

Ibergrid conference

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disponer de QuickTime™ y de
un descompresor TIFF (sin comprimir).

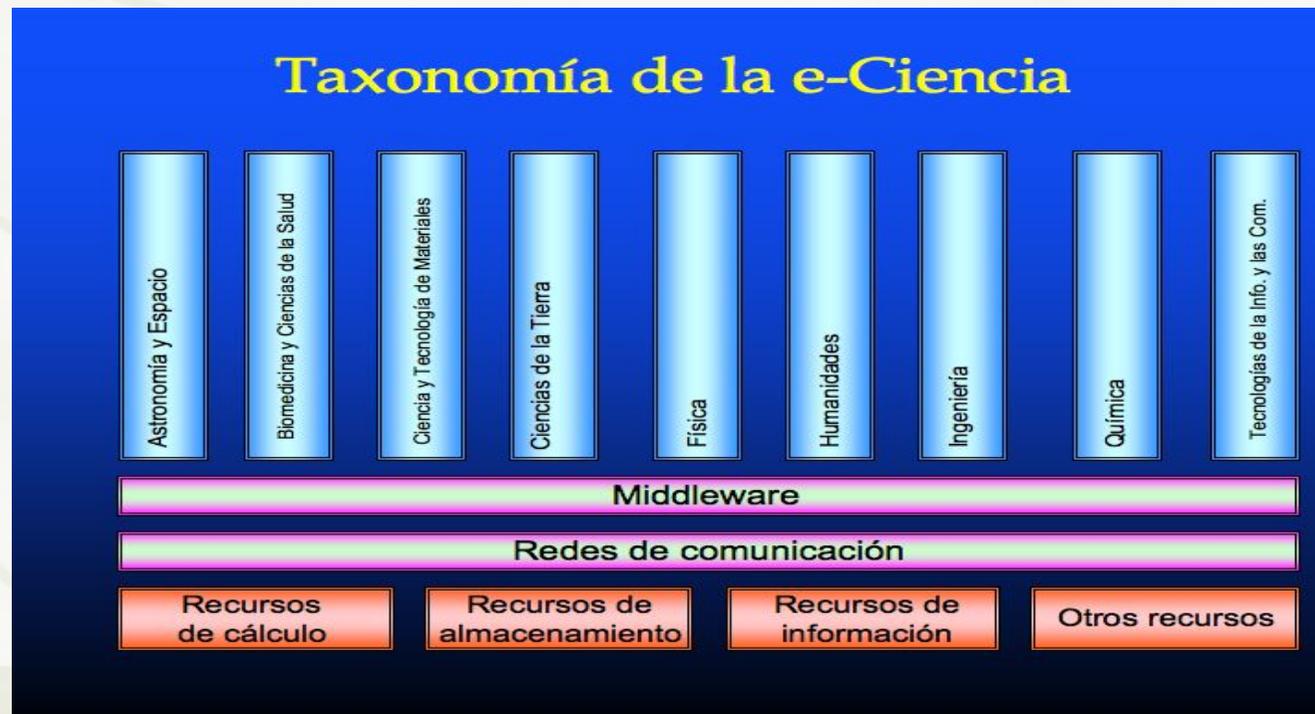
Spanish Grid and Cyber- Infrastructure Policies

Víctor Castelo, Ministerio de Educación y Ciencia,
Dirección General de Política Tecnológica

Background of e-Science

e-Science White Book (FECYT, 2004):

Definition: "Scientific activities developed using distributed resources in the network"



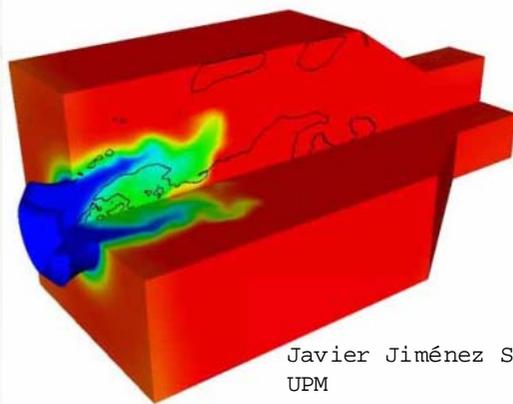
The evolution

- ★ Relevant participation of Spanish groups in European projects (started in 2001)
- ★ IRIS-Grid initiative (2002)
- ★ Important HPC sites
- ★ Consolidated high bandwidth network
RedIRIS integrated to the european GEANT2 network
- ★ New opportunities
 - ★ Changing the way to research
 - ★ Sharing resources to enable new applications
 - ★ New Science thanks to new technology
 - ★ Support for a multidisciplinary approach



The Scientist Community: its needs

- ★ Using the e-Infrastructures to enhance their research work
- ★ Communication with their colleagues, the Industry, students, the Society
- ★ Global connectivity



