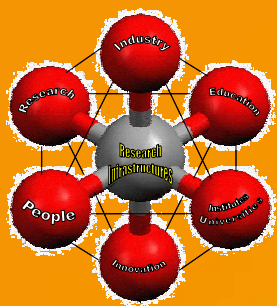




European Roadmap for Research Infrastructures

Jacek Gierliński
Vice-Chair
ESFRI Executive Board

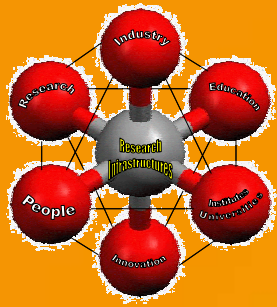


Research Infrastructures and capacity building

Research Infrastructures of pan-European relevance provide unique opportunities for:

- world-level research
- world-level training
- stimulating technology & knowledge transfer
- ensuring knowledge preservation

... in brief for **European Capacity Building**



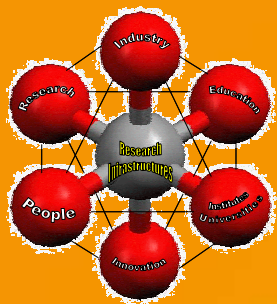
Excellence and Research Infrastructures

Europe has a long-standing tradition of excellence in research and its teams continue to lead progress in many fields

- However our centres of excellence often fail to reach critical mass
- There is a need to bring resources together and to build a research and innovation area equivalent to the "common market"

What is ESFRI?

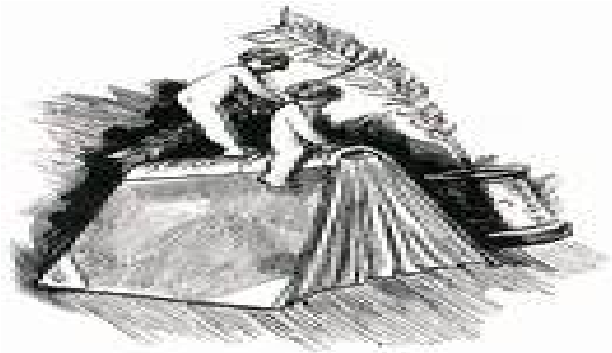
- A European Strategy Forum on Research Infrastructures
- Launched in April 02
- Brings together representatives of the 27 Member States, 5 Associated States, and one representative of the European Commission (EC)



Role of ESFRI

- 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

A stimulation and incubator role



The Roadmap

- Mandate from the Council of Ministers, November 2004
- The Roadmap is the result of two years of intensive work
- About 1000 high-level experts were involved, from every MS and AS, from most fields and user communities, giving the end product credibility and quality.

It is the beginning of an ongoing process



The Roadmap (2)

- Addressing seven (7) fields of Research and major challenges
- From about original 200 proposals, thirty five (35) projects have been identified through several review stages
- Community produced ideas that will open up new and unexpected areas of knowledge

