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European Research Infrastructures Framework Programme 7



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European Commission
15.3.2007





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FP7 2007 –2013 Specific Programmes

Cooperation – Collaborative research

Ideas – Frontier Research

People – Marie Curie Actions

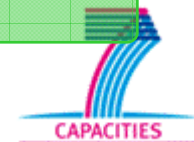
Capacities – Research Capacity



JRC non-nuclear research

JRC nuclear research

Euratom

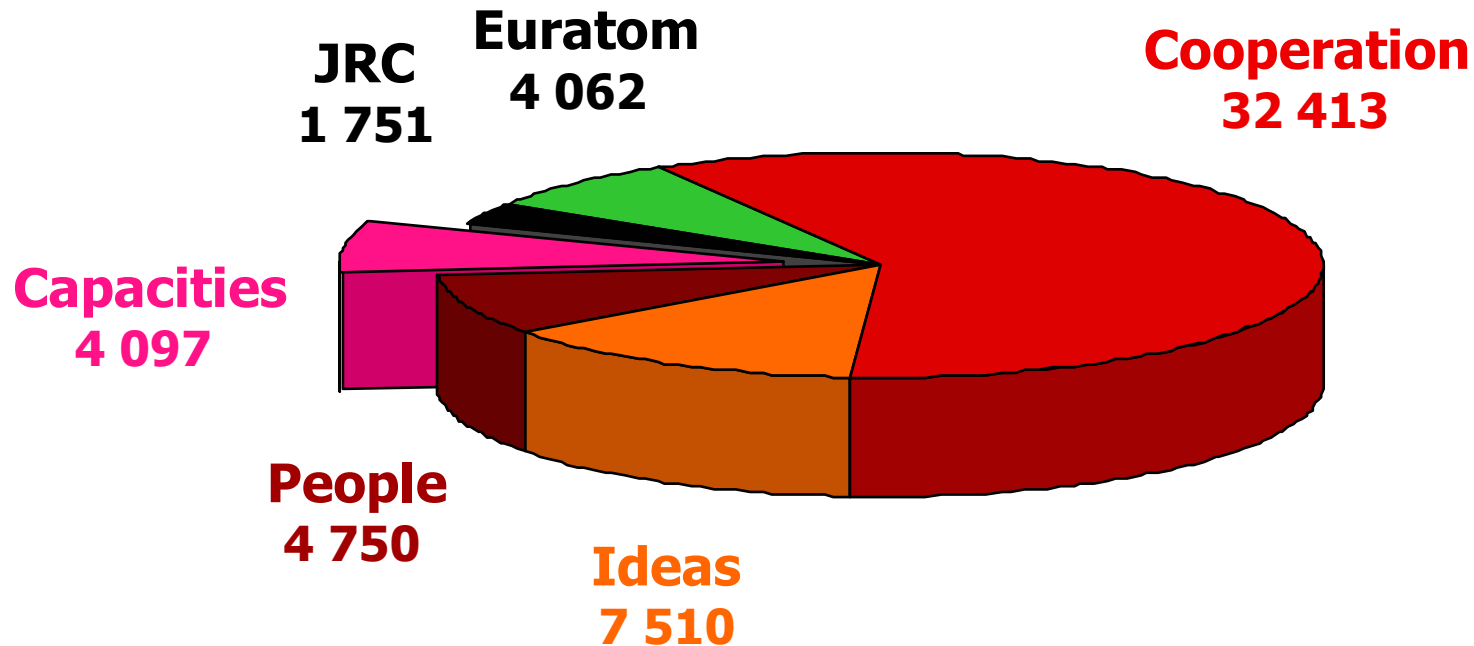




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The Seventh Framework Programme: 2007 - 2013



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





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FP7 versus FP6

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





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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





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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)

