

FP7 Capacities

Research Infrastructures



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What funds will be available?

- Budget 2007 - 2013 of approximately 2,008 million Euros
- **First call: December 2006**

2007	2008	2009	2010	2011	2012	2013
■	■	■	■	■	■	■

■ Planned calls

Detailed information on calls: www.euresearch.ch/calls

What are the objectives and background of Research Infrastructures?

Objectives

The objective is to provide excellent research infrastructures for the European research community. To achieve this goal, support will be given to optimise the use and development of the best existing research infrastructures, and to help to create new research infrastructures of pan-European interest or major upgrades to existing ones. Top-level and effective infrastructures are needed by the European scientific community to remain at the forefront of research in all fields of science and technology.

Background

Research infrastructures play a key role in the creation of knowledge, in the diffusion of knowledge and its application and exploitation, thus fostering innovation. Access to them is indispensable in all disciplines of research. In the recent past, many research infrastructures have evolved from large facilities (machinery), dedicated almost exclusively to a specific discipline, into service facilities proposed for a broader variety of scientific communities. In the 6th Framework Programme, funded activities already supported an integrated approach, looking for an effective use of the facilities, resources and services offered by single-site infrastructure or by networks of shared infrastructures. Furthermore, enabled by information and communication technologies, recent concepts of infrastructure are also expanding to include distributed systems of hardware, software and contents with an enormous cumulative value as repositories of knowledge in diverse disciplines (e-infrastructure).

The term "Research Infrastructures" in the context of the 7th Framework Programme refers to facilities, resources or services that are needed by the research community to conduct research in all fields. This definition covers and includes the associated human resources (expertise of staff):

- Major equipment or set of instruments used for research purposes;
- Knowledge-based resources such as collections, archives, structured information or systems related to data management, used in scientific research;
- Enabling information and communication technology-based infrastructures such as grid, computing, software and communications;
- Any other entity of a unique nature that is used for scientific research.

www.euresearch.ch/infrastructures



What areas will be funded during FP7 under Research Infrastructures?

Only research infrastructures or networks of research infrastructures with clear interest for the European scientific community (academic, public and industrial), in terms of performance and access, can be considered for support. They must contribute significantly to the development of European research capacities.

Existing research infrastructures

These actions will aim at strengthening European capacities and performance of specific research infrastructures, and increasing user communities' involvement in opportunities offered by research infrastructures. Firstly, the activities will consist of the support of the effective use of facilities, resources and services by research teams through "Transnational Access" to infrastructures. Secondly, they will support the optimisation of the European Research Infrastructures through "integration" of capacities and efforts. Thirdly, e-infrastructure will be consolidated.

- Transnational Access

World-class research infrastructures should be used and exploited by a community of scientific and customer industries as large as possible on a European scale. This action is intended to open new opportunities for research teams to obtain access to the best research infrastructures, including teams from peripheral and outermost regions. This access may be made available to external users, either in person ("hands-on") or by suitable electronic communication. It may also take the form of the provision of remote scientific services. This will be implemented through "bottom-up" calls for proposals open to all fields of science and technology without any preference for one field over another.

- Integrating Activities

The optimisation of the Research Infrastructures needs to be continuously promoted and improved in order to respond to emerging and growing scientific needs. This can be better achieved through the stimulation of their use and development, including upgrades, in a coordinated way. This will be implemented through:

- "Bottom-up" calls to catalyse the mutual coordination and the pooling of resources among infrastructure operators with the aim of fostering a culture of cooperation between them. Such activities should also aim at better structuring the way research infrastructures operate on a European scale, at fostering their joint development in terms of capacity and performance, and at promoting their coherent and cross-disciplinary use;
- "Targeted calls" when such focused actions will be clearly beneficial to support potentially important research infrastructures in the long term, and speeding up their emergence at EU level. They will be implemented in close cooperation with the activities taking place in the thematic areas to ensure that all the actions undertaken

at the European level in the EU framework respond to the needs for research infrastructures in their respective areas.

- ICT based e-Infrastructures

The deployment of *e-Infrastructures* provides services to the research communities based upon complex processes designed to bring the power of distributed ICT based resources (computing, connectivity, instrumentation) to virtual communities. The activities proposed for *e-Infrastructures*, based on targeted calls for proposals, will aim at fostering the further development and evolution of high-capacity and high-performance communication (GÉANT) and grid empowered infrastructures as well as European high end computing capabilities stressing the need to support the reinforcement of world class distributed supercomputing facilities, data storage and advanced visualisation facilities.

