

European Strategy Forum on Research Infrastructures

Research Infrastructures

Tools for the Construction of an Innovative Europe

Research Infrastructures

- ❖ Modern research in all scientific fields requires new and expensive instruments, developing a continuous interplay between advancing science challenges and technical responses
- ❖ Several of these instruments are too expensive for any single Country, and must be made available as “international Research Infrastructures” (RIs).
- ❖ Modern RIs are both one sited and distributed, and the increasing capability of ICT allows to connect and access them and the produced knowledge in novel and effective ways

ESFRI : a brief introduction

European Strategy Forum on Research Infrastructures, established in 2002 by the Council of Ministers, brings together representatives of the Research Ministers of Member and Associated States and a representative of the European Commission.

Mission and strategy of ESFRI

Support a coherent, strategy-led approach to policy-making & to facilitate multilateral initiatives leading to a better use and development of RIs

RIs, at the core of an efficient Research & Innovation strategy

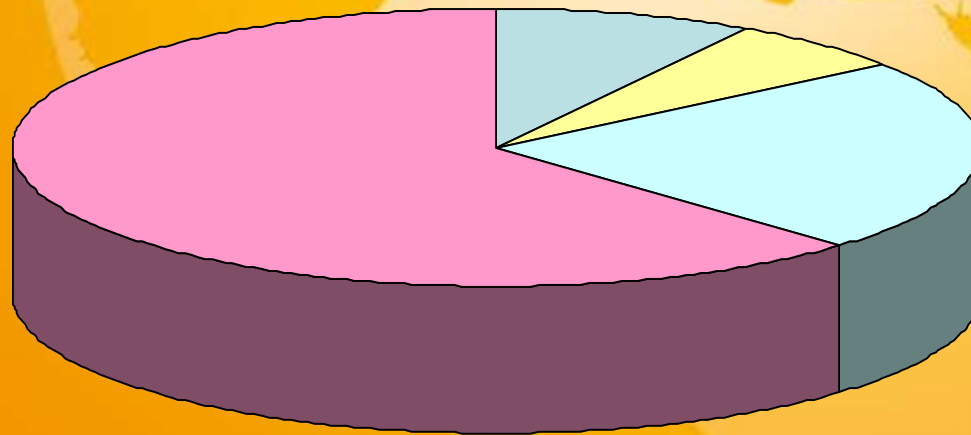
- ❖ RIs designed and operated to attract / host best researchers in the world (open access) play important roles in the advancement of knowledge and technology.
- ❖ To respond to challenges but they need innovation and world-level quality in all aspects of their activities: scientific, educational, technical and managerial.
- ❖ This liberates the creative and inventive potential of the staff, the users and the providers, from scientists to industries, and thus becomes a crucial socioeconomic driver

Access to world class European RIs are essential for European Researchers

90% of the FP users have declared that they would not have been able to carry out their work at the RI without EC support

(Source: 5050 filled questionnaires

<http://www.cordis.lu/infrastructures/questionnaire.htm>)



Reasons:

■ NOT ELIGIBLE

■ APPLIC. TOO DIFFICULT

■ UNABLE TO PAY UF

■ UNABLE TO PAY T&S

ERA 2020 Vision

As part of an RI eco-system, "major research infrastructures in the ERA promote excellence in science on a globally competitive basis. With rapid development of new distributed and e-infrastructures, they offer equitable access to world class modern research facilities and technology demonstrators"



A Key Challenge for EU:

build and operate world class RIs

- ❖ No single Country can build and support all the needed "open access" RIs : many EU Countries have potential RIs (several hundreds) but often unable to upgrade and manage as needed (yearly operational costs about 10 billion €)
- ❖ Only by pooling and integrating with new resources the EU can acquire and operate RIs at world level.
- ❖ In several cases agreements and efforts at Global level are necessary (e.g. ITER, Global warming, earth sciences related RIs)

A summary of ESFRI Activities

ESFRI is engaged in an “incubator role” in several activities in line with its mission to support policy-making on pan-European and **Global RIs**; this includes Working Groups and actions that may have an impact on the realisation of RIs, e.g.:

- **Regional Perspectives, rebalance East/West;**
- **Siting and Hosting Issues;**
- **Management Aspects;**
- **Socio-economic returns;**
- **Evaluation and prioritisation of RIs**
- **Use of new instruments, e.g. EIB/RSFF**
- **e-Infrastructures and data (with the e-IRG)**
- **Scientific landscapes & forward looks**

Other key developments

- ❖ Involving scientific communities in all sciences, and helping them to **structure** at EU level
- ❖ Regional and Structural Funds are now used to implement RIs and **Regional Partner Facilities**, using resources in win-win solutions: this joins competition and collaboration
- ❖ Developing the most appropriate **management** to ensure excellence in science and to support “**innovation ecosystems**”
- ❖ Setting criteria for excellence to drive **socio-economic returns** in a Global/Local approach
- ❖ **Attracting USA, Russia, India, China, Australia, Africa...**

The ESFRI Roadmap:

a major instrument to drive all initiatives

- ❖ In the Roadmap, ESFRI selects and indicates new/upgraded RIs, needed, with the existing ones, for full competitiveness of Europe,
- ❖ By 2008: selected 44 projects (out of > 200 proposals), in a continuing process.
- ❖ In December 2010 responded to the need to include RIs in the fields of Health, Food and Energy, by including 6 new RIs of pan-European significance – 3 in the field of energy and 3 in the Life Sciences domain

Updated roadmap in
2010

Implementation of the Roadmap

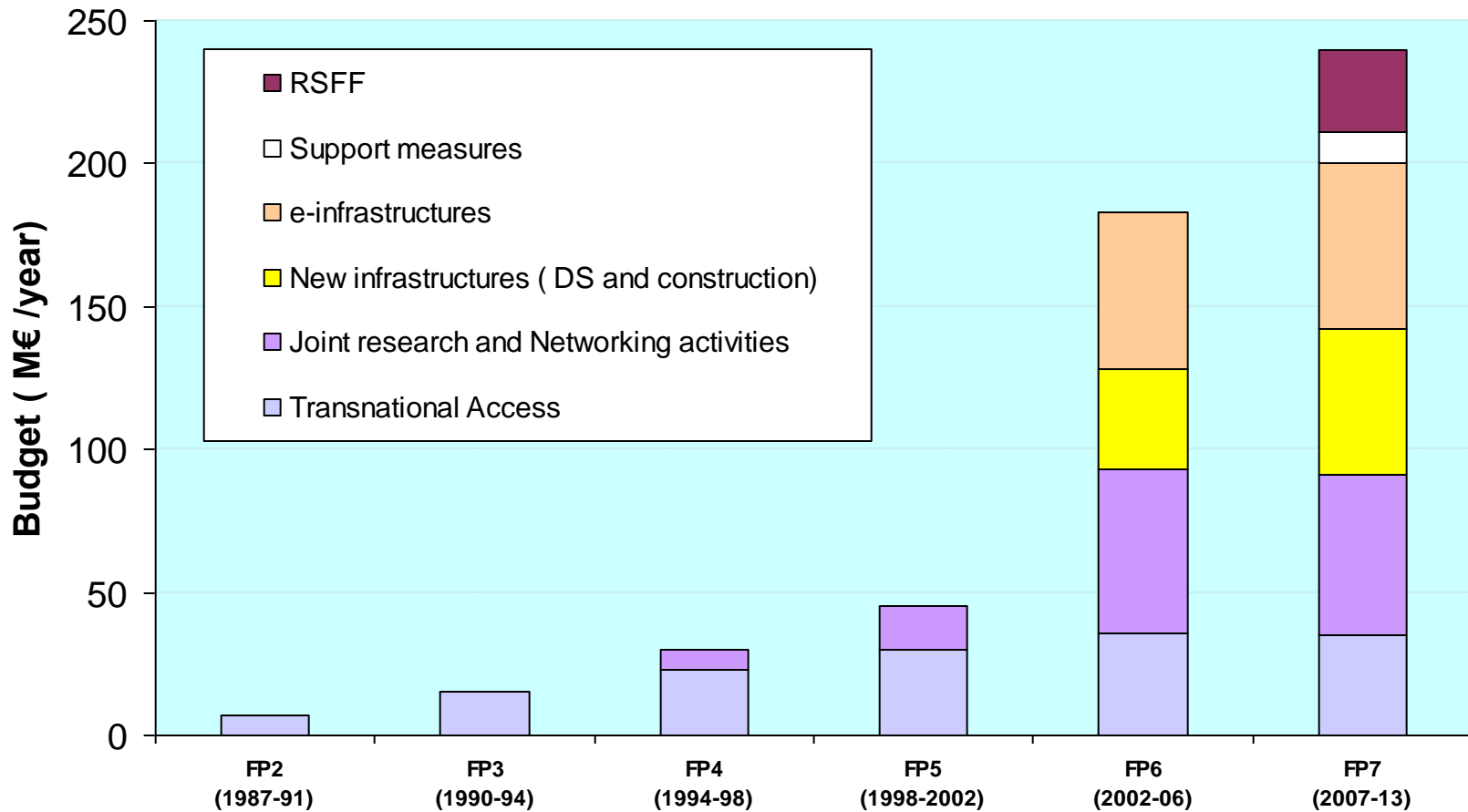
End of 2010:

