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Community research

Research Infrastructures within



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European Commission
Research Infrastructures

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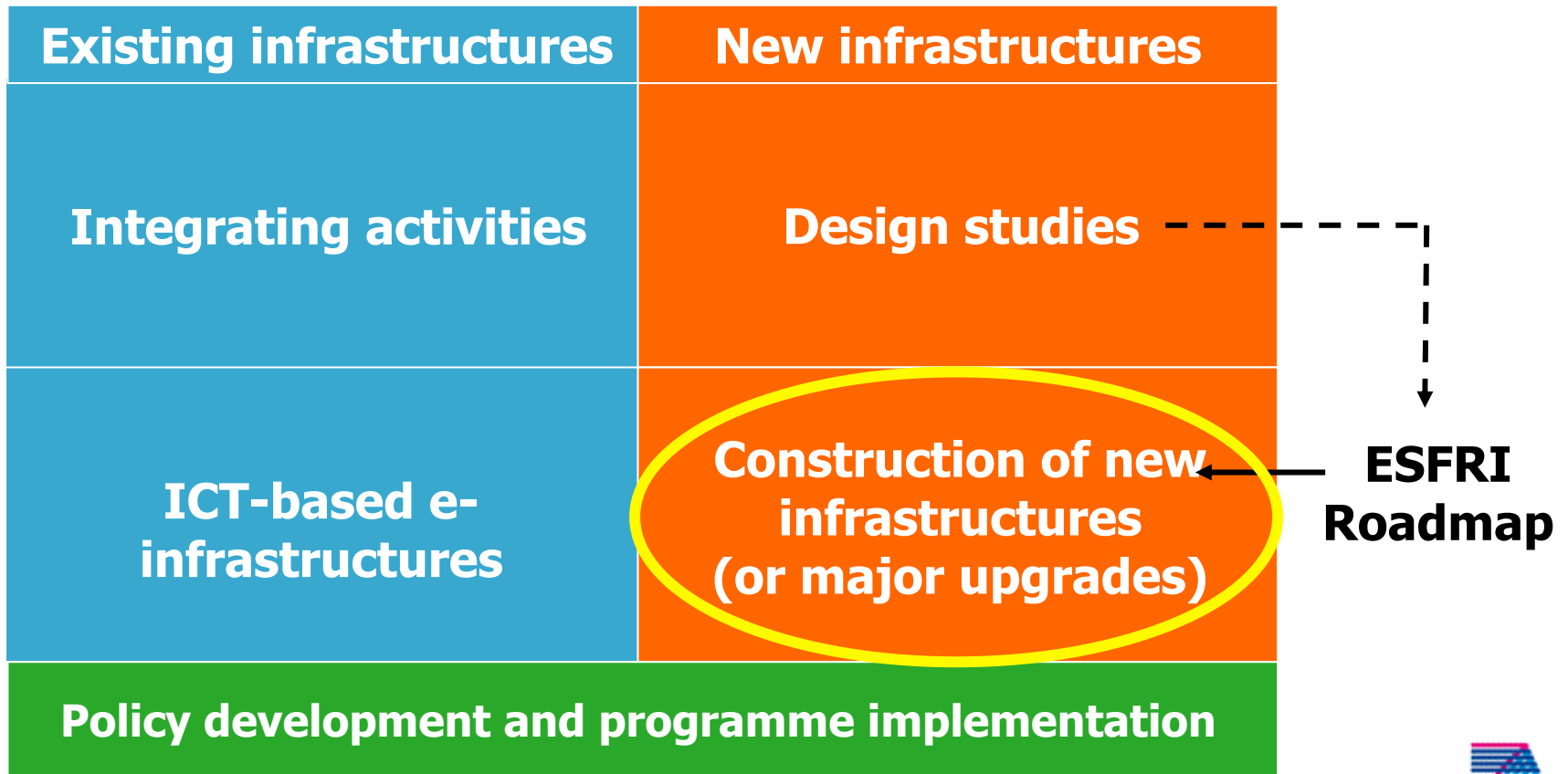