Moreover, it will be necessary to support, in a coordinated way, digital libraries, archives, data storage, data curation and the necessary pooling of resources, at the European level, so as to organise the data repositories for the scientific community and future generations of scientists.

New research infrastructures

These actions will help to promote the creation of new research infrastructures or major upgrades to existing ones focusing on "unique" infrastructures with a crucial and pan-European impact for the development of relevant scientific fields in Europe. They will be implemented by Design Studies and Support in their construction.

- Design Studies for new research infrastructures

To promote the creation of new research infrastructures, through a bottom-up approach of calls for proposals, by funding exploratory awards and feasibility studies for new infrastructures.

- Support for construction of New Infrastructures

In order to promote the creation of new research infrastructures, the European Commission will identify priority projects based on the work conducted by the European Strategy Forum for Research Infrastructures (ESFRI, see below). The activity related to the construction of new infrastructures will be implemented in a two stage approach.

The first stage aims at supporting the preparatory phase and will involve the finalisation of the detailed construction plans, the legal organisation, the management and multi-annual planning of the forecasted research infrastructure and the final agreement between stakeholders. The second stage aims at supporting the construction phase, building on the achieved technical, legal, administrative and financial agreements, and using the complementarity between national and community instruments (such as the Structural Funds or the European Investment Bank).



ESFRI priority list for the construction of New Infrastructures

- Facility for Antiproton and Ion Research (FAIR)
- Facility for intense secondary beams of unstable isotopes (SPIRAL II)
- European deep-sea neutrino telescope (KM3NeT)
- Extremely Large Telescope (ELT) – for optical astronomy
- Pan-European Research Infrastructure for Nano-Structures (PRINS)
- European Spallation Source (ESS) – neutron source
- European XFEL – for hard X rays
- IRUVX FELs Network – from infrared to soft X rays
- ESRF upgrade – synchrotron
- High Performance Computer for Europe (HPCEUR)
- Marine vessel for coastal research – essentially Baltic Sea
- Research Icebreaker Aurora Borealis
- European Multidisciplinary Seafloor Observatory (EMSO)
- European infrastructure for research in, and protection of, biodiversity
- Advanced infrastructure for brain and whole body imaging
- Bio-informatics infrastructure for Europe
- European network of advanced clinical research centres
- European network of bio-banks and genomic resources
- High security laboratories for emerging diseases and threats to public health
- Infrastructure for functional analysis of a whole mammalian genome
- Model testing facilities for biomedical research
- European Research Observatory for the Humanities and Social Sciences (EROHS)
- European Social Survey (ESS) “Global projects”
- ITER
- International Space Station (ISS)
- International Linear Collider (ILC)
- Square Kilometer Array (SKA) – radio telescope
- International Fusion Materials Irradiation Facility (IFMIF)

www.euresearch.ch/infrastructures

What other areas of FP7 might I apply for?

- All nine research priorities, in related infrastructures topics: www.euresearch.ch/cooperation
- Funding of Host fellowships: www.euresearch.ch/people

www.euresearch.ch/infrastructures



What key stakeholders should I be aware of?

- European Strategy Forum for Research Infrastructures (ESFRI)
- European Intergovernmental Scientific Research Organisations (EIROforum)
- European Investment Bank

www.euresearch.ch/infrastructures-key

How do I find partners, for example, to join a consortium?

Find partners by:

- Contacting researchers of infrastructures/private industries you know personally
- Attending conferences and events
- Searching the project databases of former successful EU projects
- Reading about the experiences of others who have obtained EU funding
- Screening the presentations made during the events organized by DG INFOSO for by each call for each strategic objective of ICT
- Contacting members of the ESFRI working groups

www.euresearch.ch/partnersearch

What other information could be helpful?

Key documents

- Towards New Research Infrastructures for Europe: the ESFRI “List of Opportunities”, March 2005, <http://cordis.europa.eu/esfri/>
- E-infrastructures reflection group, report: <http://www.e-irg.org/>

Key websites

- Research Infrastructures on Cordis Website <http://www.cordis.lu/infrastructures/>
- Research Infrastructures on Europa Website http://ec.europa.eu/research/infrastructures/index_en.htm
- European Strategy Forum for Research Infrastructures (ESFRI): <http://cordis.europa.eu/esfri/>
- ESFRI working Groups: <http://cordis.europa.eu/esfri/rwg.htm>
- Infrastructure Policy Documents <http://www.cordis.lu/improving/infrastructure/policy.htm>

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