Some fields should be stimulated for further integration

Social Science and Humanities

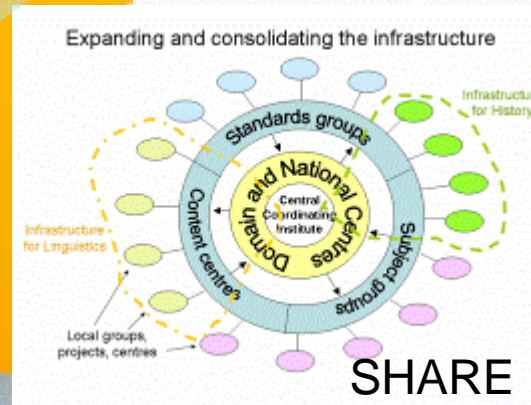


CESSDA

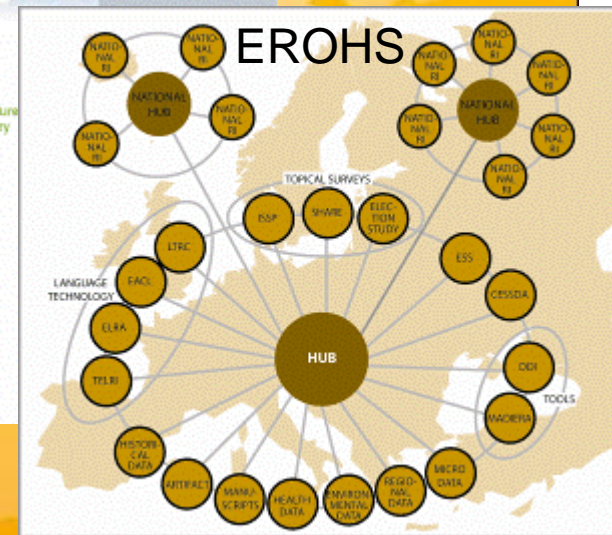


CLARIN

6 Projects



SHARE



EROHS



CLARIN



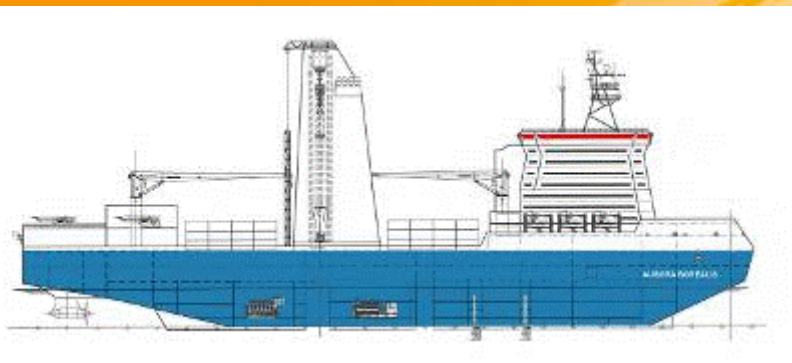
Estimated construction cost	106 M€
First open access foreseen	2008

Common Language Resources and Technology Infrastructure

- **Distributed infrastructure making available language resources and technology to researchers and scholars of all disciplines, in particular the humanities and social sciences**
- **harmonising structural and terminological differences**
- **based on a Grid-type infrastructure and using Semantic Web technology**

