European Research Infrastructures
Framework Programme 7

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European Commission
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FP7 2007 –2013
Specific Programmes

- ***Cooperation*** **– Collaborative research**
- ***Ideas*** **– Frontier Research**
- ***People*** **– Marie Curie Actions**
- ***Capacities*** **– Research Capacity**

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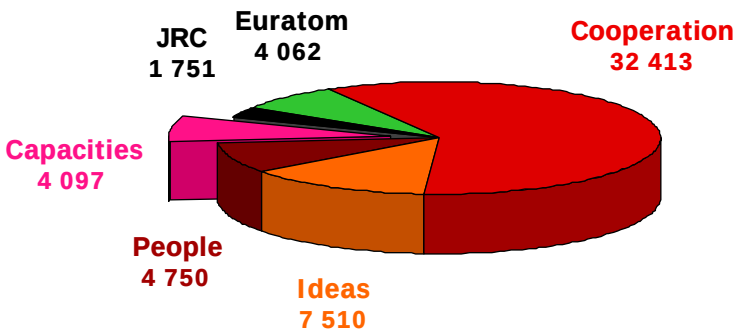
- **JRC non-nuclear research**
- **JRC nuclear research**
- ***Euratom***

The Seventh Framework Programme: 2007 - 2013



FP7 budget (M€)
Revised FP7 agreed by Council + Parliament in October 2006

FP7 versus FP6

- Significant increase of budget
- Increase in duration
- 4 Specific Programmes
- European Research Council
- Evolution, no revolution
- Simplification

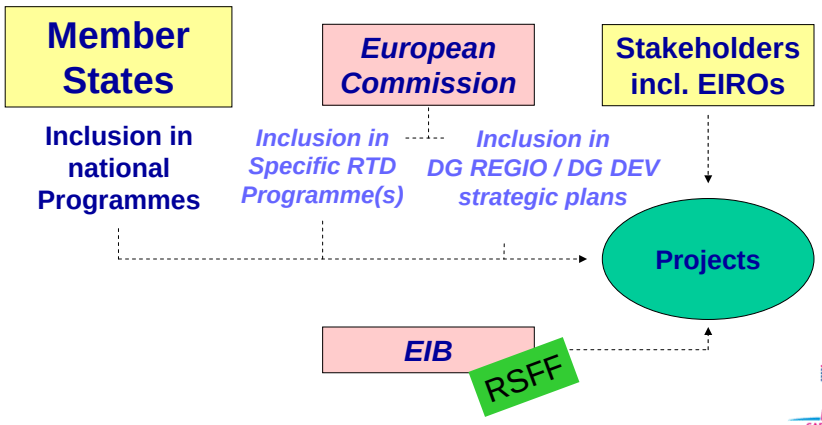
The Community Research Infrastructures action

- **"Research infrastructures" refers to facilities, resources and related services used by the scientific community for leading edge research**
  - ➔ **Major scientific equipment**
  - ➔ **Scientific collections, archives and structured information**
  - ➔ **Entities (of unique nature) used for research**
  - ➔ **ICT-based infrastructures**
  - ➔ **Can be single-sited, distributed, virtual**

Objectives of the Community Research Infrastructures action

- **Optimising the use and development of the best existing research infrastructures in Europe (e.g. smart grids?)**
- **Helping to create in all fields of S & T new research infrastructures of pan-European interest needed by the European scientific community**
- **Supporting programme implementation and policy development (e.g. international cooperation)**

The role of the Community Research Infrastructures action



FP7 Research Infrastructures in brief

Existing Infrastructures	New Infrastructures
Integrating activities	Design studies
e-infrastructures	Construction (preparatory phase; construction phase)
Policy Development and Programme Implementation	

ESFRI Roadmap

FP7 Support to existing Research Infrastructures

- **Integrating Activities** to promote the coherent use and development of research infrastructures in a given field, ***implemented through:***
  - ➔ **A bottom-up** approach for proposals open to all fields of science
  - ➔ **Targeted** approach with topics defined in cooperation with the FP7 thematic areas

580 M€ 2007-2013

- **ICT based e-infrastructures** in support of scientific research

420 M€ 2007-2013

FP7 Support to new Research Infrastructures

- **Design studies**: to support the conceptual design for new facilities or major upgrades, of clear European dimension and interest
  - ➔ through bottom-up calls

70 M€ 2007-2013

- **Support to the Construction of new infrastructures and major upgrades** to existing ones
  - ➔ Preparatory phase
  - ➔ Construction phase

