



ESF et l'infrastructure de la recherche
Importance grandissante et rôle
changeant

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Quesque c'est l'ESF?

The ESF provides a common platform for its Member Organisations in order to:

- Advance European research
- Explore new directions for research at the European level

Through its activities, the ESF serves the needs of the European research community in a global context

80 MOs in 30 countries

Research funding organisations

Research performing organisations

Academies

Dynamique en sciences et société

- European science is part of the global endeavour
- Frontier questions
 - Are more and more interdisciplinary
 - Often require expensive infrastructure
 - Are best answered through collaboration of the best research groups, regardless of country, regardless of the institutional setting
- Complex scientific and societal problems require large scale interdisciplinary research
- Need dialogue between science and policy
- Quality is best determined in international competition, especially for small countries

Besoins en adressant des questions de recherche complexe et à grande échelle

- Science planning, synthesis and assessment structures
- Interdisciplinarity, spanning natural and social sciences as well as humanities
- **Research infrastructures and monitoring systems**
- Data access, sharing and preservation
- Global collaboration in the context of national and local science structures
- Capacity building and inclusion

Défis en adressant ces besoins

- Disciplinary structure universities and research institutions
- Predominantly project funding mechanisms
- Mainly national research funding agencies
- Lack of global structures
- Involving developing countries

Exigences changeants aux organismes de recherche nationaux

- Promote research careers of young and advanced researchers
- Engage in joint strategy development
- Support global scientific programming, networking, synthesis and integration
- Enable international research collaboration at the bench of nationally funded researchers
- Synchronise proposal review procedures
- **Support research infrastructures of international significance**
- Take a global perspective



Un EER compétitive à l'échelle globale demande



1. An effective European research policy, capitalising on cultural, geographic and scientific diversity
2. A stimulating education system
3. A single European labour market for researchers
4. Adequate funding for top quality curiosity driven research
5. Cross national funding, benchmarking of quality and shared scientific priorities for strategic research and bottom up researcher-driven programmes
6. Excellent research institutions
- 7. World-class research infrastructures**
- 8. Open access to the output of publicly funded research and permanent access to primary quality assured research data**
9. Effective and trusted bridges between science, society and the private sector
10. Openness to the world



Instruments

- Forward Looks
- Exploratory Workshops
- Member Organisation Fora
- ESF Research Networking Programmes
- EUROCORES
- Conferences
-  Actions
- EuroBioFund
- Standing Committees
- Expert Boards

ESF et l'Infrastructure de Recherche et des Données

- EC-ESF-EUROHORCs Research Infrastructure Survey in print; creation by EC of ESF validated on line database
- Alliance for permanent access
- NSF-EuroHORCs-ESF Task Force
- MO Forum on medium sized RI
- Specific Research Infrastructure:
 - ESS on ESFRI list; preparatory grant EC; 25 MOs participate; SCSS involved
 - Aurora Borealis on ESFRI list; 4.5 M€ preparatory grant EC; led by AWI and Polar Board
- Advice to the EC and to MOs



ESFRI ESF comme lieu d'incubation

- ESF, the EC and the French EU Presidency organised the [Strasbourg Conference on Research Infrastructures](#) in September 2000.
- The European Commission then set up a high level Expert Group with representatives from all Member States recommending the creation of a “**European Strategy Forum on Research Infrastructures**” (ESFRI).
- Commissioner Busquin wrote a letter to the Research Ministers of the 15 Member States in February 2002, asking them to nominate representatives to the Forum. The first meeting of ESFRI took place in Brussels on 25 April 2002.



EC/ESF/EuroHORCs relevé d'Infrastructure de Recherche 2006/7

Trends in European Research Infrastructures

Analysis of data from the 2006/07 survey

European Commission
European Science Foundation

Report – July 2007

Information contained in this report is also available online under
<http://ec.europa.eu/research/infrastructures>.
Research infrastructure operators can also update their data and enter
additional infrastructures through this web address.

Identify the current major RIs in Europe as well as trends and new developments.