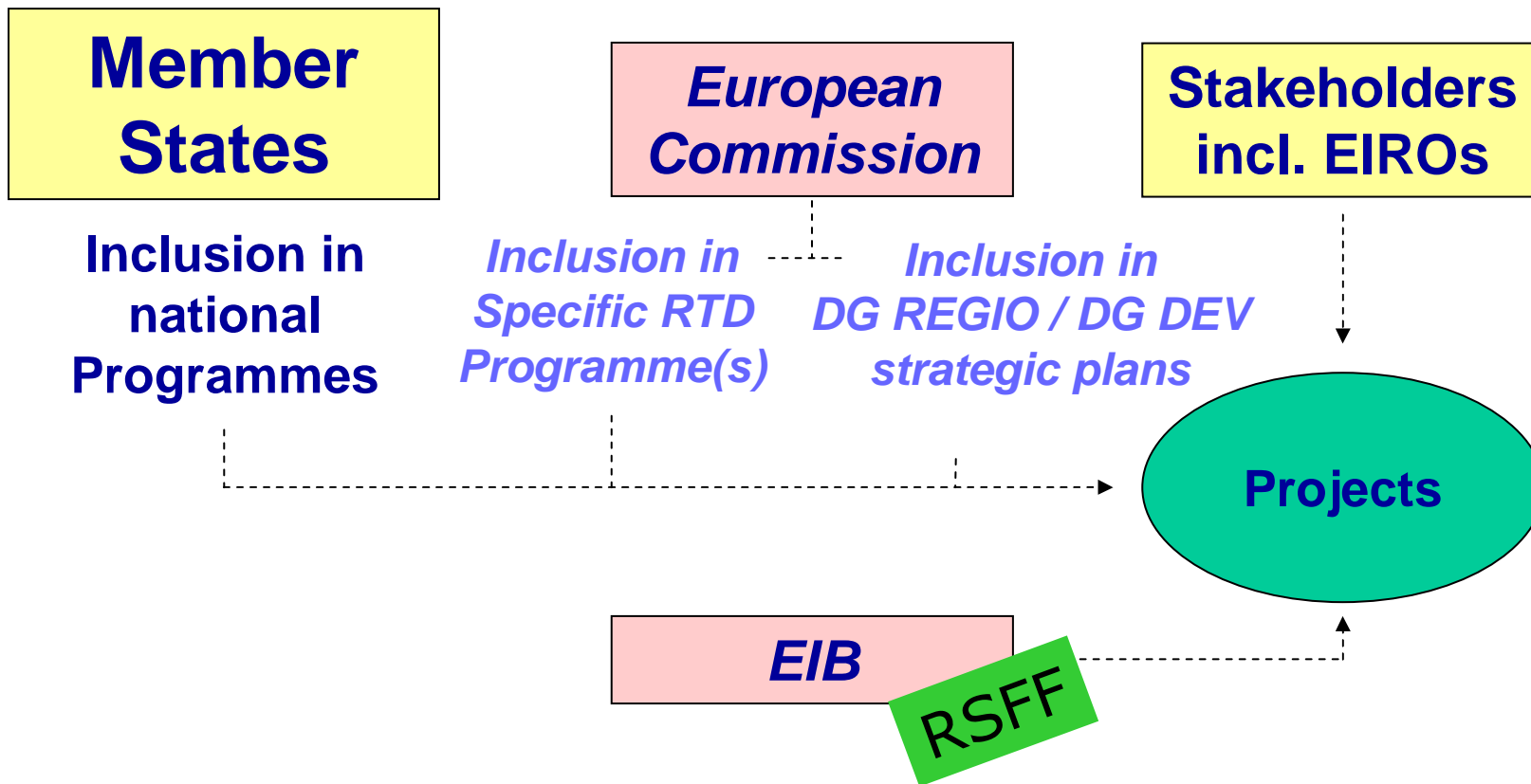




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The role of the Community Research Infrastructures action