www.mpi.nl/clarin

Environmental Sciences



AURORA BOREALIS



IAGOS-ERI



EUFAR



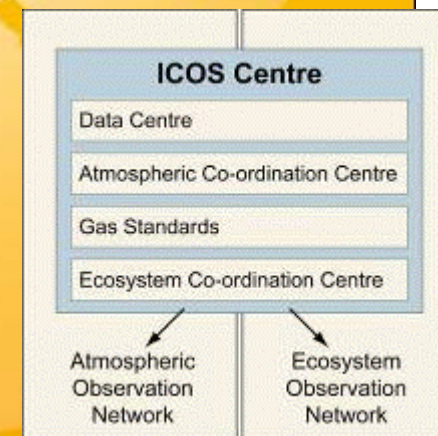
EURO-ARGO



EMSO



LIFEWATCH



ICOS

7 Projects

EURO-ARGO



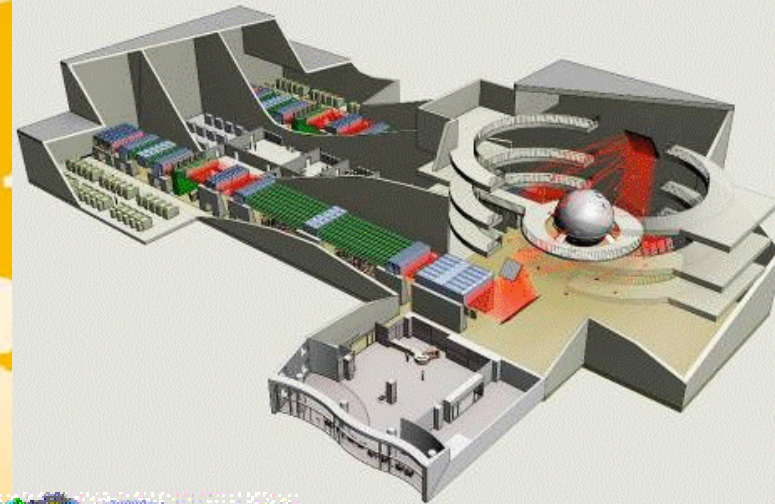
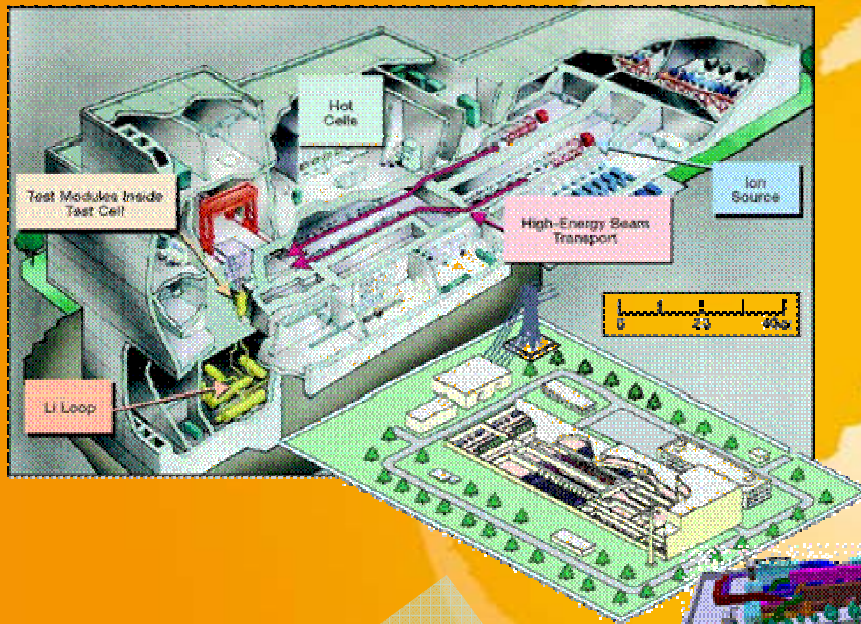
Estimated construction cost	76 M€
First open access foreseen	2010

- **European component of a world wide in situ global ocean observing system**
- **based on autonomous profiling floats throughout the ice-free areas of the deep ocean**
- **data are transmitted in real time by satellite to data centres for processing, management, and distribution**