Javier Jiménez Sendín,
UPM
DNS in turbulent
channels





Users: Information and feedback

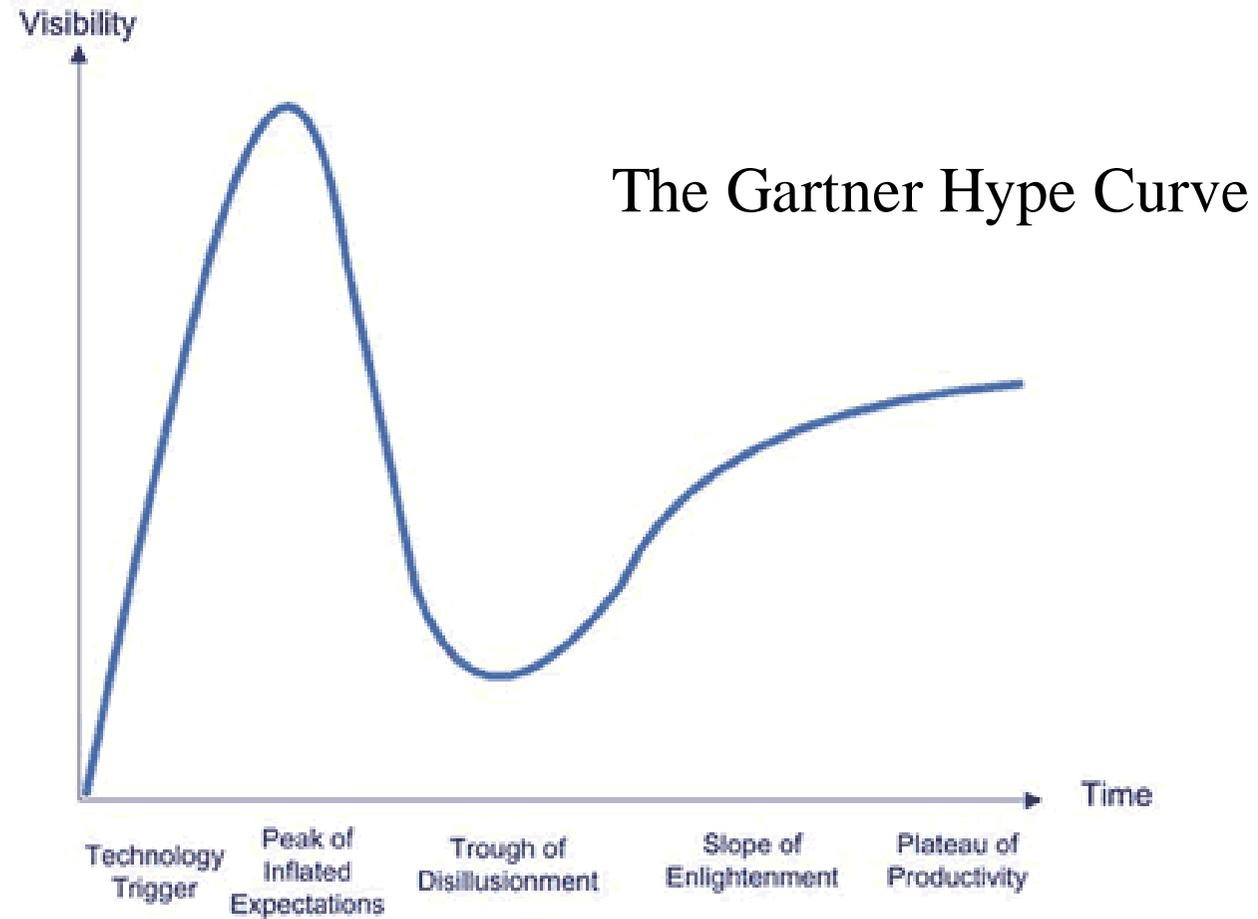
- ★ To know their needs
- ★ Actual uses
 - ◆ Emblematic cases
- ★ Problems

- ★ To inform
 - ◆ Possibilities
 - ◆ New services
 - ◆ Test points
- ★ Learning
- ★ Coordination
 - ◆ e-Infrastructures
 - ◆ Networks
 - ◆ Other actors

Users

Institutions, other actors

Where do we stand?



