


EUROPEAN COMMISSION
European Research Area

FP7 Integrating Instruments for Research Infrastructures

ENERO 3rd scientific workshop

March 2010 – Brigitte WEISS, European Commission



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Outline

- Research Infrastructures in the European Research Area (ERA)
- EU Framework Programme Actions for RIs and ESFRI
 - Existing research infrastructures
 - New research infrastructures
- Next steps

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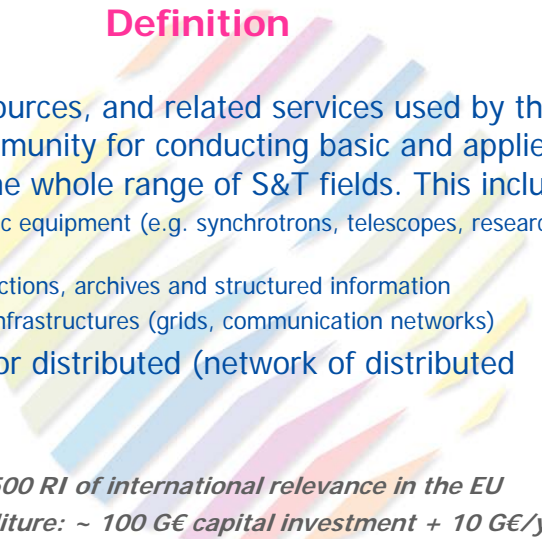


Research Infrastructures

Definition

- Facilities, resources, and related services used by the scientific community for conducting basic and applied research in the whole range of S&T fields. This includes:
 - major scientific equipment (e.g. synchrotrons, telescopes, research vessels)
 - scientific collections, archives and structured information
 - ICT-based e-infrastructures (grids, communication networks)
- Single-sited, or distributed (network of distributed centres)

~ 400-500 RI of international relevance in the EU
Present expenditure: ~ 100 G€ capital investment + 10 G€/year



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Research Infrastructures

Key Challenges

- To overcome fragmentation in Europe in the field of Research Infrastructures
- To improve the efficiency of services and access to European Research Infrastructures
- To cope with their increasing cost and complexity



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 **Research Infrastructures**

Importance for Europe

- Essential for Europe's researchers to stay at the forefront of research development in all S&T fields
- Attract the best researchers from across the world
- Allow the training of thousands of researchers and technicians in the most advanced technologies
- Key component of Europe's competitiveness in both basic and applied research
- One of the five ERA initiatives launched 2008 – an effective European coordination of national policies!

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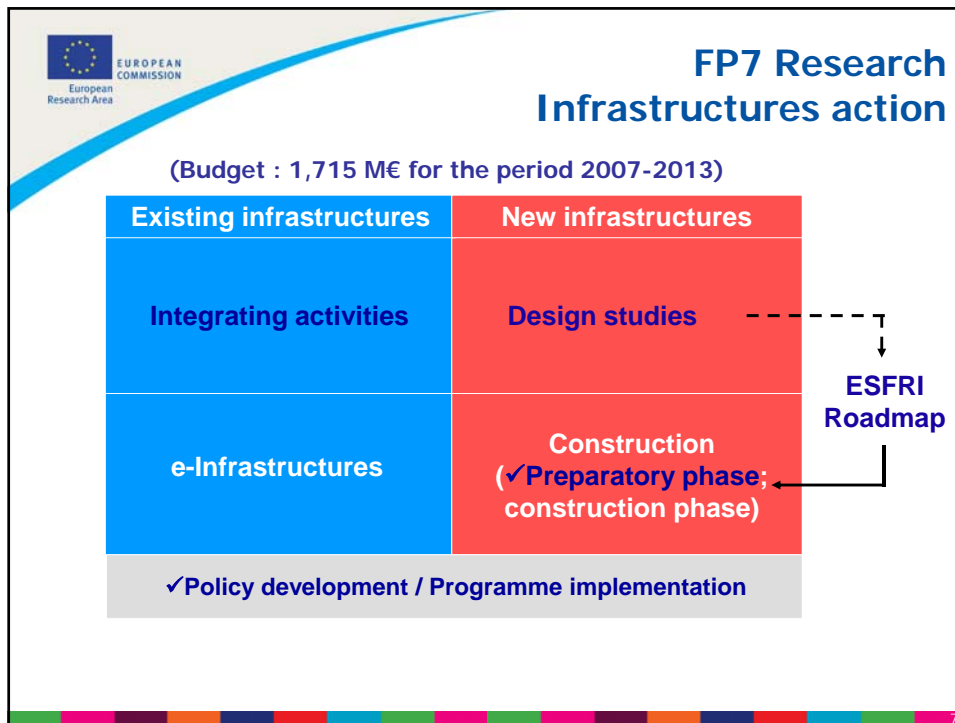
 **Towards an 'eco-system' of Research Infrastructures within ERA**