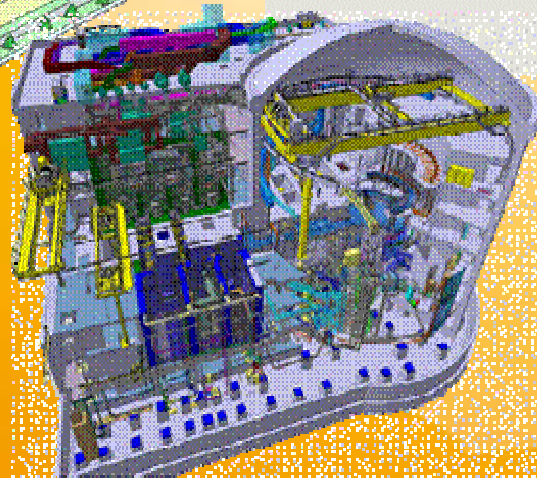
www.coriolis.eu.org

Energy

IFMIF



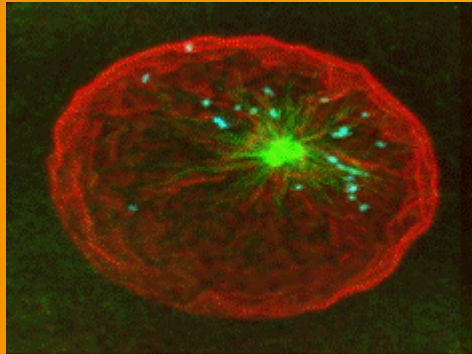
HiPER



JHR

3 Projects

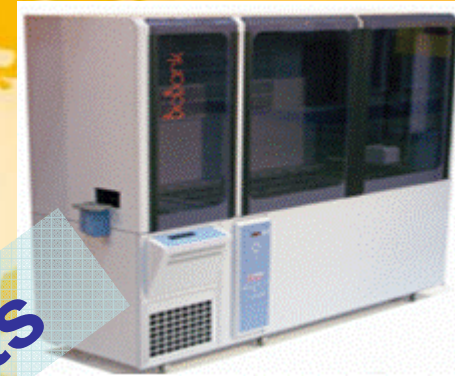
Biomedical and Life Sciences



STRUCTURAL BIOLOGY



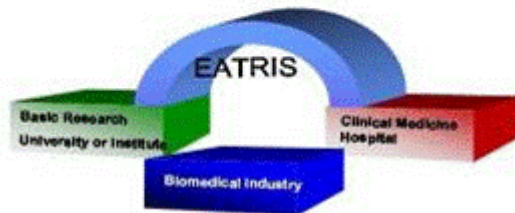
CLINICAL TRIALS



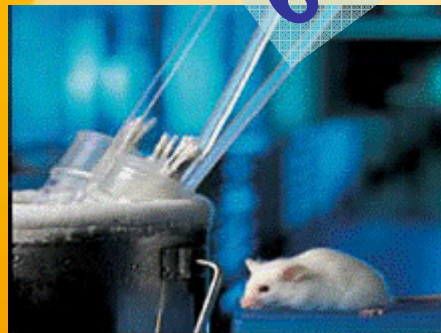
BIOBANKS

6 Projects

EATRIS
The European Advanced Translational
Research Infrastructure in Medicine



EATRIS



INFRAFRONTIER



Upgrade of EBI

Infrastructure for Clinical Trials and Biotherapy

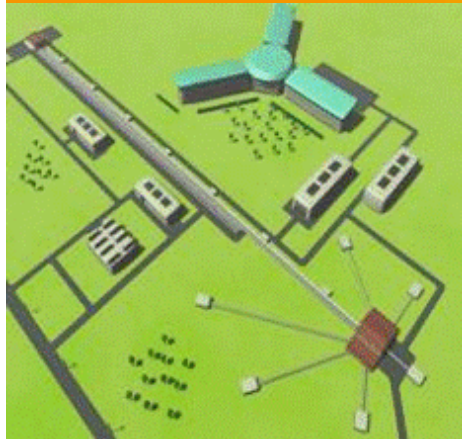


Estimated construction cost	36 M€
First open access foreseen	2007

- **This infrastructure will interconnect existing national networks of clinical research centres and clinical trial units,**
- **Will help to upgrade or create new facilities for the evaluation of innovative biotherapy agents,**
- **Will allow high quality data management across the EU and establish connections with e.g. patient associations to foster their enrolment.**

www.ecriin.org

Material Sciences



ESS



XFEL



IRUVX

ESRF

7 Projects



ILL



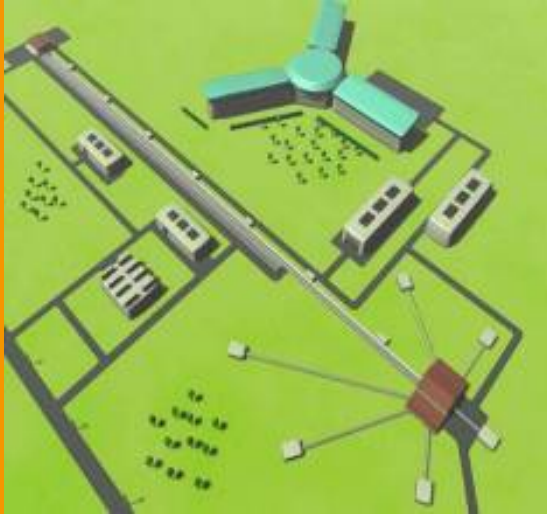
ELI



PRINS



The European Spallation Source



Estimated construction cost	1050 M€
First open access foreseen	2017

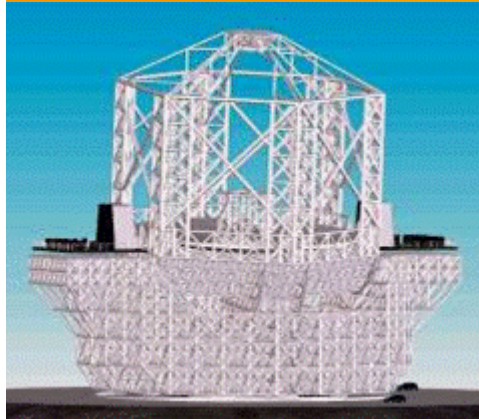
- world's most powerful source of neutrons.
- built-in upgradeability
- initial 20 instruments
- will serve 4,000 users annually across many areas of science and technology.