783 entries in all scientific domains;
598 entries validated by ESF

Analysis published in July 2007

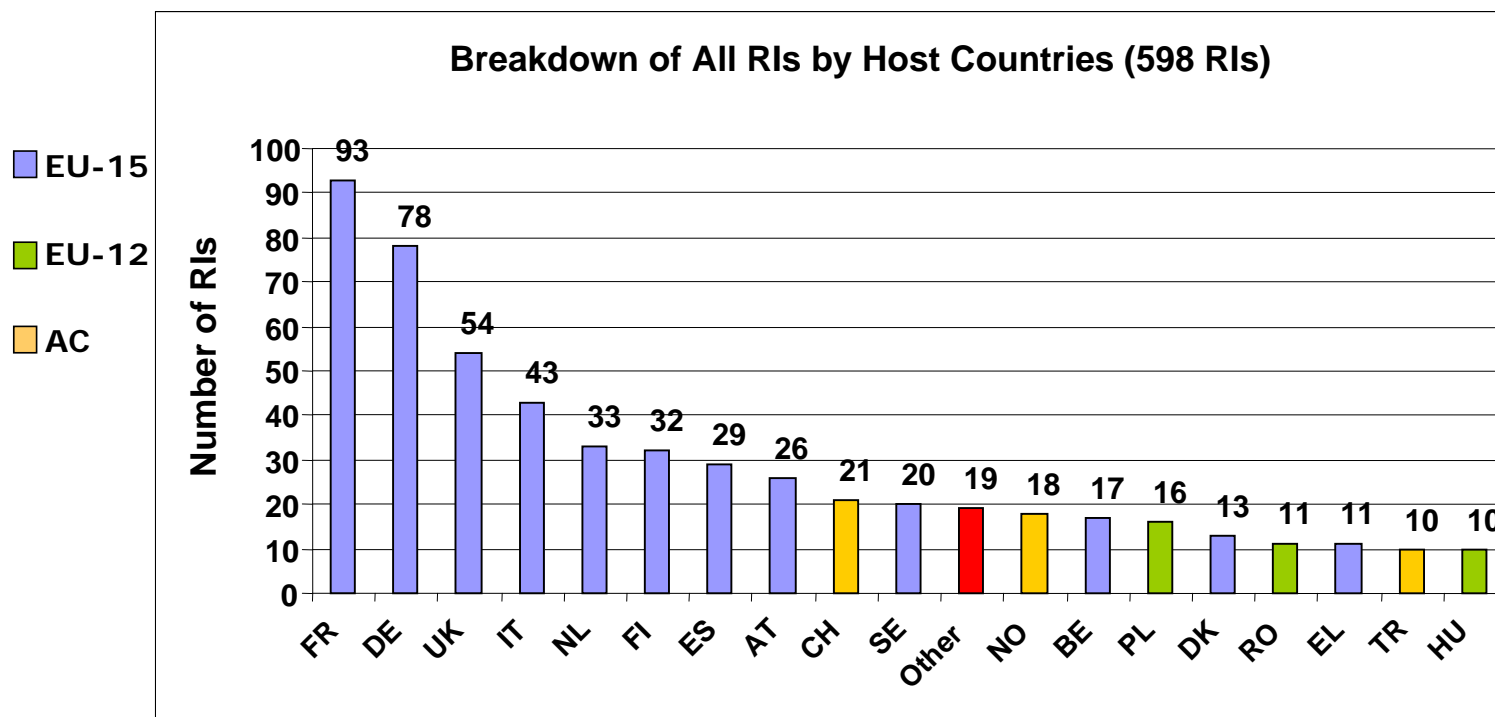
Database as online portal in July 2008

Critères de sélection des IR

New entries have to be:

- Relatively costly
- Open to international use
- Pan-European
- Allowing cutting-edge research
- Internationally recognised