Taking into account:

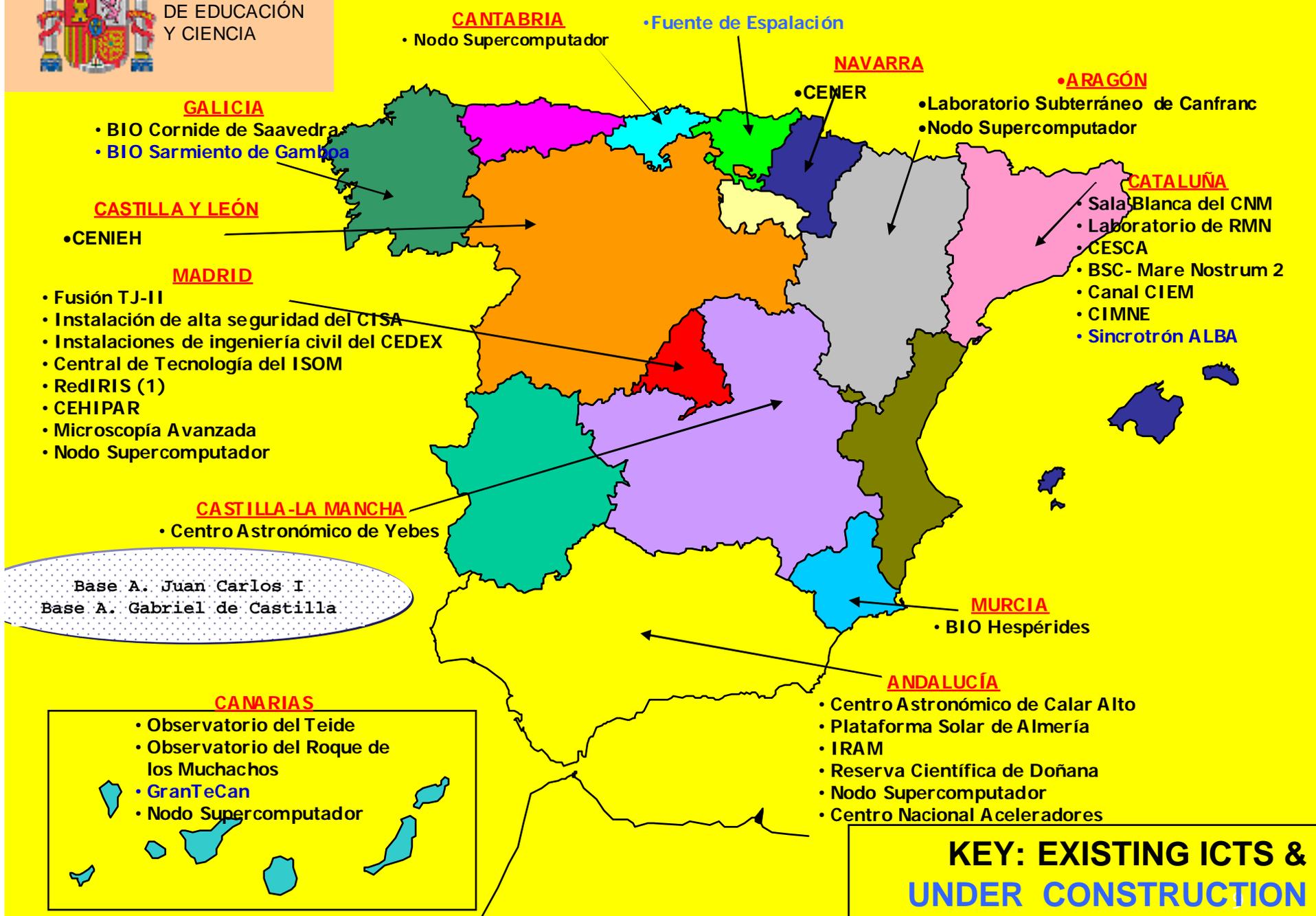
- ★ The available resources (e-Infrastructures):
 - ★ The Network: RedIRIS and Autonomous Regions Research Networks
 - ★ HPC systems (BSC, Red Española de Supercomputación, CESGA, CESCA, CIEMAT, INM, etc.)
 - ★ Grid groups
 - ★ The available ICTS (Infraestructuras Científico Técnicas Singulares) and those under construction
- ★ MEC (DGPT) promoting thematic networks (Astronomy and Astrophysics, **e-Science**, Sciences and Technology of Sea, Biomedicine and Life Sciences, Transport and Building)
- ★ The needs and requirements from researchers