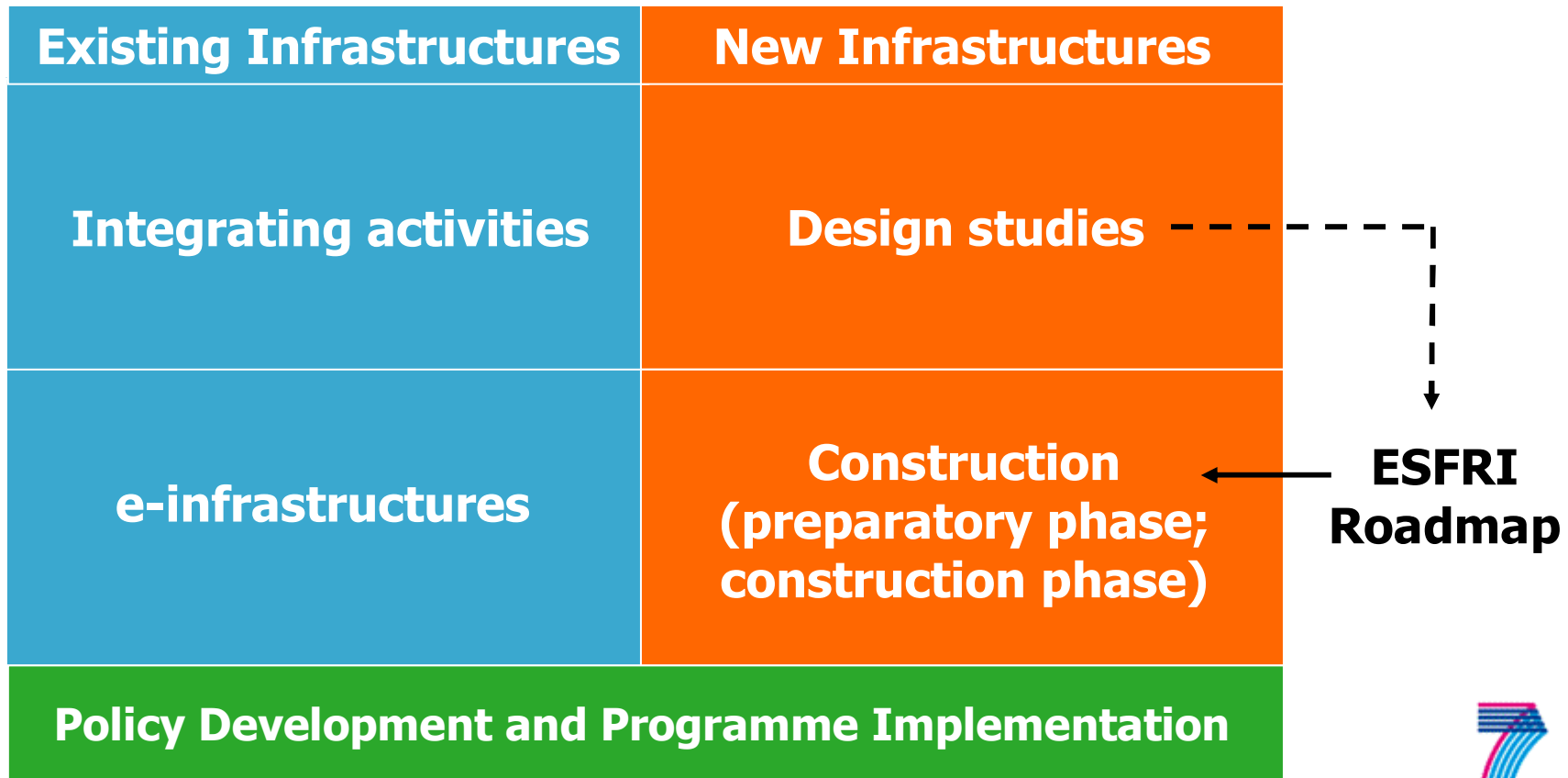




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FP7 Research Infrastructures in brief





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

580 M€
2007-2013

420 M€
2007-2013





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

70 M€
2007-2013

530 M€
2007-2013





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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





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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€





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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**





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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**





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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**

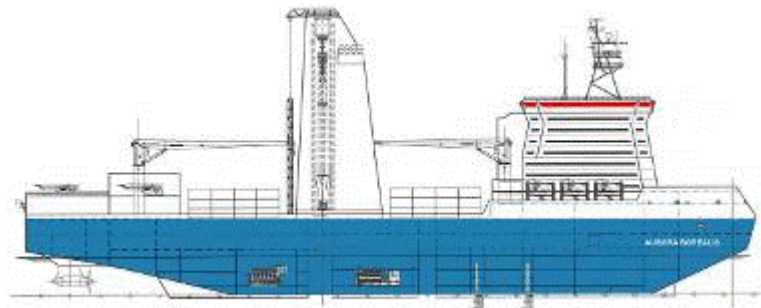




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The ESFRI Roadmap for Environment



AURORA BOREALIS



IAGOS-ERI



EUFAR



EURO-ARGO

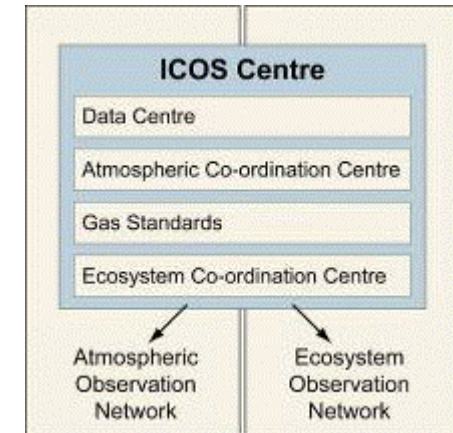


EMSO



LIFEWATCH

7 Projects



ICOS





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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!