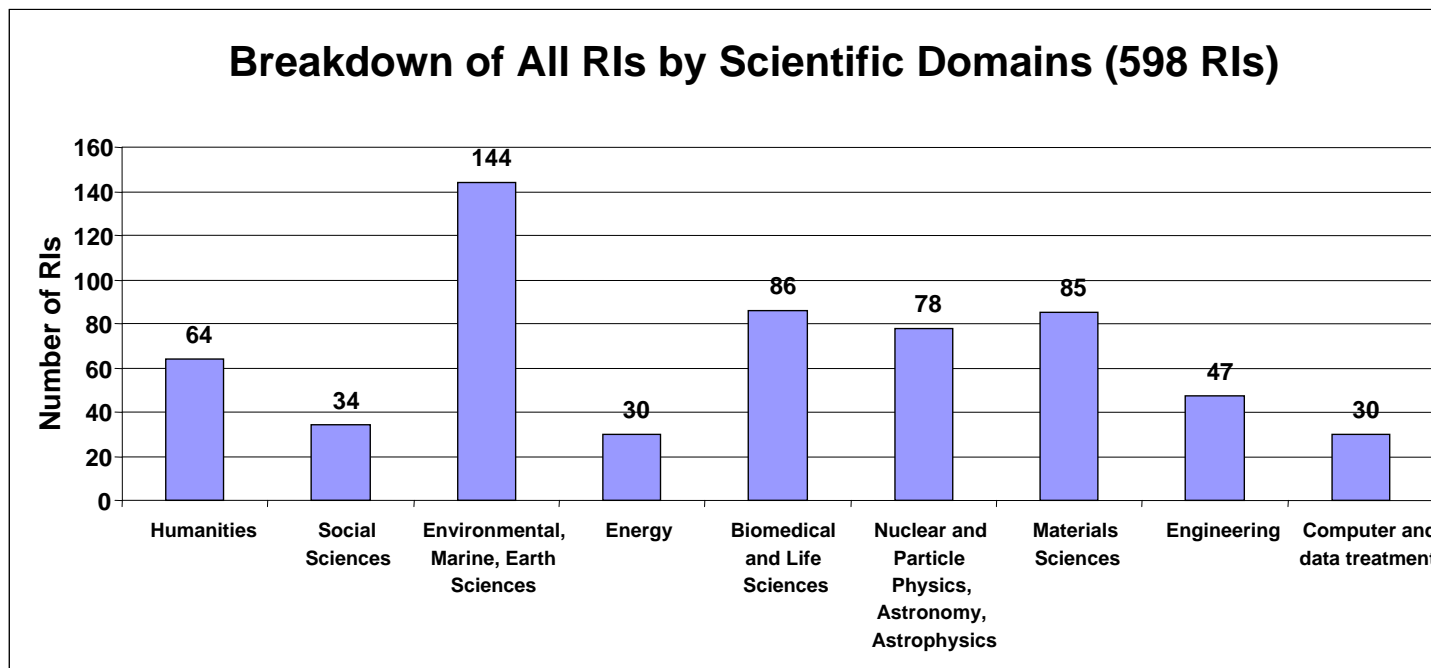
598 items validés ont été analysé



Other: RI location in third countries like Chile, Antarctica, Lebanon, Georgia, Australia...or in several European countries like CERN in CH/FR

Countries with less than 10 responding RIs are not represented

Domaines scientifique principales des items validés

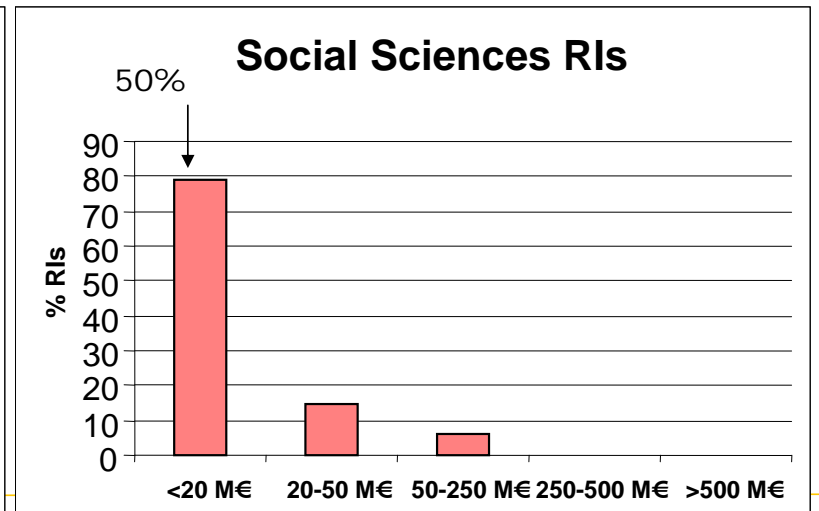
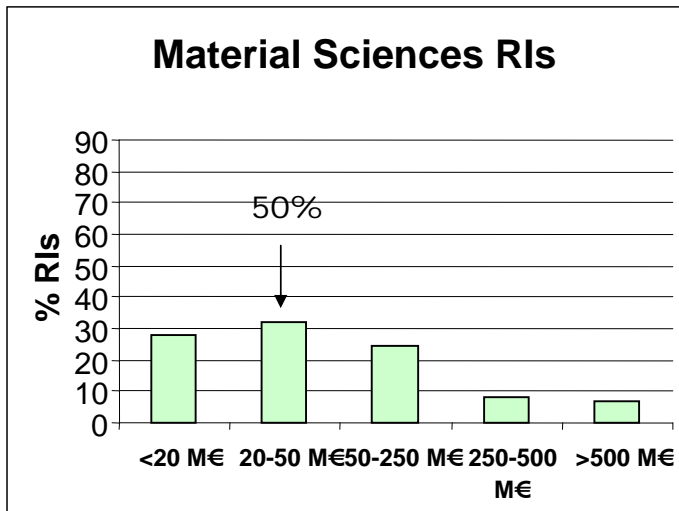
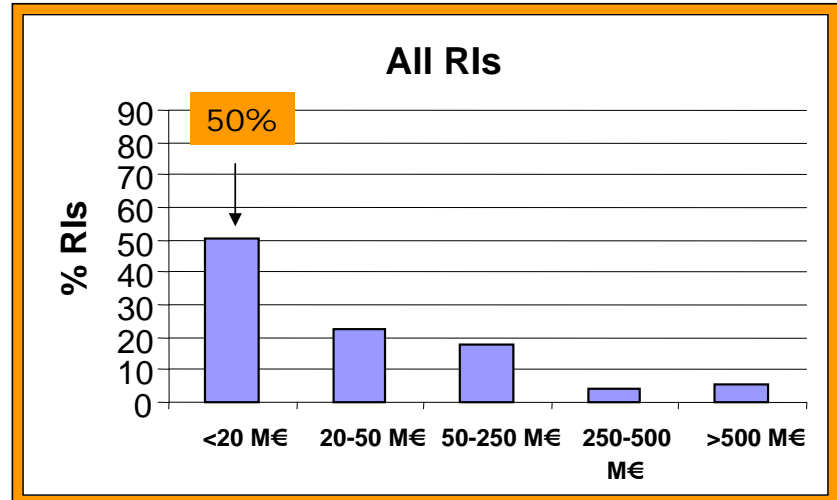