http://neutron.neutron-eu.net/n_ess

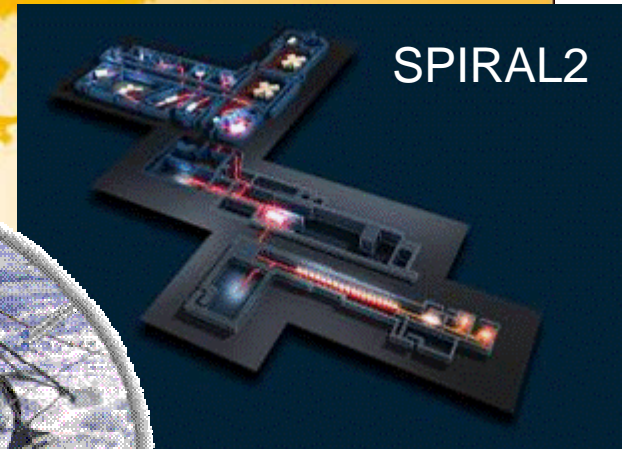
Astronomy, Astrophysics and Nuclear Physics

Report 2006

5 Projects



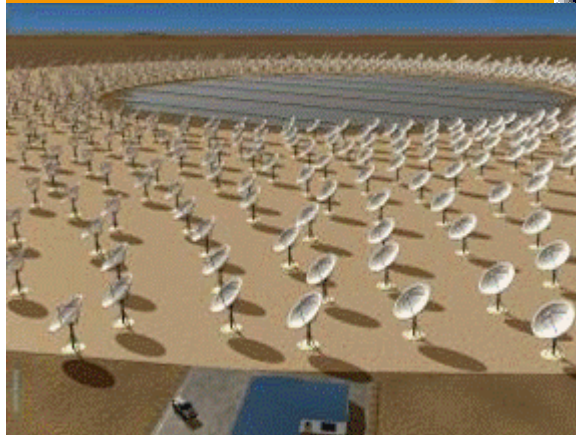
European ELT



SPIRAL2



KM3NeT

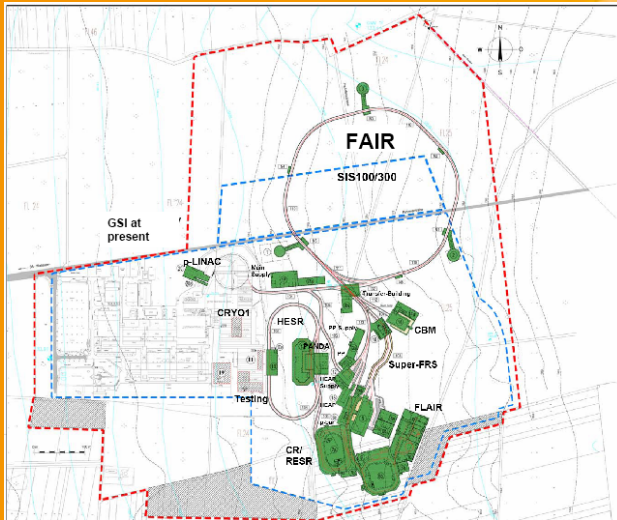


SKA



FAIR

FAIR



**Estimated
construction cost**

1186 M€

**First open access
foreseen**

2014

Facility for Antiprotons and Ion Research

- High energy primary and secondary beams of ions of highest intensity and quality, including an “antimatter beam” of antiprotons
- Will allow forefront research,
- Experiments with primary beams of ion masses up to Uranium and the production of a broad range of radioactive ion beams.