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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)





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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





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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>





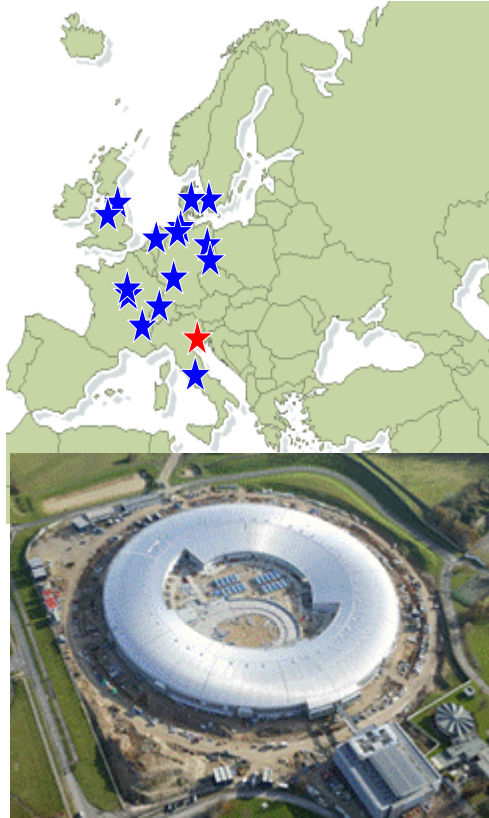
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Example: IA-SFS (Physics)

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 Undulator

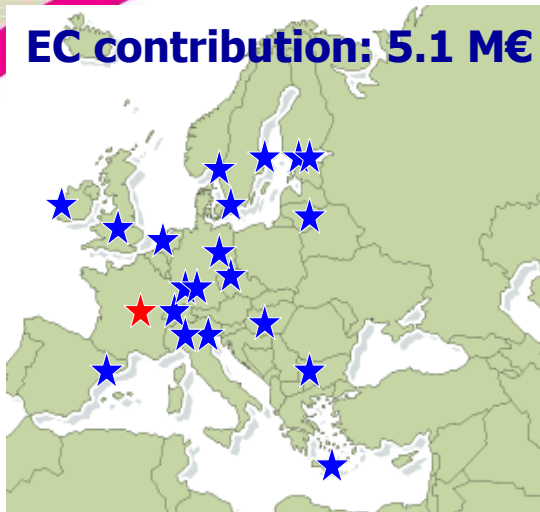




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EC contribution: 5.1 M€



Example: EUSAAR (Environment)

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

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**



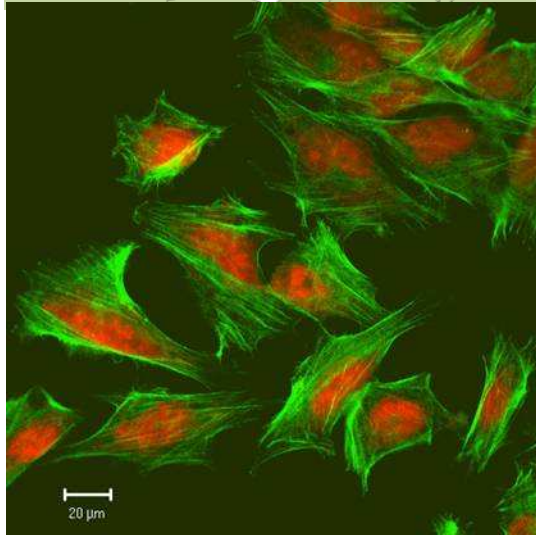
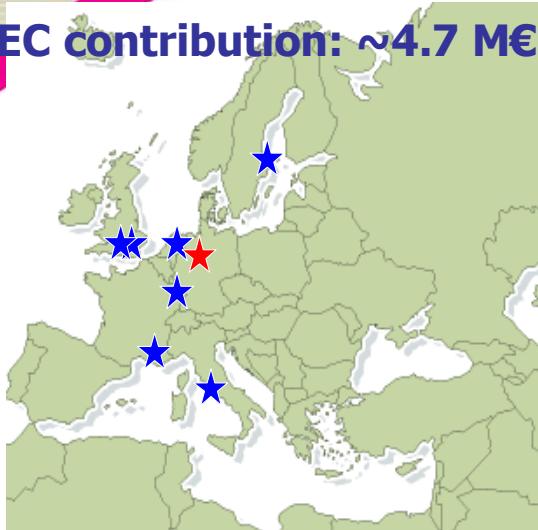


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Example: EUPRIM-Net (Biomedical Sciences)

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**





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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**





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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**





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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 ...**





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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**





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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		





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... 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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Thank you for your attention

For more information see

<http://cordis.europa.eu/fp7>