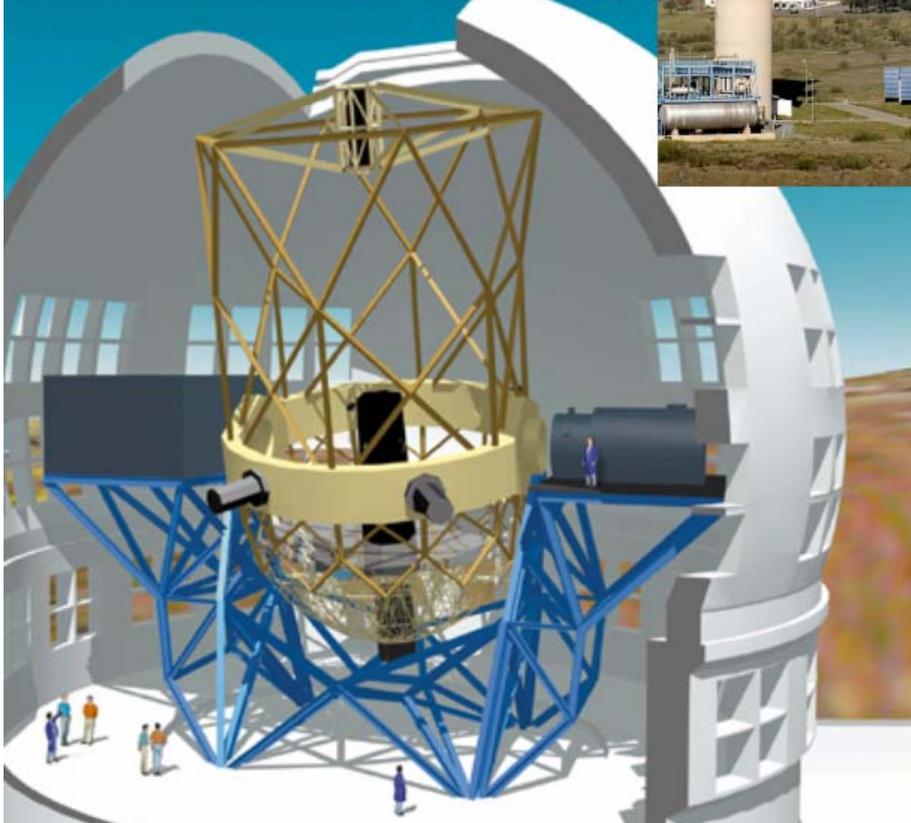
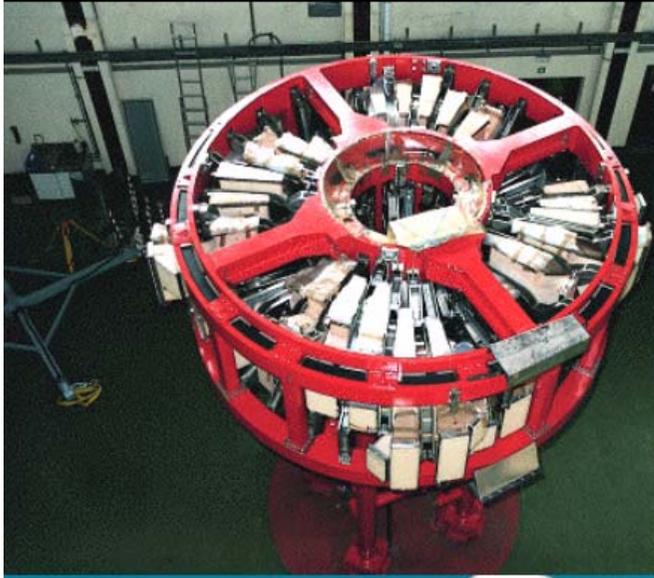