More than 25 500 permanent scientists are working in such facilities ...

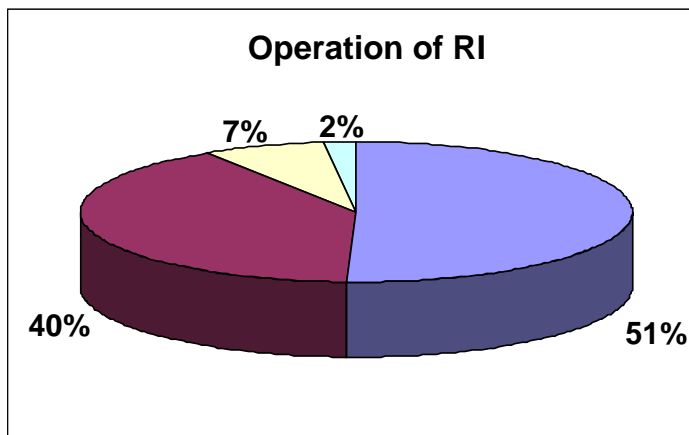
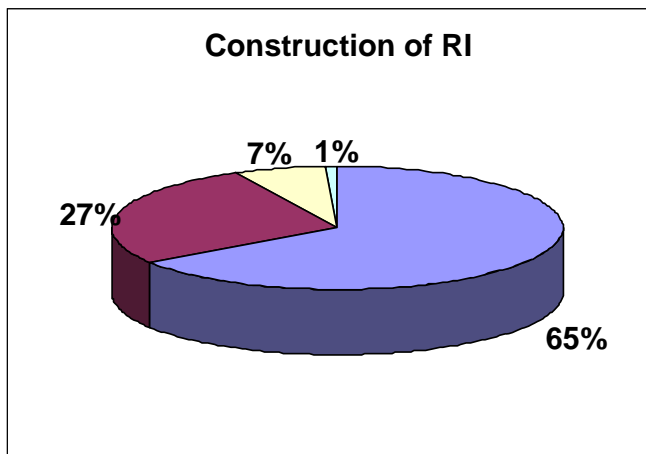


Coûts de Construction

The majority of European RIs are of small to medium size as to their construction costs...



Source de financement (toutes IR)



national only

international only

national and international

not specified (incl. private)

