left), 2002 (right).

There is abundant scientific evidence that humanity is living unsustainably, and returning human use of natural resources to within sustainable limits will require a major collective effort.[1] Ways of living more sustainably can take many forms from reorganising living conditions (e.g., ecovillages, eco-municipalities and sustainable cities), reappraising economic sectors (permaculture, green building, sustainable agriculture), or work practices (sustainable architecture), using science to develop new technologies (green technologies, renewable energy), to adjustments in individual lifestyles that conserve natural resources.

The EGI framework

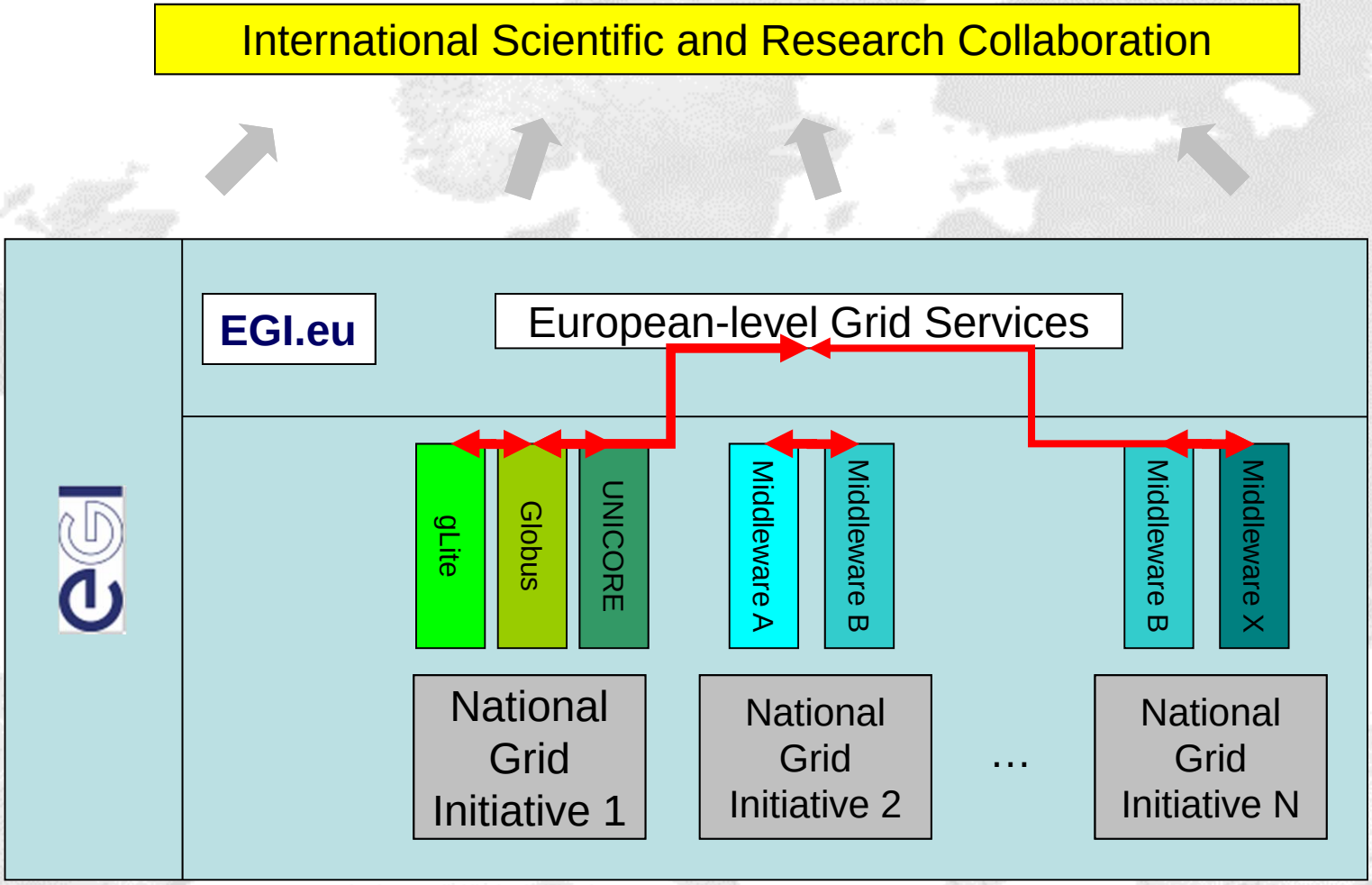
- **Goal**: Establishment of a sustainable e-Infrastructure at the level of
  - National infrastructures sustained by national funds:
    National Grid Initiatives
  - International research communities legally bind in **EIROs** (eg. CERN or EMBL) or **ESFRI** projects
- **Assumption**: each of these entities is able to support their own operations and their own users
- The **level of coordination** necessary to offer those resources to external collaborators will be provided by the **European Grid Initiative-EGI**