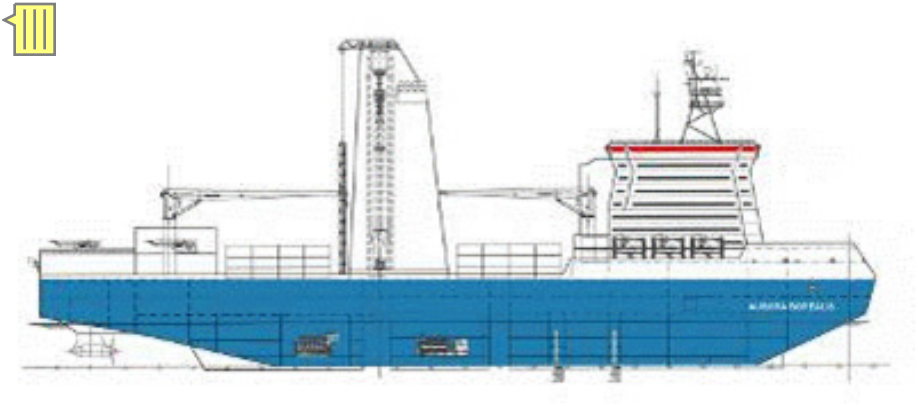
Objectives of the Community Research Infrastructures action

- Optimising the use and development of the best **existing research infrastructures** in Europe
- 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)



FP7 Research Infrastructures activities





Definition of Research Infrastructures

- **Facilities, resources, and related services used by the scientific community for**
 - **Conducting leading-edge research**
 - **Knowledge transmission, knowledge exchanges and knowledge preservation**
- **Includes**
 - **Major scientific equipment**
 - **Scientific collections, archives and structured information**
 - **ICT-based infrastructures**
 - **Entities of a unique nature, used for research**





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





FP7 will support the design of new research infrastructures (or major upgrades)

- **Design studies** aiming at the conceptual design for new infrastructures with clear European dimension and interest, not at a detailed design
- **Case of e-Infrastructures:** to foster new organisational models in domains of grids & data
- **EC support** likely to be smaller than under FP6, i.e. less than 5 M€
- **bottom-up** call...
- Useful to feed the ESFRI roadmap process



FP7 will support the construction of new Infrastructures (or major upgrades)

- The list of projects to be supported will be based on the work conducted by **ESFRI**
- A two-stage process:
 - The **preparatory phase**: to check the commitment of the Member States and reach a **(draft) agreement** between Member States and stakeholders for the construction
 - The **implementation phase**: the actual construction



Support to new research infrastructures

... and major upgrades to existing ones, means:

→ **Support to the preparatory phase**
mainly based on the work conducted by ESFRI

230 M€
2007-2013

→ (in addition) support to RSFF

200 M€
2007-2013

→ (limited) available resources to
support the construction

100 M€
2007-2013



Construction of new infrastructures (or major upgrades)

- ***stage 1 - support to the preparatory phase***
(legal organisation, management structure, financial planning...)
- ***stage 2 - support to the implementation phase***
(the actual construction)
 - ☞ **Only for projects which have sufficiently progressed in the preparatory phase**
 - ☞ **Mainly to be supported by Member States**
 - ☞ **EC financial support limited to cases where there is a critical need for such support**



Stage 1

- Preparatory Phase

- First call for proposals

- Targeted to projects identified in the 2006 ESFRI roadmap
- Call budget: 130 M€
- EC financial contribution: within the range 1-7 M€ ; average ~ 4 M€
- Contract duration: 1 to 4 years



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Stage 1 - Preparatory Phase - Purpose

- ➡ **To provide a framework facilitating decision-making between partners from different countries**
- ➡ **To address all the critical issues (legal, financial,..) that need to be resolved**
- ➡ **To conclude an “agreement” between the funding parties and other partners involved allowing project to move forward**
- ➡ **Limited to the ESFRI « mature » projects**





Stage 1

- Preparatory Phase What can be done (1) ?

- **Work expected to focus on**
 - ✓ **legal,**
 - ✓ **financial,**
 - ✓ **governance and**
 - ✓ **strategic issues****needed to make the project a reality**
- **Technical work to the extent necessary to reach an agreement. Cannot be the core of a project.**



What can be done (2) ?

Strategic work, e.g.

- **Plans to integrate the new RI in the EU fabric of related facilities,**
- **Creation and consolidation of centres of excellence,**
- **Identification of the best possible site,**
- **Planning of research services to be provided at international level, etc.**



What can be done (3) ?

Governance and logistic work, e.g.

- Plans in terms of decision making, management structure, advisory bodies, IPR, access rule,
- Planning of staff recruitment,
- Organisation of researchers support, etc.

Legal work, e.g.

- Any development needed for the construction and/or operation of the new RI
- ...



What can be done (4) ?

Technical work, e.g.

- Draft engineering plans for construction,
- Final prototypes,
- Implementation plans for technology transfer,
- New processing protocols, software, etc.

Financial work, e.g.

- Financial arrangements for construction, operation and decommission of the facility
- Organisation of researchers support, etc.