Existing facilities have been supported mainly by national funding

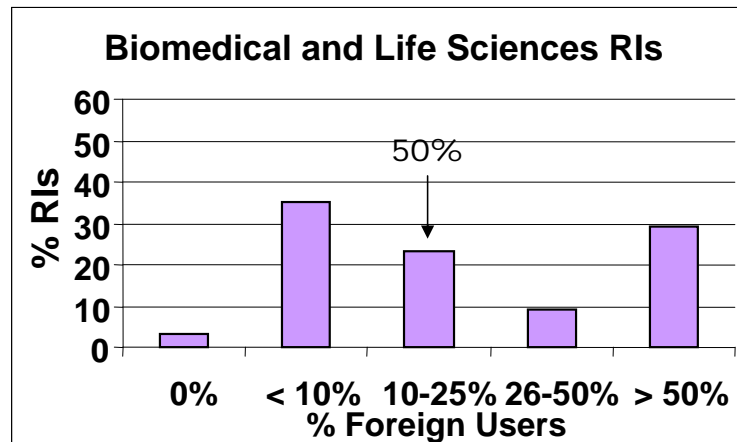
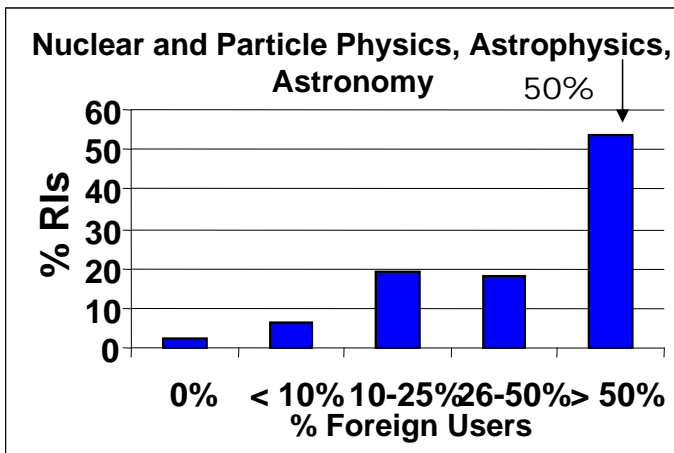
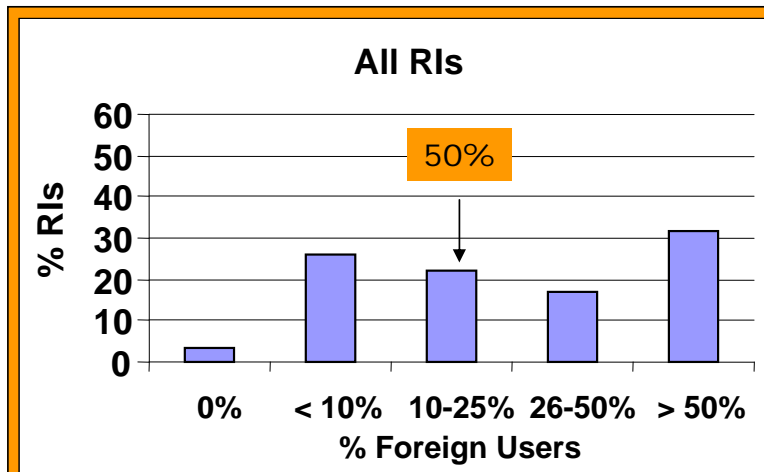
Operation is more international than their construction...

More than
145.000
external users
per year

Utilisateurs Etrangers

About 1/3 of all RIs have more than 50% foreign users among their external users ...

In physics, this share reaches 54% of RIs...



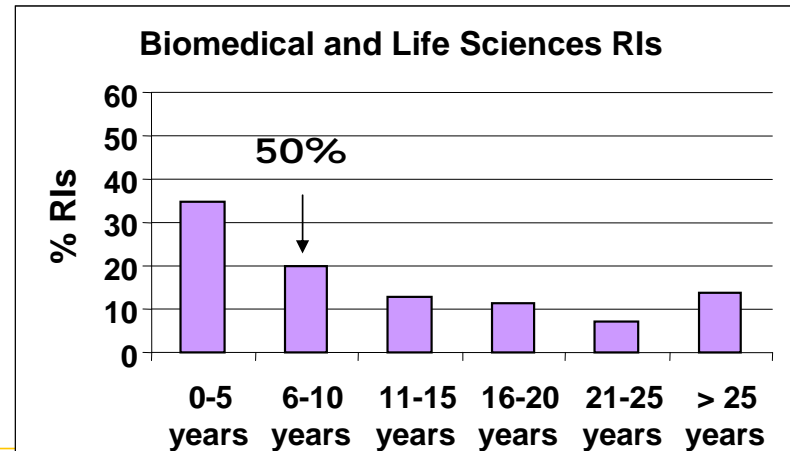
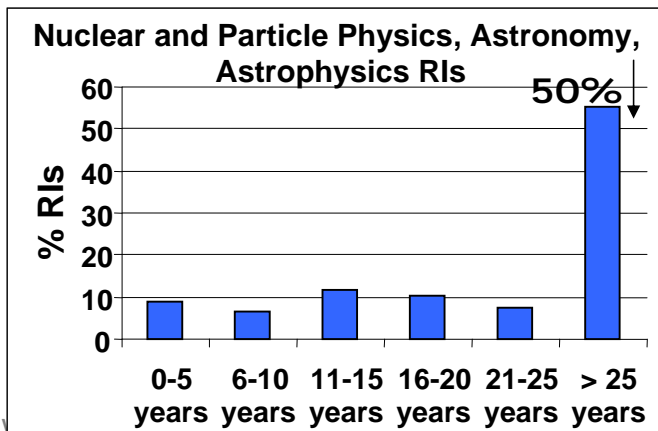
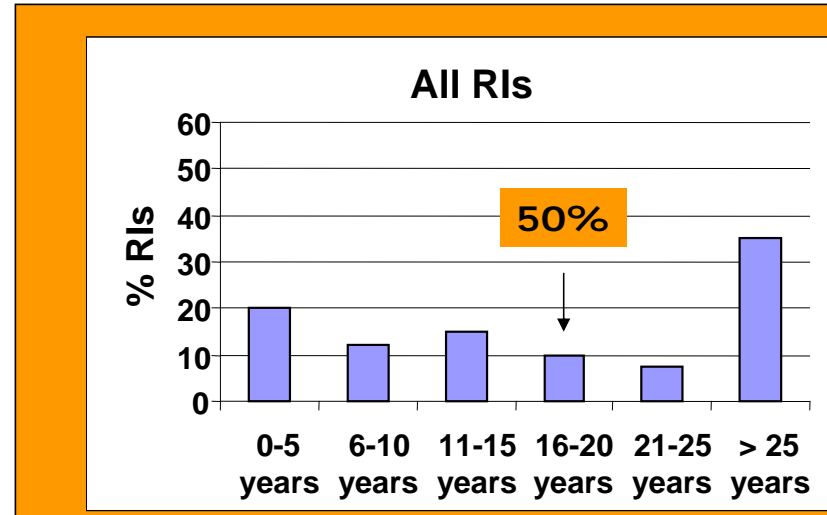