NGI, Ibergrid

- NGI
  - National Grid Initiatives:
    - Spain: ES-NGI
      - within the Spanish e-Science Network
    - Portugal: INGRID

- IBERGRID
  - An alliance of **ES-NGI and INGRID**
  - That has turned out to be a successful step towards a stronger implication of the Iberian peninsula in the development of EGI...

Grid Stakeholders



The role of Ibergrid in EGI

IBERGRID will operate inside EGI as a single entity

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

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

The role of Ibergrid in EGI

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IBERGRID Transition Plan

Activities in the aim of the NGIs International Tasks

- **Portugal Tasks**
  - Common VO management and coordination
  - Operation portal
  - Catalogues and services for the VOs
  - Certification authority for Portugal
- **Spanish Tasks**
  - Helpdesk (RT)
  - Monitoring and accounting
  - Infrastructure DB
  - Certification authority for Spain
  - Middleware security
- **Common Tasks**
  - Core services and redundancy
  - Regional information system
  - Support groups; Training infrastructure
  - Operation coordination
  - Infrastructure security: seed resources

EGEE

IBERGRID TRANSITION PLAN TO THE NATIONAL GRID INFRASTRUCTURE BASED MODEL

Document identifier:	Ibergrid_Transition_Plan_to_NGI_v14.doc
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NGI:	Ibergrid: NGI-ES + NGI-PT
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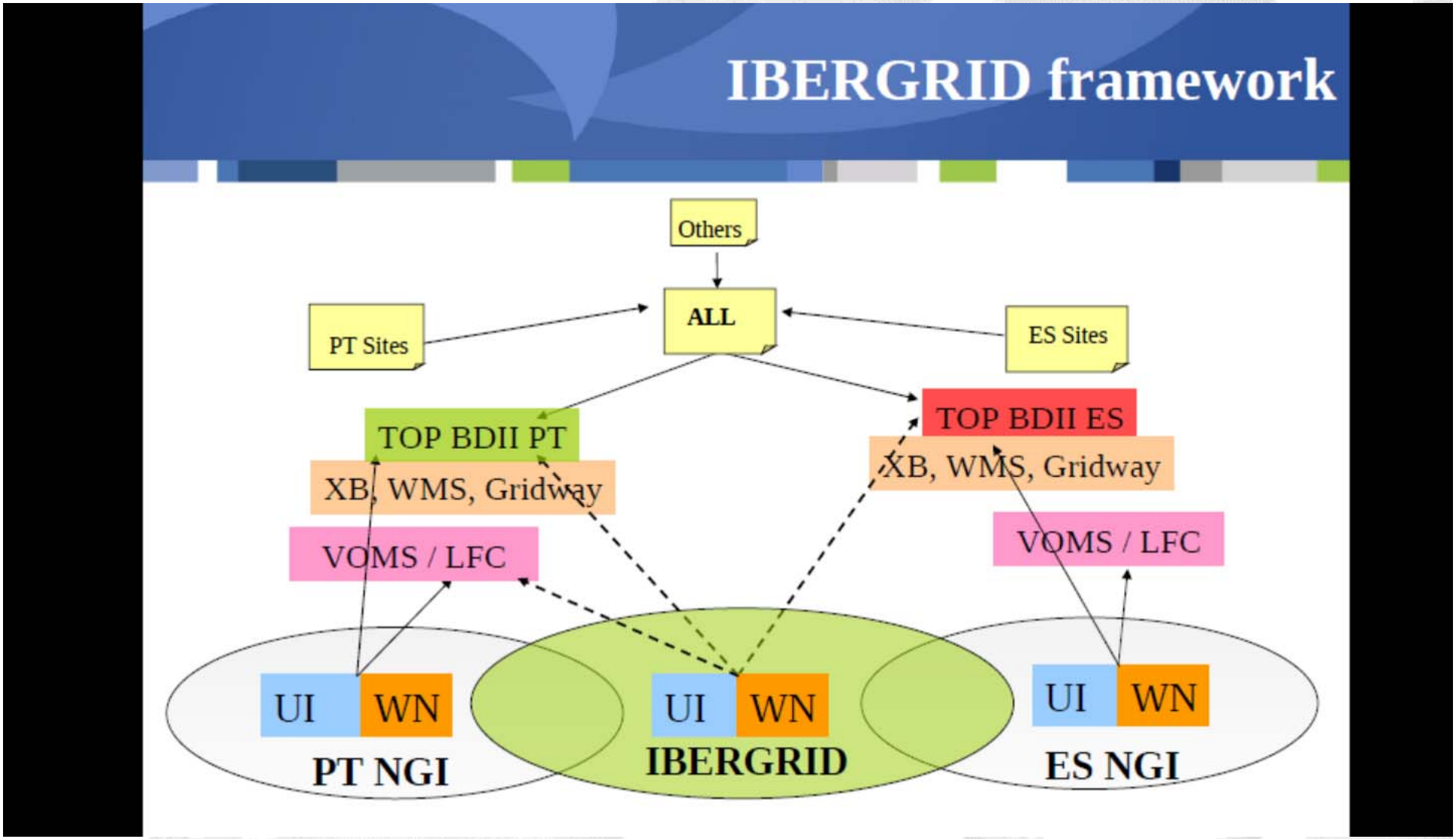
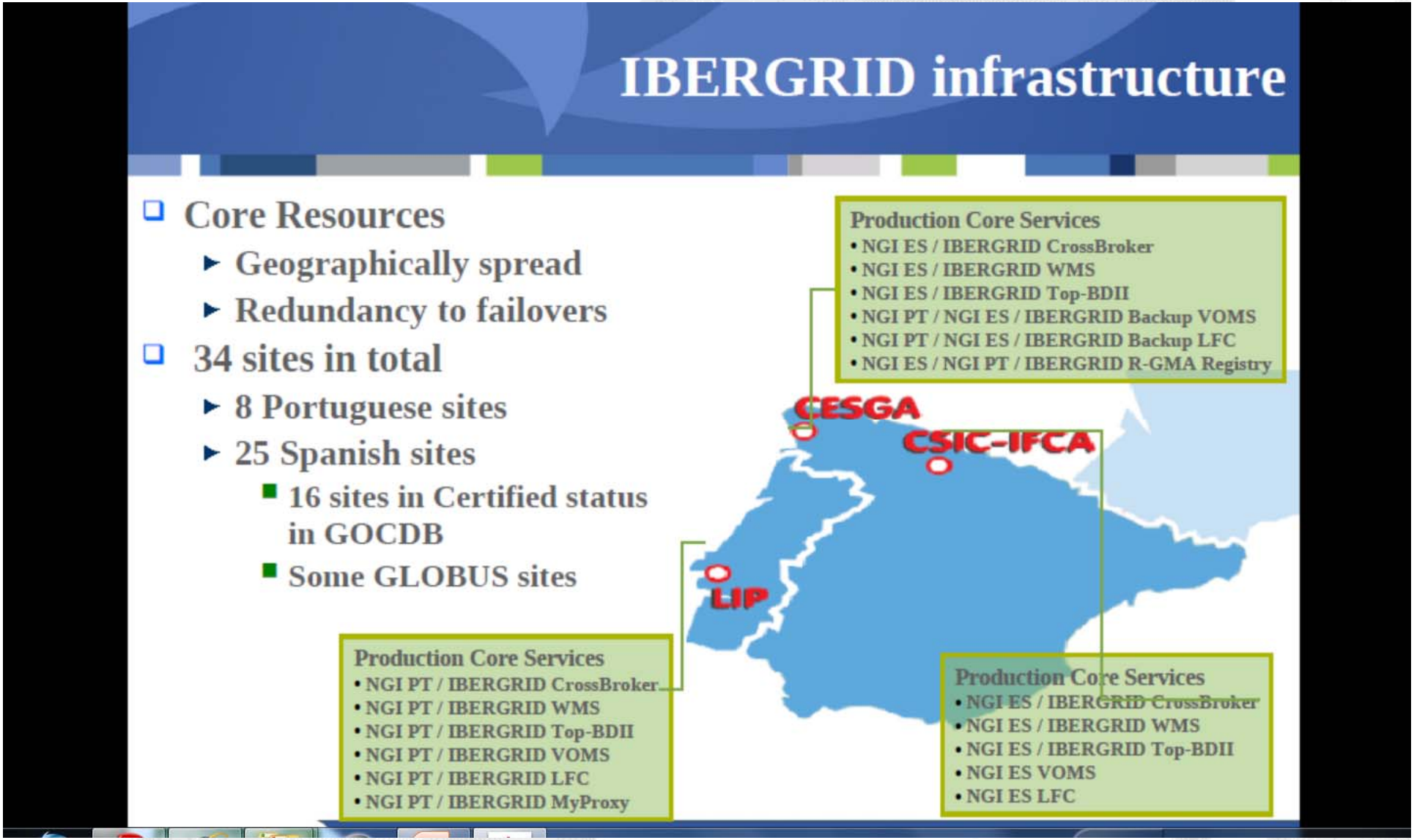
Document link:	

