


European Strategy Forum on Research Infrastructures 

## Towards better coordination in Research Infrastructures between member States and/or Regions

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## Why (large) RI's?

“Critical Installations providing essential services to the international research community”


- *Unique and attractive (quality and rarity)*
- *Too expensive\* for a single group/institution/region*
- *Provide high level external service, typically to 100's-1000's researchers /year*

\* Investments and cumulative costs from millions to billions of Euros, to be planned over the useful lifetime of the facility, from few years (satellites, computers, accelerators,...) to decades (synchrotrons, neutrons,...) or even centuries (libraries, collections,...)


**Strong attracting centres for networking & training**  
(.....excellent “centres of excellence”), **but also inducing general Socio-economic returns**

Many “national” and/or regional facilities are open to international use, but more can be done also involving less central regions


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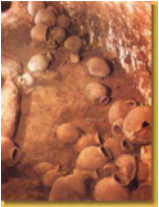
## RI's have been around for a long time...



Stonehenge Observatory



Ebla library



Seed banks?  
Collections?

.....no difference between basic and applied Research

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## ...and bases for the Renaissance in EU...





Abbeys+monasteries: knowledge repositories and research centres.

Marktplatz's: “facilities” for basic to applied “Technology Transfer”

Very attractive for mobile scholars and for opening new markets



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## ...and now contribute to Eu's and World integration in S&T


Scientific progress needs “global” facilities: ITER, ESO, ISS..., but also “regional” facilities: Synchrotrons and FELs, Ships, Collections.....








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## A rich and complex typology


•Many types and areas:

- Single site: libraries, data banks, collections (seed/animals, palaeontological, archaeological,...), observatories, nano-bio/materials “foundries” and analysis (Synchrotrons, NMR,...), cultural heritage, natural reserves, accelerators, satellites, biological/medical facilities, oceanographic ships, computing centres, arctic/alpine stations.....
- Distributed/networked complementary installations
- Data&ICT networks

*Most in Basic Research, but always development & test beds of new technologies (e.g.: WWW, detectors, superconductivity, ICT,...) and of socio-economic returns.*

A huge investment to be made more “profitable” for S&T and EU+Regions

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## Why coordination?

**Growth of R&D increases the demand for new & upgraded infrastructures: need larger investments**

**Threat: national&traditional approach risks paralysis or duplications & less than optimal investments, in particular when budgets are small**

**Opportunity: international planning will increase return of resources at Country & Eu level, involve new members and financial mechanisms, and stimulate integration at EU, transnational and trans regional level.**

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## How to coordinate?

- The best coordination happens by well understood principles, visible cost/benefit improvements, and as freely as possible.....in this case some extra EU incentive is well spent!
- And here is the playfield of ESFRI:
  - Build a common understanding of Countries/Regions on R&D requirements
  - Help assessing opportunities for best use of resources and for attracting of new ones
  - Build a "Basket of opportunities", to negotiate decisions in "variable geometries" and incentives by Eu funding and EIB loans.
  - Identify best practices and requirements of different communities and stages of maturity.
  - Develop common managerial and evaluation aspects to best fit socio-economic returns to different sites and regions
  - Help financial planning and bidding.

*The main instrument: a common roadmap from 2006 onwards, to share national resources, prevent lack or overprovision of RI's, and help finding complementarities.*

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## Some points of attention

**Research Infrastructures are a test bed to:**

- Make Eu more attractive to scientists
- Strengthen Training and Technology Transfer
- Improve Returns on Investments
- Overcome the limits of national policies
- Build European Institutions

**But we must remember that we start from very diverse situations: state sizes&budgets vary by over 10 X, and very different local environments.**

**Therefore we cannot have only MegaScience, but must extend from small to large and from Human to Natural Sciences**

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