530 M€ 2007-2013

FP7 Support actions

- **A mixed bottom-up / top down approach, for:**
  - ➔ **the development of an RI European policy and the development of international cooperation**
  - ➔ **Supporting programme implementation (NCPs) and the coordination of research infrastructures in emerging areas**
- **Activities:**
  - ➔ **ERA-nets**
  - ➔ **Conferences**
  - ➔ **Studies**
  - ➔ **Networking of NCPs**

65 M€
2007-2013

First call for proposals: new Research Infrastructures

- **For design studies, preparatory phase, and support actions**
  - ➔ **design studies: 35 M€**
  - ➔ **Support actions: 28 M€**
- **Indicative budget for preparatory phase:**
  - ➔ **34 projects**
- **Closure: 2nd May 2007**
- **First contracts to come into force before end 2007**

130 M€

First call for proposals ctnd.

- Design studies
  - ➔Design and feasibility of a new research infrastructure
  - ➔Technical work, organization, logistics,...
- Preparatory phase:
  - ➔Call limited to 34 projects on ESFRI list (member states commitment)
  - ➔Work comprises all activities that lead to a start of the construction at the end of the PP-project
  - ➔Projects have often been design studies in FP6
- At least 3 member states or associated states

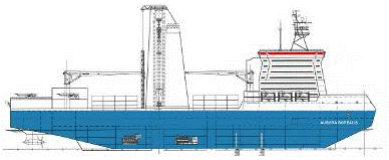
What is ESFRI?

- The European Strategy Forum on Research Infrastructures
- Brings together representatives of EU Member States, Associated States, and EC
- To discuss the long term vision at European level and to support the development of a European RI policy
  - ➔Open method of coordination

The ESFRI Roadmap

- Addressing 7 fields of Research and major challenges
- From about original 200 proposals, thirty five (35) projects have been identified through several review stages
- 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

The ESFRI Roadmap for Environment



AURORA BOREALIS

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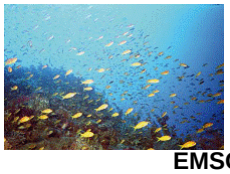
EUFAR

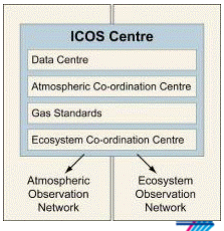
7 Projects

EURO-ARGO



EMSO

LIFEWATCH



ICOS

Second call for proposals for existing Research Infrastructures

- **Project type: Integrating Activity**
- **Indicative budget of 275 M€**
  - ➔ **25 to 30 projects to be selected**
- **Closure: spring 2008**
- **Single stage procedure for evaluation**
  - ➔ **remote + panel evaluation**
- **Results within 4 months after closure date**
- **First contracts will come into force before the end of 2008**

No competition within one field of science!

Objectives of an Integrating Activity project

Structure better and integrate, on a European scale, the way research infrastructures operate and develop, in a given class:

- ➔ **By opening and optimising the access to and the use of the existing research infrastructures in the different Member States and Associated States**
- ➔ **By better structuring and integrating, on a European scale, the operation(s) of research infrastructures, and by fostering their joint development (qualitative and quantitative)**

Main characteristics of an Integrating Activity

- Collaboration of existing research infrastructures in a given field of science
  - → Ideally all major RI's in Europe in one field
  - → At least 3 member states or associated states
- 3 types of activities obligatory in one project
  - → Networking Activities
  - → Trans-national Access
  - → Joint Research Activities
- Project type: combination of collaborative project + coordination and support actions

An average Integrating Activity in FP 6

- Average number of contractors: 19 of which 7 are offering access (in FP6)
- Typical duration of 4 years
- Average EC contribution: ~10 M€
  - → Management: ~ 6%
  - → Networking Activities: ~ 15%
  - → Trans-national Access: ~ 36%
  - → Joint Research Activities: ~ 43%
- List of funded projects (FP6)
  http://cordis.europa.eu/infrastructures/projects.htm

Example: IA-SFS (Physics)

developing a pan-European Synchrotron and FEL infrastructure

EC contribution: 27 M€

TA (~19 M€):
- 15 installations, with 4000 users from a very broad spectrum of disciplines

NA (~2 M€):
- Specialized workshops, conferences and schools (support areas of transnational cooperation)
- Exchange of scientists

JRA (~6 M€):
- European platform for Protein Crystallography
- Development of:
  - Photo-injector for X-ray Free Electron Lasers
  - Instrumentation for Femto-second Pulses
  - Diffractive x-ray optics
  - Superconducting Ondulator

Example: EUSAAR (Environment)

Developing a pan-European research infrastructure for the measurements of atmospheric properties