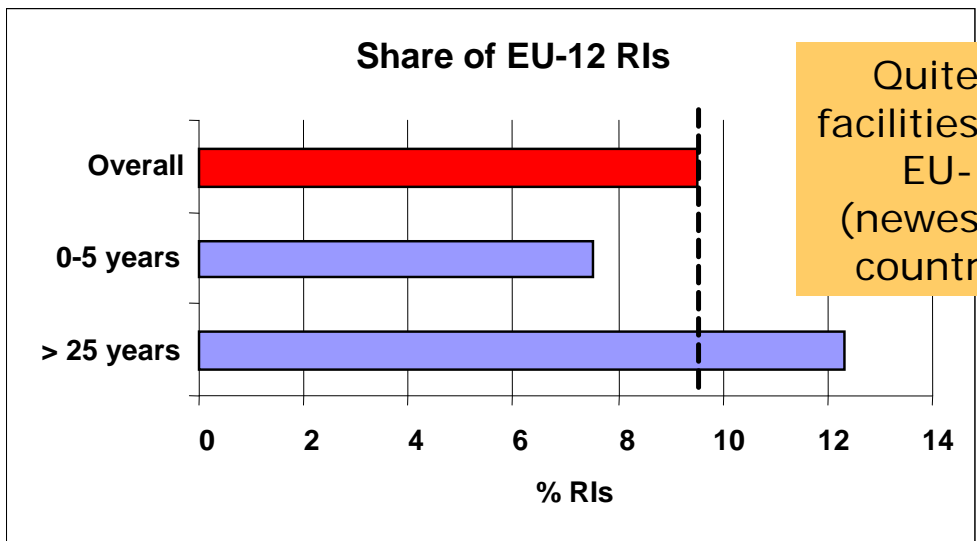
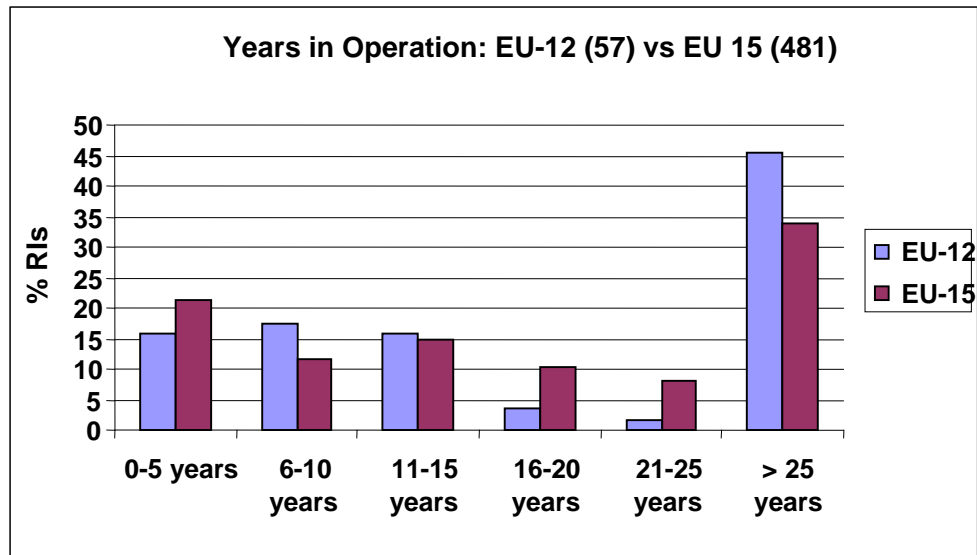
Années en Opération

Quite mature facilities

The BMS domain is clearly the one which has developed most recently in Europe...