www.gsi.de/fair/index_e.html

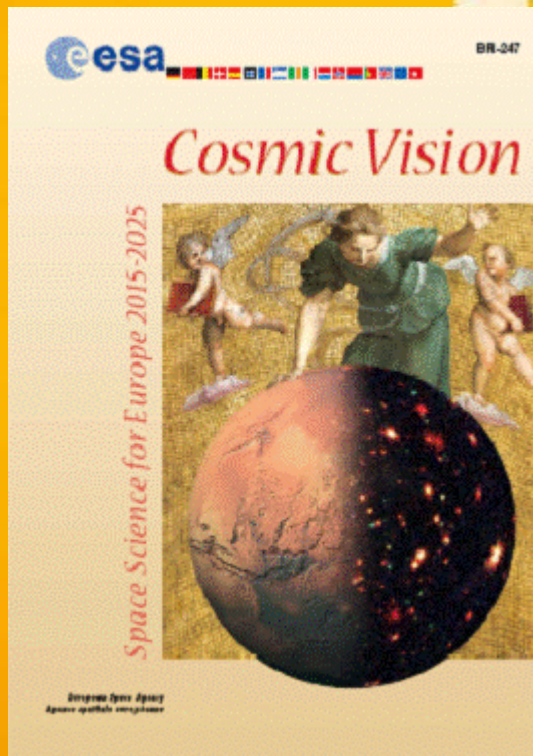
Computer Data Treatment, Particle and Space Physics

Inputs from e-IRG, ESA, CERN

Report 2006



EUHPC (e-IRG)



The ESA Cosmic Vision



The CERN Council
strategy for
particle physics

EU-HPC



Estimated construction cost	550 M€
First open access foreseen	2007

New generation of Capability (high-performance) and Capacity Computing (high-throughput) top-level machines

- **scientific computing network to be set-up at European level associated with national, regional and local centres**
- **different machine architectures will fulfil the requirements of different scientific domains and applications**

www.hpcineuropetaskforce.eu



Global Dimension

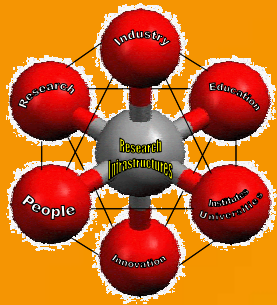
- Several of the projects on the Roadmap require a global approach
- ESFRI will enter into a dialogue with the OECD Global Science Forum for the identification, planning, discussion and monitoring of such projects
- Major players are Australia, China, India, Japan, Russia, South Africa, USA



Who is the Roadmap for ?

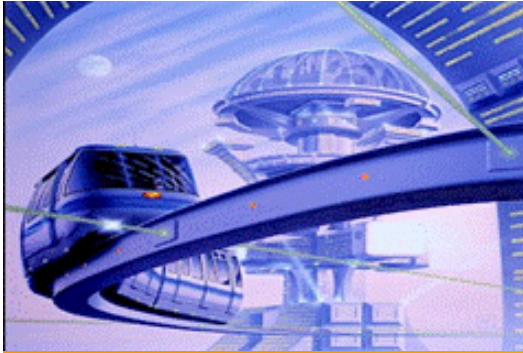
- Policy Makers
- Researchers
- Funders
- Industry

ESFRI welcomes the active role which the European Commission intends to play under the 7th Framework Programme.



Critical Issues

- Developing transferable and global financial and legal structures for Research Infrastructures
- Ensuring the human capacity is available and making it attractive for young people
- Interfaces with industry



More is to come

- Implementation of the Roadmap:
some of the projects will be in place already next year
- Strengthening the European Research Area:
Research Infrastructures as major cornerstones
- Continuation of the ESFRI work:
ESFRI encourages constructive debate

धन् यवा
द

Merci

Grazie

Danke

Bedankt

Gracias

Hvala

Kiitos

Tack

Obrigado

Ευχαριστω

Köszönöm

Teşekkür ederim

СПАСИБО

ありがとう

***Many thanks
for your attention***