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Current situation



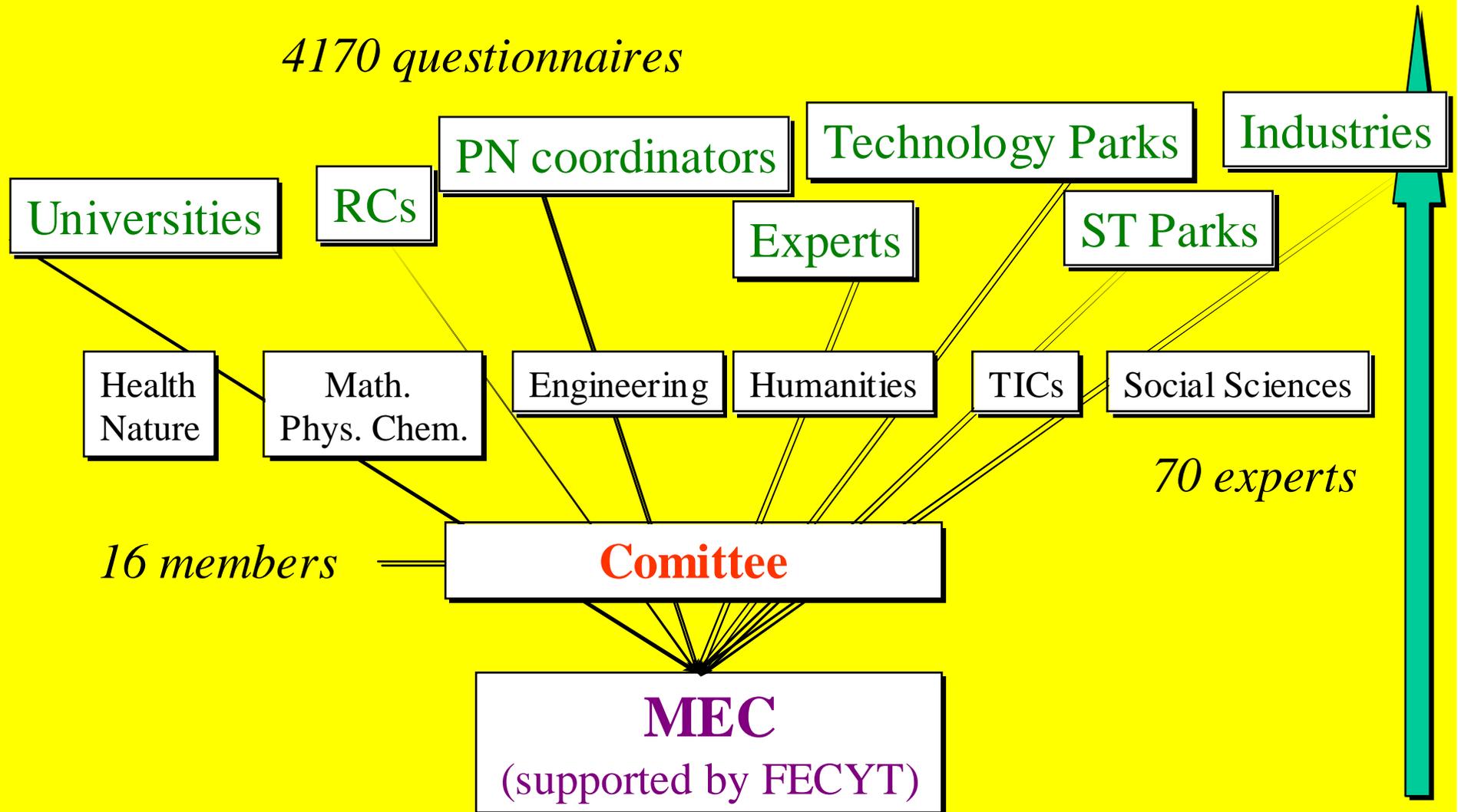
KEY: EXISTING ICTS & UNDER CONSTRUCTION





Spanish Roadmap

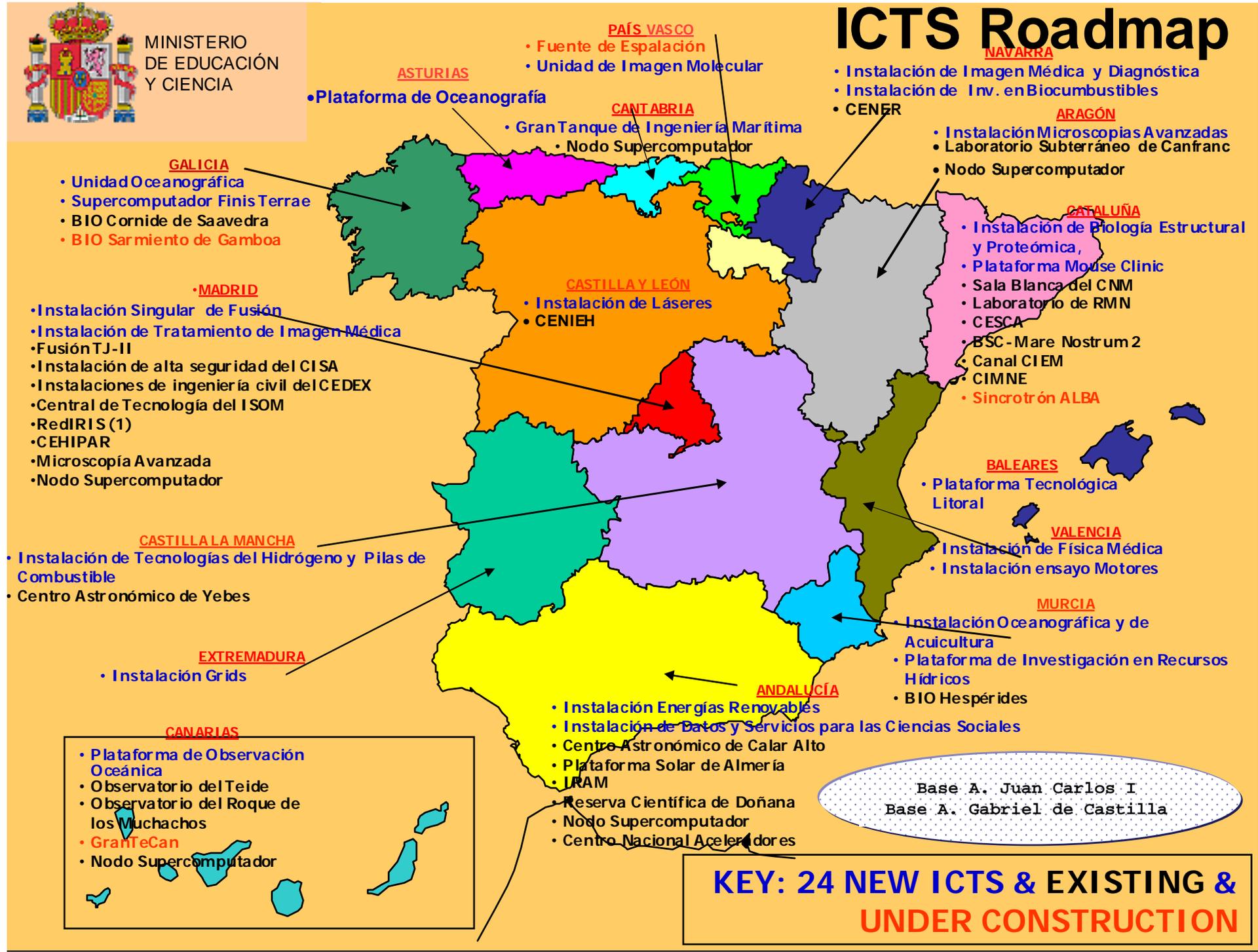
Elaboration process (1. bottom-up)