Who are the participants (1)?

- **Consortia should involve all stakeholders to make the project a reality**
 - ☞ **e.g. ministries, governments, research councils, funding agencies from interested countries + as appropriate, research centres, universities, industries, ...**
- **Minimum 3 participants from 3 Member States or Associated States**



Who are the participants (2) ? How to manage ?

- **Open to participants from third countries**
- **Possibility for new participants to join at later stage**
- **Coordinator to act as a « team builder »**
- **The EC will act as a “facilitator”**



Preparatory Phase Summary

Activities

- 👉 **Legal, financial, governance, strategic work**
- 👉 **Limited technical work**

Final deliverable(s)

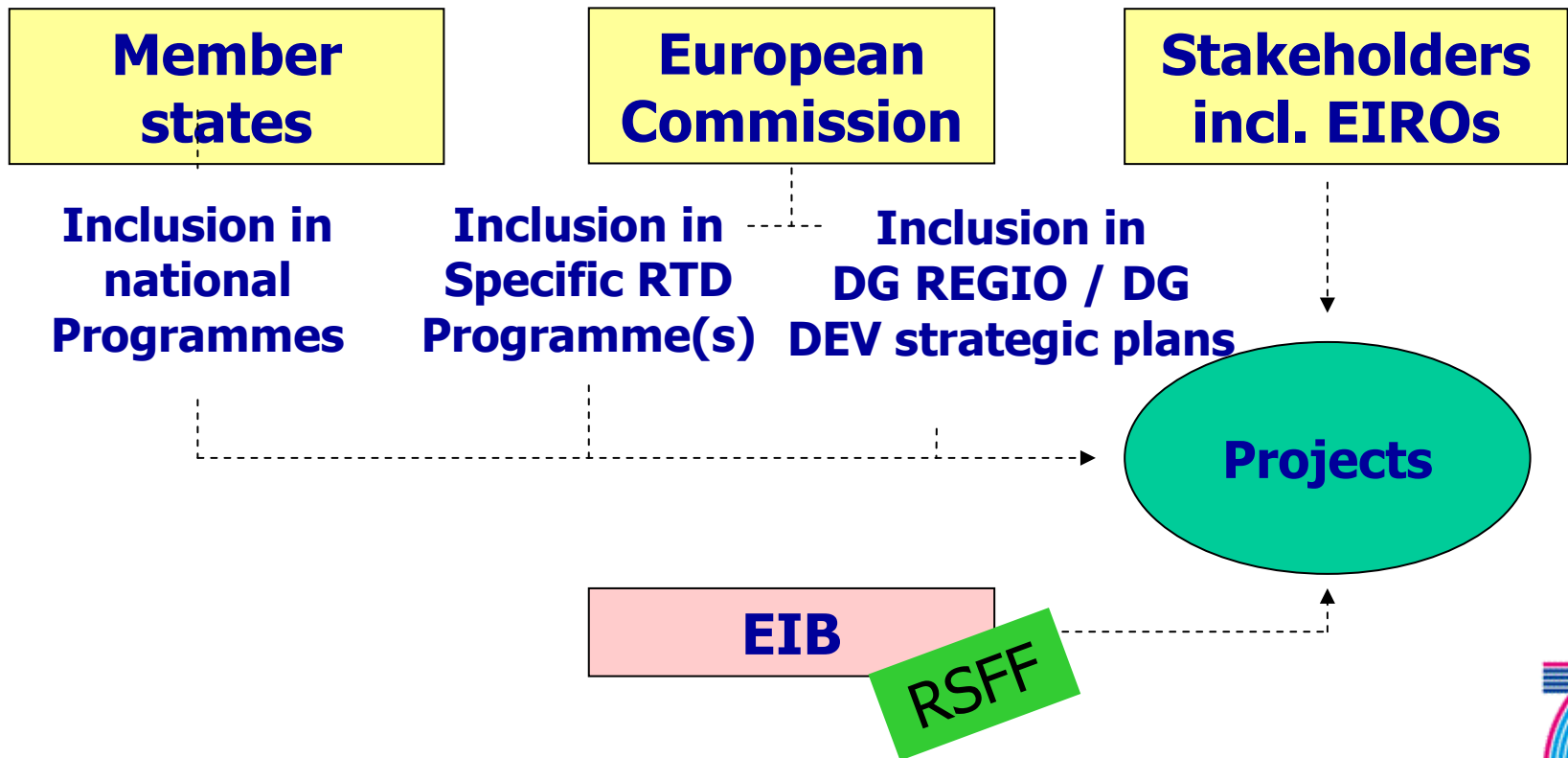
- 👉 **Agreement between the partners of countries involved allowing the project to move forward**
- 👉 **Implementation plan for the construction phase**