- a) Large single-sited facilities
- b) Distributed European Facilities
- c) Network of national facilities

- ✓ Based on a consistent roadmap from the European stakeholders
- ✓ Links with universities & schools
- ✓ Network of industrial suppliers / users



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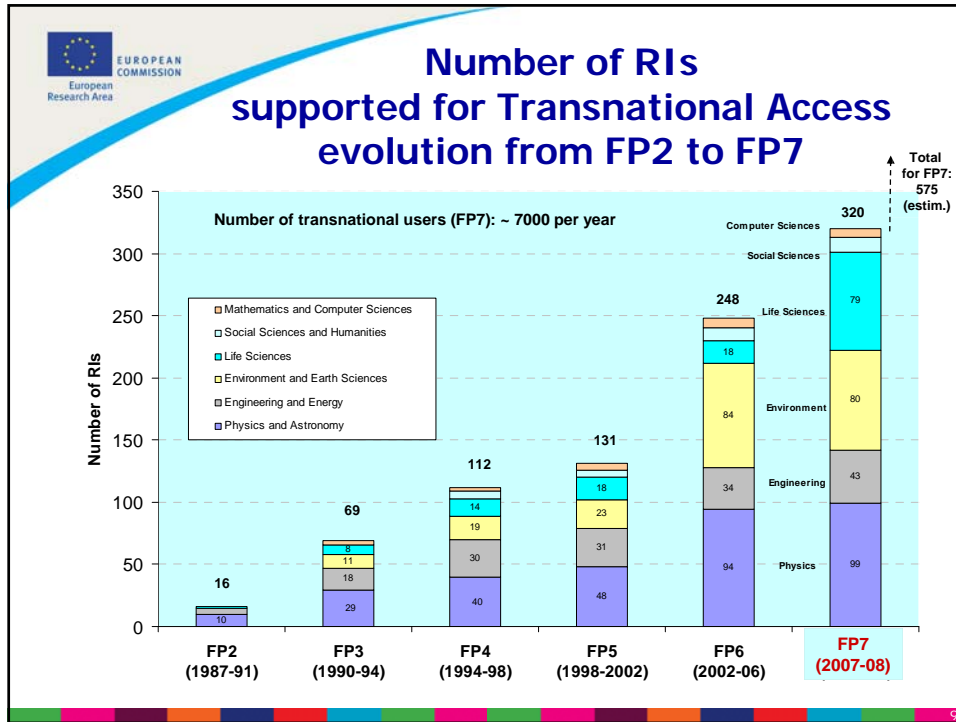


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Existing Research Infrastructures: Integrating activities

- **Objectives:** bring together and integrate, on a European scale, key research infrastructures (RIs) in a given class, in order to promote their coordinated use and development.
- **Activities** related to a coordinated development and use of RIs:
 - (1) Networking activities (to foster a joint development of RIs, strategies, ...)
 - (2) Transnational access and/or service activities (opening of the RI for researchers from all over Europe)
 - (3) Joint research activities (to improve service of RI)
- **Projects:** according to funding rules for FP6 and FP7
funding scheme: CP-CSA = combination of 'collaborative project' & and coordination and support actions')

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Successful project SFERA

Solar Facilities for the European Research Area (Concentrated Solar Power): 12 leading RIs from ES, DE, CH, IL, FR, PT

EC contribution: 7.4 M€

TA (~3,0 M€):


- Single entry point to the use of over 20 unique or leading installations of 5 RI (until up to over 15000 'suns'): CSP, optics, heat transfer, production of energy carriers, materials research,...