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ICTS Roadmap



- GALICIA**
- Unidad Oceanográfica
 - Supercomputador Finis Terrae
 - BIO Cornide de Saavedra
 - BIO Sarmiento de Gamboa

- MADRID**
- Instalación Singular de Fusión
 - Instalación de Tratamiento de Imagen Médica
 - Fusión TJ-II
 - Instalación de alta seguridad del CISA
 - Instalaciones de ingeniería civil de ICEDEX
 - Central de Tecnología del ISOM
 - RedIRIS (1)
 - CEHIPAR
 - Microscopía Avanzada
 - Nodo Supercomputador

- CASTILLA LA MANCHA**
- Instalación de Tecnologías del Hidrógeno y Pilas de Combustible
 - Centro Astronómico de Yeves

- EXTREMADURA**
- Instalación Grids

- CANARIAS**
- Plataforma de Observación Oceánica
 - Observatorio del Teide
 - Observatorio del Roque de los Muchachos
 - GranTeCan
 - Nodo Supercomputador

- ASTURIAS**
- Plataforma de Oceanografía

- PAÍS VASCO**
- Fuente de Espalación
 - Unidad de Imagen Molecular

- CANTABRIA**
- Gran Tanque de Ingeniería Marítima
 - Nodo Supercomputador

- CASTILLA Y LEÓN**
- Instalación de Láseres
 - CENIEH

- ANDALUCÍA**
- Instalación Energías Renovables
 - Instalación de Datos y Servicios para las Ciencias Sociales
 - Centro Astronómico de Calar Alto
 - Plataforma Solar de Almería
 - IRAM
 - Reserva Científica de Doñana
 - Nodo Supercomputador
 - Centro Nacional Aceleradores

- NAVARRA**
- Instalación de Imagen Médica y Diagnóstica
 - Instalación de Inv. en Biocombustibles
 - CENER

- ARAGÓN**
- Instalación Microscopías Avanzadas
 - Laboratorio Subterráneo de Canfranc
 - Nodo Supercomputador

- CATALUÑA**
- Instalación de Biología Estructural y Proteómica,
 - Plataforma Mouse Clinic
 - Sala Blanca del CNM
 - Laboratorio de RMN
 - CESCA
 - BSC - Mare Nostrum 2
 - Canal CIEM
 - CIMNE
 - Sinrotrón ALBA

- BALEARES**
- Plataforma Tecnológica Litoral

- VALENCIA**
- Instalación de Física Médica
 - Instalación ensayo Motores

- MURCIA**
- Instalación Oceanográfica y de Acuicultura
 - Plataforma de Investigación en Recursos Hídricos
 - BIO Hespérides

Base A. Juan Carlos I
Base A. Gabriel de Castilla

KEY: 24 NEW ICTS & EXISTING & UNDER CONSTRUCTION

The e-Science Network

- ★ First bottom-up, now catalyzing the actually developed activities with top-down actuations from the MEC trying to co-ordinate the resources: networking, Grid, HPC, sensors, visualization, etc, in order to satisfy the needs of the users

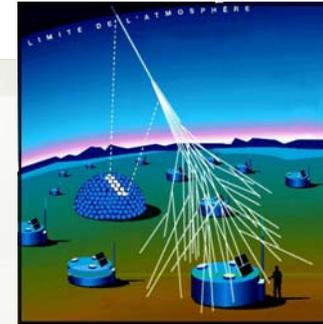


PIC



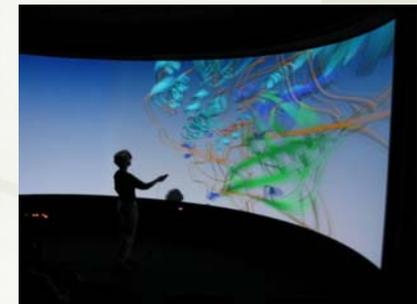
<http://www.cesga.es/ga/Recetga/Infraestructuras/AccessGrid/accessgrid.html>