Participants

- 👉 **All the stakeholders necessary to make the projects a reality**



Preparatory Phase facilitating financial engineering for new research infrastructures





ESFRI PREPARATORY PHASE PROJECTS 7 Key Points

- **1 Proposal per topic**
- **Coordinator = team builder, not necessary COO of construction**
- **Participation of Ministries, Funding Agencies encouraged (min. 3 from 3 different MS and/or Ac)**
- **Roadmap projects not guaranteed to be EC financed**
- **PP projects not focussed on R&D**
- **National authorities to explore Structural Funds opportunities**
- **Possibility to accept additional participants**
« on the road »



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How to present a proposal for the preparatory phase (PP)

REMEMBER: PP is Neither a feasibility Nor a design study





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Support for Preparatory Phase Important dates

- ***Date of publication Dec. 22, 2006
in Official Journal***
- ***Detailed information to be found on Cordis***
- ***Deadline for submission May 2, 2007***
- ***Evaluation week: End of June 2007***
- ***Evaluation by scientists and policy experts***
- ***First contracts to come into force
before end 2007***





Guide for applicants

- **Core text – for FP7 as a whole**
- **Annexes with call-specific information**
 - ✓ *Annex 1: summary call information*
 - ✓ *Annex 2: evaluation criteria and procedures to be applied for this call*
 - ✓ *Annex 3: instructions for completing "part a" of the proposal*
 - ✓ *Annex 4: instructions for drafting "part b" of the proposal*



How to present a Proposal ?

A « standard » Format based on the three (here under reminded) criteria should be used to allow a fair evaluation

1: S&T quality

2: Implementation

3: Impact

Hearings might also be organised !





Evaluation criteria

Criterion 1: S&T Excellence

- *Facility offering world-level service to users*
- *Contribution to scientific European excellence*
- *Effectiveness of associated coordination mechanisms & work plan*



Evaluation criteria

Criterion 2: Quality and efficiency of Implementation and Management

- *Appropriate management structure, procedures*
- *Quality of the partnership*
- *Appropriate allocation & justification of resources*



Evaluation criteria

Criterion 3: Impact

- ***Contribution to the realisation of the RI: addressing critical questions still unresolved***
- ***Contribution to: technological development capacity; attractiveness of the ERA; balanced territorial development; reinforcing research-based clusters of excellence***
- ***Added value, i.e. catalytic–leveraging effect of EC involvement***





First call for proposals closing in spring 2007

- **For design studies, preparatory phase, and support actions**
 - **design studies: 35 M€**
 - **Support actions: 28 M€**
(budget 2007-2008)
- **Indicative budget for preparatory phase:**
 - **34 projects** *(budget 2007-2008)*
- **Closure: 2nd May 2007**
- **First contracts to come into force before end 2007**

130 M€



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





Integrating Activities and e-infrastructures

- **To optimise the use and development of existing research infrastructures**
- **Based on the continuation of the successful FP6 instrument “**Integrated Infrastructure Initiative**” (I3s)**
- **Within one single contract:**
 - ➔ **Networking activities**
 - ➔ **Transnational access and/or service activities**
 - ➔ **Joint research activities**



Networking Activities

- To foster a culture of **co-operation** between the participants and the scientific communities benefiting from the research infrastructures
- Forms of activities:
 - ➔ Towards **the users**: training, studies, feedback, coordination...
 - ➔ Towards **good practice**: exchange of personnel and visits, standards and quality...
 - ➔ Towards **virtual infrastructures**: Web-sites, common softwares, databases, data management...
 - ➔ **Technical workshops**, forums, working groups and studies...



Trans-national Access and/or Service activities

- Provide **trans-national access** to researchers or research teams to one or more infrastructures among those operated by the participants
 - "Hands on" access
 - **Remote** access: sending of samples, sample analysis...
Managed by the contractors
- Provide research infrastructures related **services** to the scientific community
 - Remote access to distributed infrastructures
 - Services provided through **electronic means** ; Data and resources management
 - Upgrading **communication** infrastructure
 - Support of **Grid** infrastructure; support of **middleware** component repositories





Joint Research Activities

- **Explore new fundamental technologies or techniques underpinning the efficient and joint use of the participating research infrastructures**
To improve the services provided by the infrastructures (in quality and/or quantity)
- **Forms of activities:**
 - **Prototype** development
 - Development of **methods, protocols, standards...**
 - Development of **software**, middleware, algorithm; Database creation, upgrade, curation...
 - Development and **curation** of samples