NA (~1,0 M€):

- Standards and exchange of good practices, develop and promote common methods
- Training on use of RI
- Web portal, meetings, conferences, expert WGs

JRA (~3,4 M€):

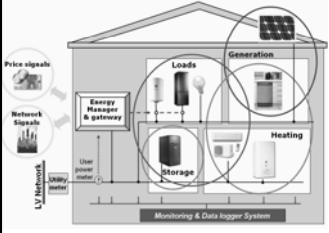
- Improve services of CSP installations: methods, instruments, modelling
- Ultra high concentration
- Improve durability prediction for CSP components
- Storage technologies and materials

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Successful project DERRI

EC contribution: 5.2 M€

Distributed Energy Resources Research Infrastructure: 15 leading RI from IT, AT, FR, EL, DE, NL, ES, DK, PL, BG, FI, UK



TA (~1,5 M€):

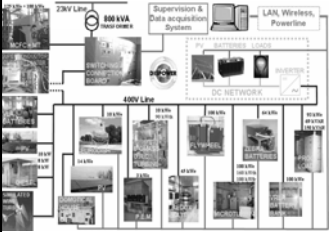
- TA to installations of 12 RI (a large number of the major facilities in DER in Europe); single entry point for users

NA (~1,5 M€):

- Common standards and procedures
- Electronic linkages between partners, accessibility of data
- Web portal, meetings, information system, broaden European and world-wide linkages

JRA (~2,2 M€):

- Performance criteria and characterisation of DER components: storage systems, large scale inverters
- High performance platform for research on the next generation of distribution networks
- Simulation of power systems and components



New Research Infrastructures: ESFRI

The European Strategy Forum on Research Infrastructures (ESFRI) has been set-up to help developing a true European policy on RIs

- Launched in April 02 by Council of Research Ministers
- Representatives of the 27 Member and 9 Associated States + one representative of the European Commission (EC)



Role of ESFRI and of its ad-hoc working groups

- To foster an “open method of coordination” between different countries
- To discuss the long term vision at European level and to support the development of a European RI policy
- To bring initiatives and projects to a point where decisions by ministers are possible
- EC funded Preparatory Phase before implementation of RI through MS

First roadmap
in 2006

Update
2008

Update
2010

*2010 update to fill
gaps, e.g. in non
nuclear energy*

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ESFRI roadmap 2008

Identifies new international Research Infrastructures or major upgrades corresponding to the needs of research communities in the next 10 to 20 years

- Social Science and Humanities (5 Projects)
- Environmental Sciences (10 Projects)
- Biomedical and Life Sciences (10 Projects)
- Energy (4 Projects)
- Physical Sciences and Engineering (8 Projects)
- Materials and Analytical Facilities (6 Projects)
- E-Infrastructures (input to all projects + 1 Project)

-> Total: 44 projects (~ 20 B€ in ~ 10 years)


**Implementation financed by MS, Preparatory Phase funded
By the EC (FP7 project)**

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ESFRI Energy

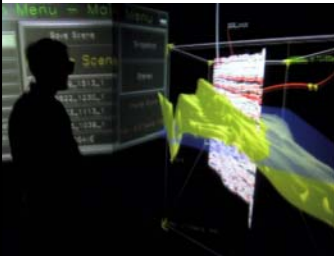
- 4 projects in energy on the ESFRI roadmap 2008 (out of 44 in total)
 - HIPER: High power long pulse for ignition fusil
 - FMIF: International Fusion Materials Irradiation Facility
 - JHR: High Flux Reactor for Fission Materials Testing
 - ECCSEL: European Carbon Dioxide Capture and Storage Laboratory Infrastructure
- Call for energy projects for the roadmap update 2010
 - 12 proposals from member states received
- ESFRI Energy Working group 2009 - 2010
 - Develop a landscape for energy research infrastructures
 - Evaluate projects for the roadmap update
 - Delegates nominated by member states + 1 EC representative