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

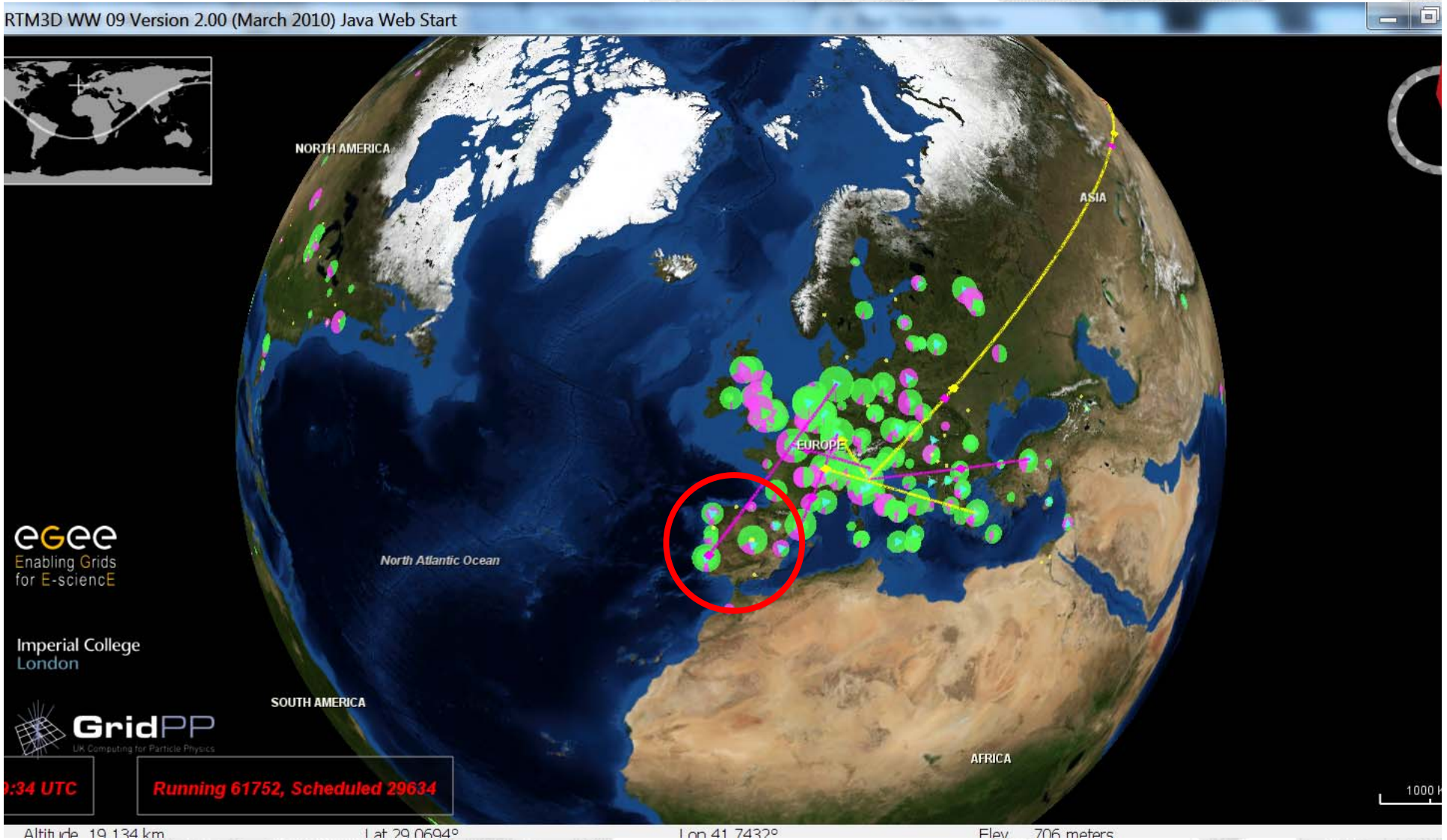
The role of Ibergrid in EGI



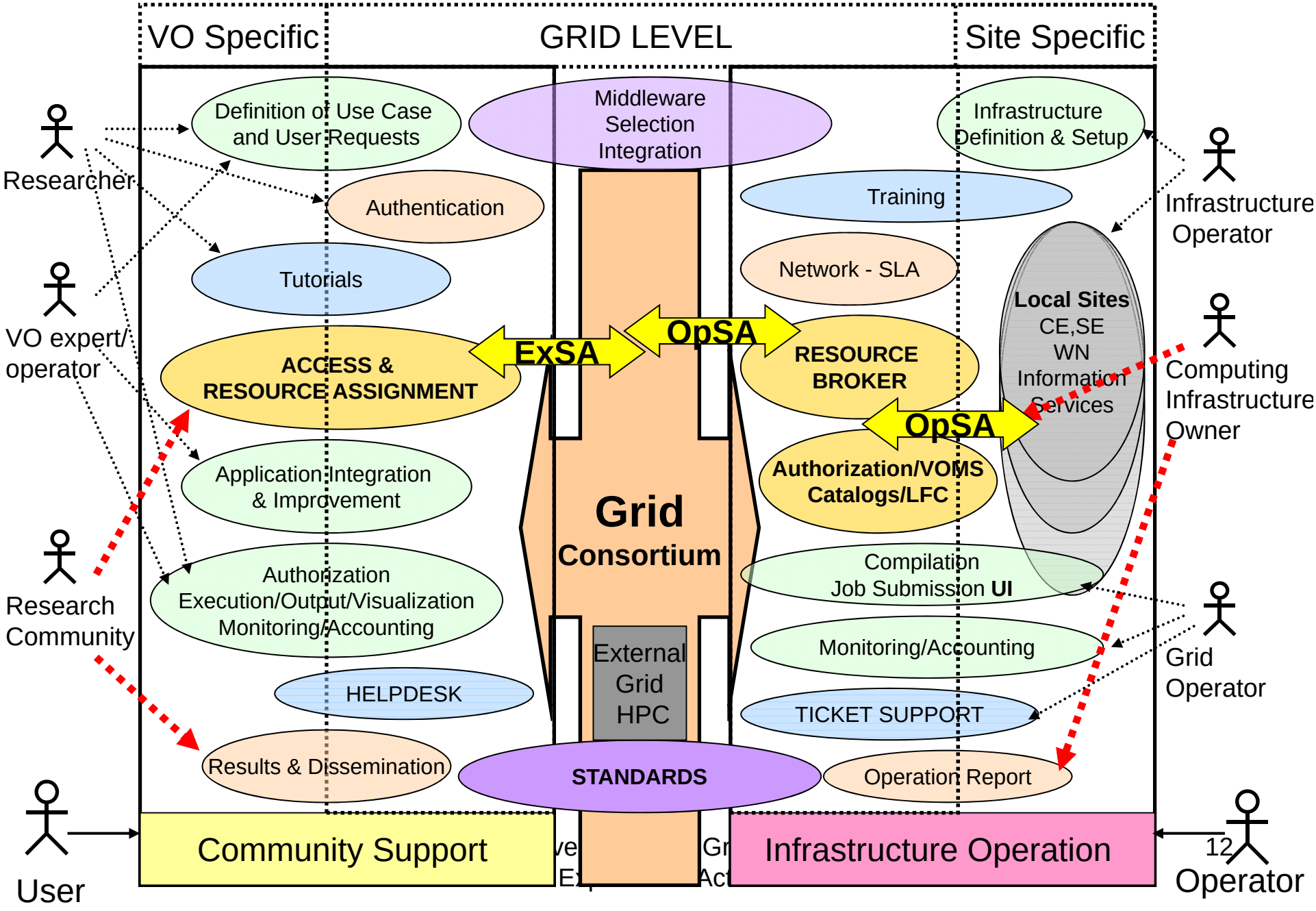
The role of Ibergrid in EGI



The role of Ibergrid in EGI



SUSTAINIBILITY: THE ECOSYSTEM



Looking back...

EU 2007 DE

e-IRG e-Infrastructure Reflection Group

A SUSTAINABLE GRID INFRASTRUCTURE FOR EUROPE

Executive Summary of the e-IRG Open Workshop on e-Infrastructures
Heidelberg, Germany, April 19 – 20, 2007

A-Towards a European e-infrastructure
B-Sustainability for e-Infrastructures
C-Bridging the gap between academia and industry

Recommendation A1: *To enable and support collaborative scientific discoveries across the wider research community in Europe, a sustainable Grid Infrastructure should be established with a long term perspective for the availability of Grid services and support**, driven by the needs and requirements of the European research community**, and supported by the National Grid Initiatives*