Objectives



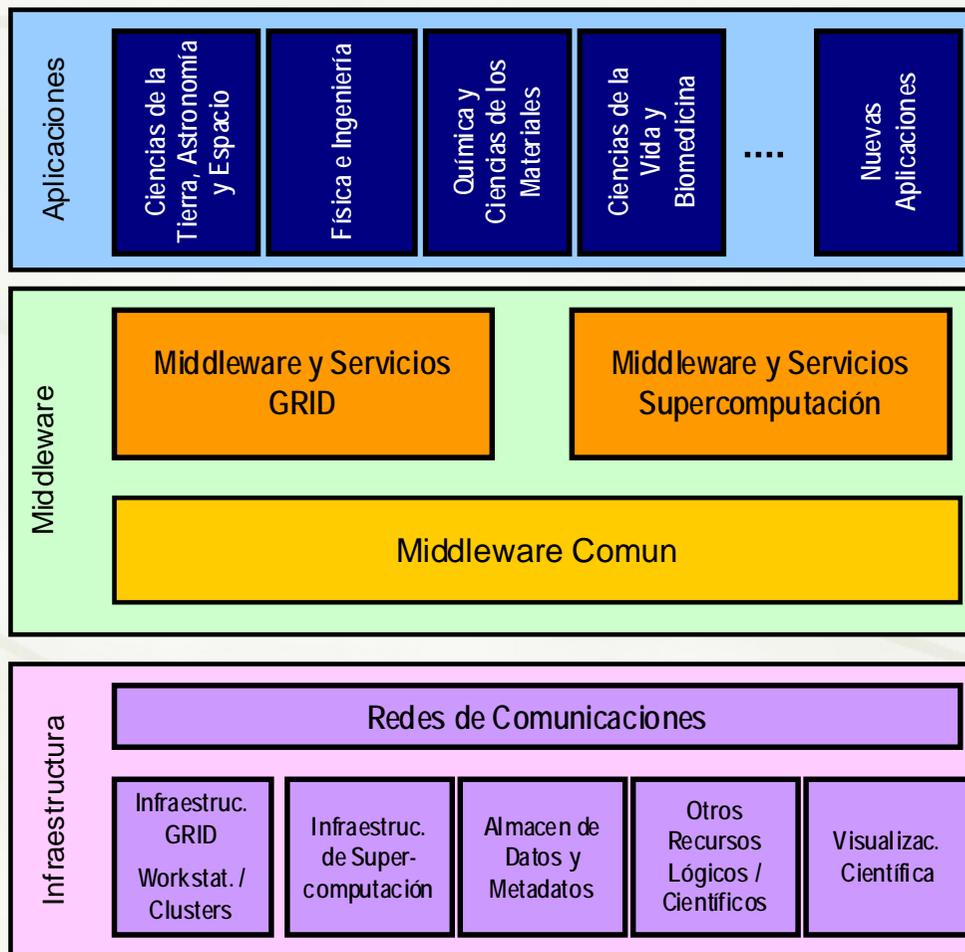
O.Pierre Auger

- ◆ To promote and co-ordinate the e-Science in Spain
- ◆ To be the Spanish contact for the e-Science activities
- ◆ Co-ordinate the infrastructures from the point of view of:
 - ◆ Investments, management and interoperability and the services to the end users
- ◆ Co-operation with other projects
- ◆ Dissemination and training
- ◆ To foster the collaboration in e-Science with other countries, mainly with Portugal and Latin-American countries.