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ESFRI project 2008 ECCSEL

European Carbon Dioxide Capture and Storage Laboratory ESFRI roadmap 2008



Major upgrade of existing RI for CCS


- Hub in Trondheim / NO with major European RI involved (DE, HU, CH, PL, CRO, NL, FR,)
- ECCSEL will be a world class RI in Europe in the field

The ECCSEL RI

- Three approaches to capture and three approaches to storage of CO₂
- World class RI in its field, scientific quality guaranteed by reviews
- Open access RI for European researchers

Next steps:

- Project on ESFRI roadmap 2008
- Preparatory phase funded by EC (call for proposals)
- Construction; financed by national governments



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Community legal framework for new research infrastructures

A European Research Infrastructure Consortium (ERIC)

An easy-to-use legal instrument providing:

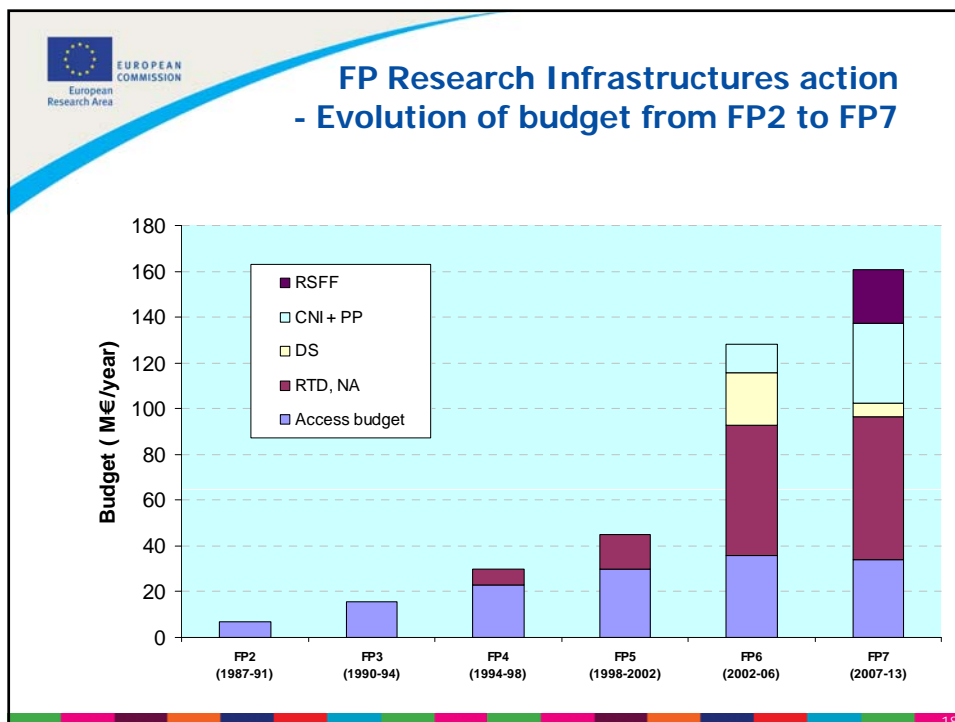
- the spirit of a truly European venture
- a legal personality recognized in all MS
- some privileges / exemptions allowed at a national level for intergovernmental organisations

Membership:

- Member States and Associated Countries
- Third States
- Intergovernmental organisations

A State may be represented by one or more public entities or private entities with a public-service mission

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Next steps

- Implementation of ESFRI Roadmap
- Implementing new ERIC legal framework
- Continue to support integration of existing RIs to ensure their optimum use and development
- Enhance international dimension of RIs

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Other relevant information

- **FP7 and Capacities Specific Programme**
 - <http://cordis.europa.eu/fp7/>
 - <http://cordis.europa.eu/fp7/capacities/>
- **Research Infrastructures on Europa website**
 - <http://ec.europa.eu/research/infrastructures/>
- **ESFRI on CORDIS**
 - <http://cordis.europa.eu/esfri/>

Thank you!

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