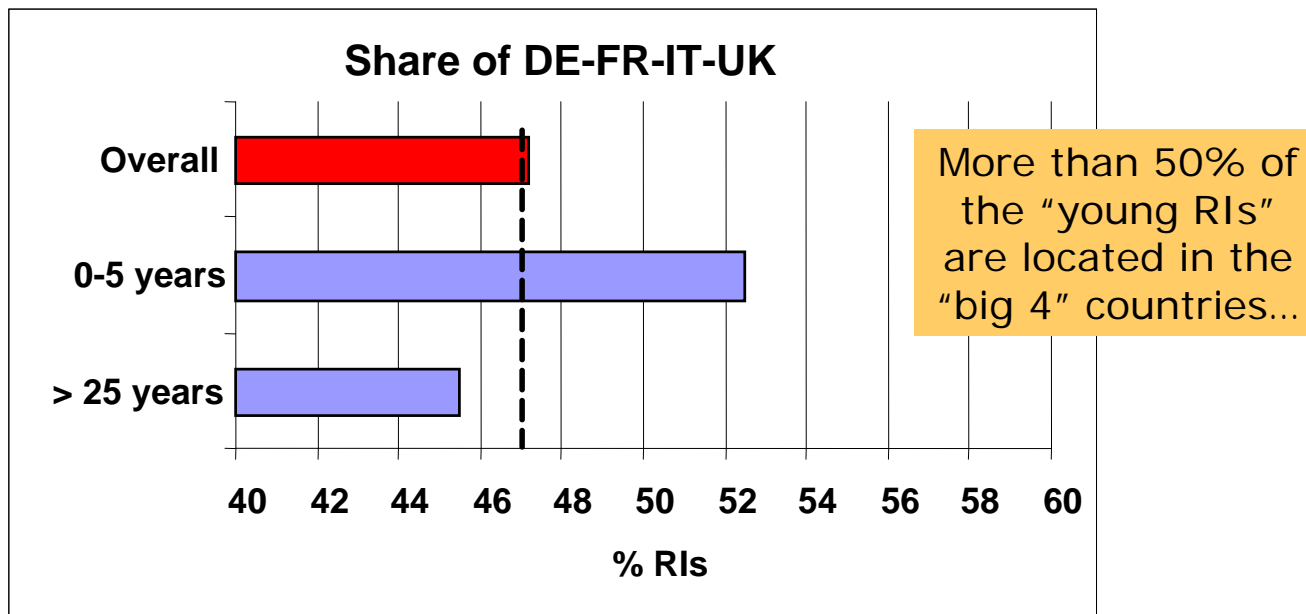
Age





Quite old facilities in the EU-12 (newest MS) countries...

... les IR (DE-FR-IT-UK) sont plus jeunes...





Portail Web d'Infrastructure de Recherche

Covering facilities, resources and related services



It includes:

9 Category "Data storage & data archives (Social Sciences)

21 Digital collections/repositories (Humanities)

4 Biobanks (Life Sciences)

Etc

The database is still growing.

Validation of new entries by ESF.

www.esf.org

Societe Royale des Sciences de Liege, 2 decembre 2008

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Accès Permanent aux Données de Recherche

- Research data represent a huge investment.
- Permanent access to such data, if quality controlled and in intercomparable formats, allows other researchers to use them, allows re-analysis of for example long time series and could play a role in ensuring Research Integrity.
- ESF is member of the Alliance for Permanent Access
- EUROHORCs and ESF will address how to best promote and ensure permanent access to data generated with their funding



EUROHORCs-ESF-NSF Groupe de Travail sur le Partage et l'Interopérabilité des Données

Mandat

- Integrity, sustainability, archival and retention of large data sets
- Sharing of datasets, imaging, and visualization platforms and architectures
- Common standards, frameworks, processes and protocols for integration and fusion of disparate data sets and models
- Sharing of data and services through e-science portals and common cyberinfrastructure
- Software interoperability and software libraries/repositories
- Coordinated data and e-science policy development to ensure synergistic planning and implementation in on-going and future collaborations

ESF Member Forum

- Operating at the level different from ESFRI, many EuroHORCs organisations fund and operate RIs of national and European importance. **They will create a platform to discuss in particular joint investments in, networking of and access to medium sized research infrastructure.**
- Launch: Early 2009
- Participants:
 - ESF Member Organisations,
 - European Commission
 - ESFRI

European Social Survey

- Since 2001 four rounds of surveys in 30 countries (EU plus, e.g., Israel, Norway, Russia, Turkey, Switzerland), more than 150 000 interviews to:
 - measure changes in public attitudes and behaviour patterns both over time and across nations
 - improve the quality of comparative quantitative measurement in Europe and beyond
 - establish robust attitudinal indicators to stand alongside existing behavioural and factual indicators of national well-being
- Funding by
 - National agencies – two thirds
 - EC – around one third
 - ESF – k€ 55 per year

Quelques Résultats Obtenus avec ESS

- Despite the widely-held view that public trust in politicians is in long-term decline, ESS data show that such a decline has either greatly reduced or ceased altogether
- The 2003 ESS provides a rich, detailed set of questions about the immigration issue
- There is now a set of common European expectations as to the desired qualities of a good citizen
- People who are most worried are also more inclined to see it as the government's responsibility to provide an adequate standard of living for old people
- More than 35 000 unique data users