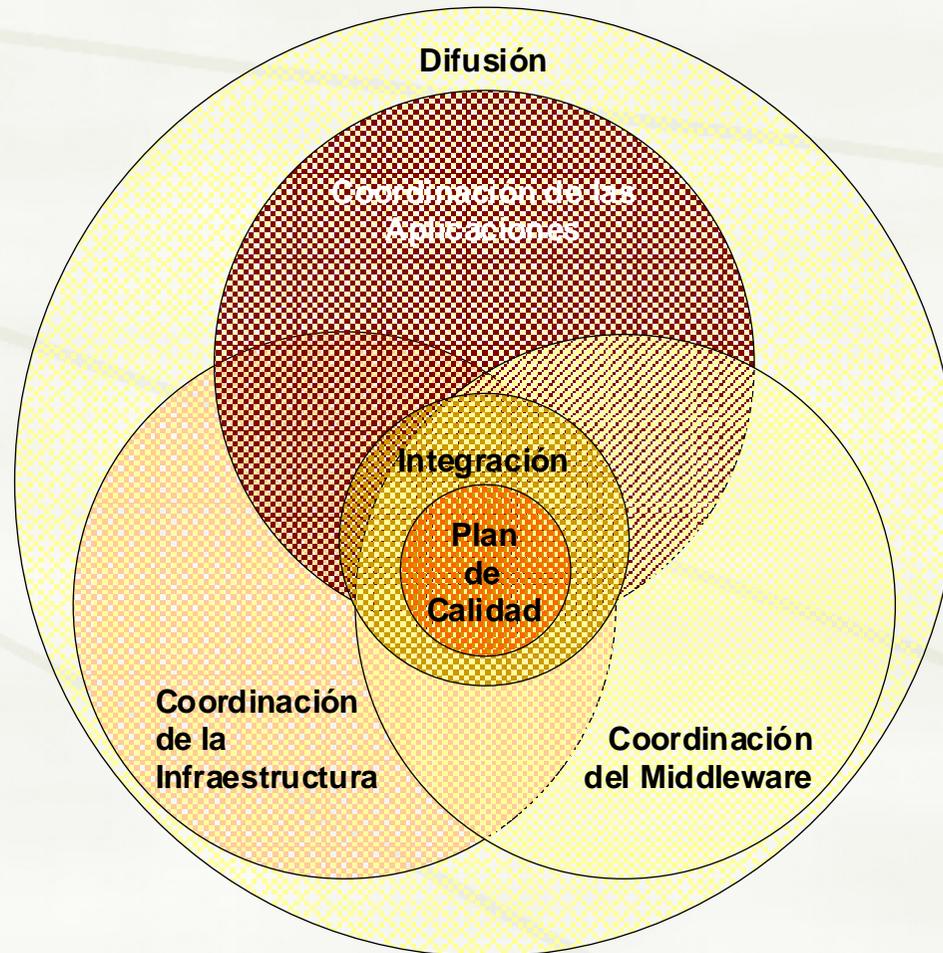


UNAM

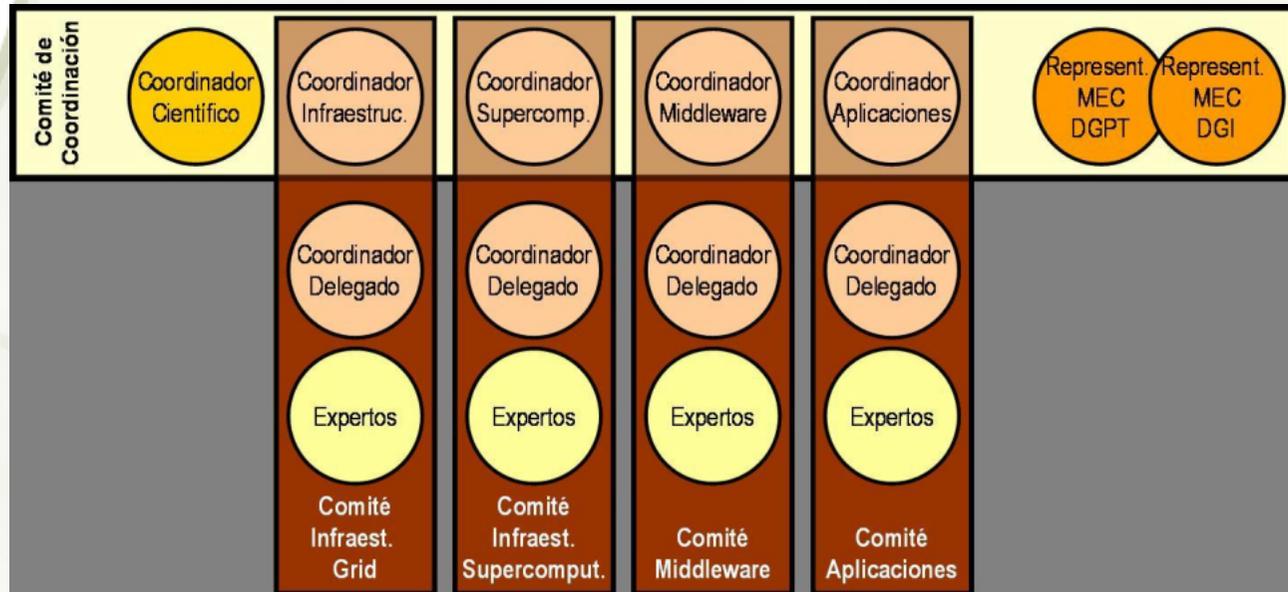
Infrastructure



Interactions between areas



Co-ordination structure



- ✦ Open structure
- ✦ Global co-ordination, interaction using with local agents
- ✦ Co-ordination with the Ministry of Education and Science. And feedback to the Policy.
- ✦ Vicente Hernández, scientific co-ordinator

Connected to Europe

- ★ ESFRI roadmap
- ★ e-IRG (Infrastructure Reflection Group)
- ★ To participate in the creation of EGI (European Grid Initiative)
- ★ Tier0 of the European HPC (initiative PACE)

And of course:

The co-operation with Portugal: **Ibergrid**

Next steps

- ★ Response of a core group to the call of the MEC in order to build the e-Science network
- ★ Start of the activities organized around the network
- ★ Development of the NGI (National Grid Initiative)
- ★ Evolution of RedIRIS to use a global dark fibre redundant network, and a direct connection to the Portuguese network