- Ten (10) new RIs “under implementation”: agreement reached; the construction phase of these projects is ongoing or imminent;
- Eighteen (18) RIs “moving to implementation”: with significant progress by the end of 2012;
- Most of the remaining projects are progressing well, some issues are being addressed by ESFRI within the Member States

This has been possible thanks to the synergy with the EC, EP and Council: an EU budget of 135M€ has supported the start-up phase of several RIs, and the Council, supported by the EP, has approved the new ERIC regulation


EC Framework Programme

Support to existing and new Research Infrastructures



Vision For the future?

- A fully integrated, consistent, efficient ecosystem of Research Infrastructures, serving researchers and society in all S&T fields (broader approach than FP7)
- RIs as knowledge industry for the knowledge society, source of attraction for world scientists as well as source of innovation
- Based on widely used and efficient e-infrastructures (increased inter-services / inter-ministries cooperation needed)
- Increase the level of support for existing RIs and to optimise their impact in the context of the EC's 8th Framework Programme



Which are the key factors able to affect the vision?

- Capacity (or not) to develop a *favorable / catalytic environment* for EU research & innovation (not just national)
- Capacity (or not) to strengthen relations with *education*, the people, and with *industry*
- Capacity (or not) to *work together / pool resources* to face more complex problems / costly solutions
- Capacity (or not) to face *research internationalization*

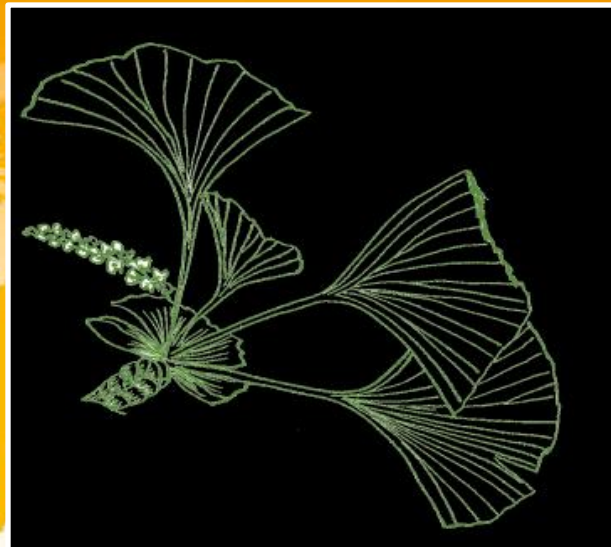
"Europe 2020 Flagship Initiative, Innovation Union"

Research Infrastructures:

- address the challenges and opportunities facing Europe in key areas where urgent and sustained efforts are required;
- set out clearly the key European, national and regional initiatives needed to create the Innovation Union, with a focus on innovation
- address the major societal challenges, pursue a broad concept of innovation, include all actors and all regions in reaching the goal to create an Innovation Union.

One of the commitments of the Innovation Union is that the Member States, in close cooperation with the European Commission, should have completed or launched the construction of 60% of the ESFRI Roadmap projects by 2015.

In this context, the Commission has called on Member States to considerably improve their use of existing Structural Funds for research and innovation projects.



Thank you for your attention!