Bateau de Forage Arctique

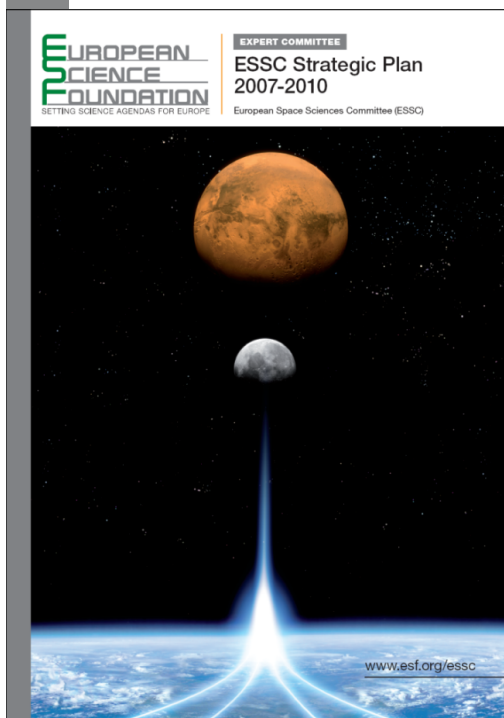


Les IRs et les technologies spatiales



- L'Europe s'engage dans un grand programme d'exploration (humaine)
- Besoin de non-dépendance de l'Europe vis-à-vis de technologies "critiques" (*p.e.* sources énergétiques radio-isotope; vol en formation; systèmes de rentrée et d'atterrissage; positionnement et étalon temps haute précision etc)
 - nécessité de soutenir la R&D européenne en matière de technologies innovantes
 - mise en commun des ressources de différents pays de l'UE
 - soutien accru par le biais du programme cadre

Les IRs et les données spatiales



- Contrairement aux USA où la NASA prend en charge le support aux chercheurs de façon intégrée, l'ESA ne peut guère financer le traitement des données
- Le soutien procuré par les agences nationales a tendance à être fragmenté
- **Besoin de mise en commun des ressources (équipements, bourses post-doctorales etc)**
- **L'ESA et la CE doivent définir les mécanismes permettant de régler ce problème**

Meilleure coordination de l'utilisation

Enhanced means of using the European fleet more efficiently

Recommendations concerning vessels	<ul style="list-style-type: none">- Enhance coordination of fleet scheduling;- Promote bartering to avoid long passage time between cruises;- Encourage chartering process to use the non-funded time;- Create a 'scrap premium' to get rid of old and under-utilised vessels;
Recommendations concerning equipment	<ul style="list-style-type: none">- Enhance coordination of equipment scheduling;- Achieve interoperability of equipment;- Transnational deployment teams;- Sharing of spare parts;
Proposals for implementation	<ul style="list-style-type: none">- Towards funding agencies and National authorities;- Available ship and equipment time to be published;- Reinforcement of the OFEG organisation;- A European initiative for interoperability;- Creation of new marine facilities bartering groups;- Development of national equipment pools;



Elargir l'accès

How to widen access to European scientific fleets

Recommendations	<ul style="list-style-type: none">- Joint cruises;- Rare systems;- New Member States access;
Proposals for implementation	<ul style="list-style-type: none">- Through MarinERA;- Through the European Union;- Through the Marine Board;



Investissements en commun

Long-term investment strategies

Recommendations	<ul style="list-style-type: none">- Develop a flexible and adapted framework to better integrate strategies and favour the development of partnerships;- Facilitate co-ownership of RVs, favour adequate conditions to maximise relationship between managers and owners and on a bilateral/multilateral basis;- International cooperation in cost-sharing for the construction and operation of rare equipment;- Facilitate equipment availability for European Union Framework programme funded projects;- Facilitate the access to equipment to scientists from new Member States;
Proposals for implementation	<ul style="list-style-type: none">- Through funding agencies and National authorities;- Through the European Union;- Through the ERVO group;- Through the OFEG;- Through the EurOcean website;



Forward Looks (Prospectives)



Enable ESF MOs in interaction with scientific community and other organisations to develop medium term views and analyses of future research developments, and on the basis of this

- Define research agendas and priorities,
- Develop pan European approaches
- Plan resources to meet future demand, including
- **Develop new infrastructure**

Forward Look sur l'IR en Sciences Sociales et Humaines

- Rationale:
 - Dispersed Infrastructures in Social Sciences and Humanities
 - Limited visibility
 - Need more coordination
 - Need to identify bottlenecks in those areas
 - Need to have a clearer strategy
- The EC plans to work with ESF on a Forward Look to address those issues.