EC contribution: 5.1 M€

TA (~0.2 M€):
11 ground-based stations for atmospheric research

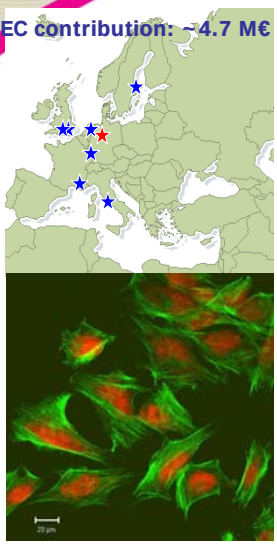
NA (~3.2 M€):
- Standards and exchange of good practices on sampling, measurement and analysis of aerosol parameters
- Training on aerosol sampling and measurements
- Web portal and Database on aerosol products

JRA (1.7 M€):
- Methodology for determining aerosol optical density
- Standard procedures for aerosol hygroscopic growth determination
- A real time data collection of aerosol measurements

➢**A network of research stations exploiting the diversity of regional backgrounds**

Example: EUPRIM-Net (Biomedical Sciences)

EC contribution: ~4.7 M€



Developing a pan-European research infrastructure of primate centres

TA (~1.3 M€):
- Gene, tissue, cell, gamete and serum banks
- Experimental animals

NA (~1.7 M€):
- Standards (SOPs for quarantine and experiments)
- Training on handling (blood sampling, injections…)
- Courses and textbook (primate behaviour, husbandry, nutrition…)

JRA (~1.7 M€):
- Molecular typing methods
- Pathogen detection assays
- Telemetry prototyping

➢**Refinement, Reduction, Replacement**

Integrating Activities in FP7

- **Bottom up approach for all fields of science (as in FP6)**
- **New: targeted approach with topics defined in a priority setting process**
  - ➔**Topics are complementary to R&D topics under the Cooperation Programme**
  - ➔**to help develop research infrastructures for European R&D needs**
  - ➔**To create synergies and ensure consistency with the Cooperation Programme**
  - ➔**To stimulate RI actions in specific fields that are currently not well covered**

Priority topics for RI's under the targeted approach

- Health (6)
- Food, Agriculture and Biotechnology (4)
- Information and Communication Technologies (3)
- Nanosciences, Nanotechnologies and Materials (2)
- Energy (5)
- Environment (4)
- Transport (2)
- Socioeconomic Sciences and Humanities (4)

➔ 30 priority topics for RI's in 8 fields of R&D

Priority topics for RI's under the targeted approach

- **Example Environment:**
  To bring together existing research infrastructures
  - European e-infrastructure on earth system's understanding and modeling
  - For seismic engineering research and testing infrastructures
  - For establishing an efficient network on hydrological observatories,..., for water resources research
  - Integrating, for efficient polar research, existing observatories and monitoring stations ...

Priority topics for RI's under the targeted approach

- **Example Energy:**
  To bring together existing research infrastructures
  - **Aiming at the development of next generation bio-fuels**
  - **Integrating European testing and analysis RI for hydrogen and fuel cells**
  - **For ocean energy research**
  - **For concentrating solar power research**
  - **For research on Smart Energy networks**

Synergies Cooperation Programme and targeted RI activities: one Example

- **Priority topic for RI:** ***To bring together existing research infrastructures for research on Smart Energy networks***
- **Link with the Cooperation programme:** ***Smart Energy networks, Activity Energy 2007.7 .1 – 7.3***
- **Typical existing RI relevant to the topic:** **EdF, France; ISET Test and certification Centre for Modular System Technology, D; CEA/CENEC/LSEC Laboratory for storage technologies, FR; T&D Consulting / High Power and high voltage laboratories, NL; Arsenal Research, Austria;...**

Planning of calls and indicative budget

Total operational budget 1665 M€	*Call 1 2007*	*Call 2 2007*	*Call 3 2008*	*Call 4 2008*	*Call 5 2010*	*Call 6 2012*
Integrating activities			270		x	x
e-Infrastructures	42	50		113	x	x
Design studies	35				x	
Construction – Support to the Prep. Phase	130				x	
Construction – Support to the Impl. Phase	RSFF (200 M€) + 130 M€					
Policy Development and Programme Impl.	14	14	5		x	x
Total per call (M€)	221	64	275	113		

… in summary, an improved FP7 action for Research Infrastructures

- An increased budget for FP7 (+30%)
- Better consistency within FP7 (targeted calls)
- Tackling better fragmentation (Integrating Activities)
- Catalysing effect towards the construction or major upgrade of Research Infrastructures
- A vision for the next 10-20 years fostering capacity building and excellence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Community research
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For more information see
http://cordis.europa.eu/fp7
CAPACITIES