e-IRG recommendations and decisions

(Czech Presidency, 2009)

Sustainability of the computing-related e-Infrastructure

The e-IRG notes the importance of the steps undertaken by the EGI and PRACE initiatives to promote sustainability of the computing-related e-Infrastructure, such as the development of policies, business models and funding schemes for the new required structures. **The e-IRG recommends that adequate levels of funding should be granted by the EC and Member States for the development of the new structures both on the national and European levels.**

The e-IRG recommends that major e-Infrastructures initiatives such **as EGI and PRACE cooperate** closely in order to define complementary and interoperable environments for the benefit of European researchers. This environment should ensure that access to resources in Europe is granted through an open and transparent process, based on international standards and interoperable middleware.

The e-IRG recommends **the funding of activities that help national user communities to cooperate with corresponding user communities in other countries**, in order to foster the European research activities in using the e-infrastructure.

EGI Financial Model

- 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

Sustainability

Four Rules for a sustainable Grid in production

(after W. Gentzsch Top 10 rules…)

- **Demonstrate specific benefits**
  - **To user communities**
  - **To infrastructure providers**
  - **To decision makers!**
- **Transparency and Simplicity (*sencillez*):**
  - **Middleware**
  - **User Access**
  - **Governance**
- **Analyze the business model with all actors**
- **Plan how to improve:**
  - **Address researchers needs:**
    - **ESFRI initiatives**
    - **Remote Instrumentation**
  - **Consolidate infrastructure through virtualization**
  - **Compare to Cloud approach**