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)**



Participation

- **At least 3 independent legal entities established in 3 different Member States or Associated States. At least 1 of these legal entities must operate a research infrastructure providing access**
- **Operators of research infrastructures, universities and other public research organisations as well as industry, for example equipment manufacturers**



Main characteristics of an average Integrating Activity under FP6

- **Average number of contractors: 19 of which 7 are offering access**
- **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>



EC contribution: ~8.7 M€

ESTEEM (Nano Sciences)

Distributed European Infrastructure of Advanced Electron Microscopy for Nanoscience

TA (~2.8 M€):

- To open the major microscopy centres (Antwerp, Cambridge, Delft, Dresden, Orsay, Oxford, Stuttgart, Toulouse) together with their expertise to scientist from Member States or Associated States

NA (~2.2 M€):

- To spread electron microscopy across the community and to regions where the technique is not fully exploited at present and where it will help stimulate economic growth
- To inform solid state scientists and engineers in Europe about new developments in this increasingly complex technique
- To improve the collaboration between different laboratories and set consistent standards for measurements



ESTEEM (Nano Sciences)

Distributed European Infrastructure of Advanced Electron Microscopy for Nanoscience

EC contribution: ~8.7 M€

NA (cont.):

- To establish a shared hardware and software infrastructure and to develop open access standards for data exchange, storage and instrument control
- To offer remote access to the most advanced instruments

JRA (~3.7 M€):

- To improve three dimensional imaging of nanoparticles down to the sub-nano-meter, and possibly atomic, scale
- To push the limits of chemical and electron-nano-structured materials
- To develop improved detection in electron microscopy for rapid acquisition of images and spectra
- To develop tools for nano-manipulation experiments inside the electron microscope and apply these tools for the study of dynamic systems





Implementation of the Integrating Activities under FP7

- **Bottom up approach for proposals in all fields of science (successful in FP6, to be continued in FP7)**
- **Targeted approach for clearly defined infrastructure needs for Europe, coordinated with the thematic priorities (new)**

→ **FP7 Call N°3 (closing May 2008)**





What is the targeted approach?

- **For existing Research Infrastructures**
- **A list of topics for classes of infrastructures to be supported, listed in the work programme**
- **Topics defined in line with the Cooperation Programme**
 - Revisions of topics: list can be amended
 - **A sufficient basis of RI's to be networked**
- **Complementary to other FP7 funding schemes used in the thematic priorities (Collaborative Projects, NoE's)**





Why a targeted approach?

- **To help integrating research infrastructures for European R&D needs, defined in a priority setting process**
- **To create synergies and ensure consistency with the Cooperation Programme**
 - **Topics are in line with R&D topics under the Cooperation Programme**
- **To stimulate RI actions in specific fields that are currently not well covered under our actions**



How will it work?

- **Bottom up and targeted approaches will be under the same calls**
- **Same Project type for both approaches:**
 - ➔ **Integrating activities: I3s with Transnational Access/Service, Networking, Joint Research activities**
- **Same evaluation procedures (by independent experts), criteria, forms...**



Possible topics for RI's under the targeted approach

→ About 30 priority topics for RI's in 8 of the "Cooperation" thematic areas

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



Synergies that can be expected: one Example

- **Priority topic for RI:**

To bring together existing research infrastructures to support the efficient provision of essential research services, including but not limited to the characterization, exposure and toxicology (human and environmental) of nano-materials

- **Link with the Cooperation programme:**

Theme 4 – NMP - Nanosciences, Nanotechnologies, Materials and new Production Technologies, Activity NMP 2007-CSA 1/SME 1/Large 1/Small 1

- **Typical existing RI relevant to the topic:**

University of Antwerp, BE: electron crystallography, tomography, nanotechnology;

Technische Universiteit Delft, NL: in situ nanolaboratory experiments + remote control;

NSRF Demokritos, Athens, GR: silicon technology





Third Call for proposals closing in spring 2008

- For both **bottom up** and **targeted approach**
- **Indicative budget of 275 M€**
 - 25 to 30 projects to be selected
- **Closure: May 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**



Support actions

**... through 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**

ERANETS

65 M€
2007-2013





Policy development and Programme implementation

- 1. ERA-NETs for research infrastructures**
- 2. Studies, conferences and coordination actions for policy development, including international cooperation**
- 3. Coordination actions to support emerging needs**
- 4. Network of National Contact Points (NCP)**
- 5. Other Support actions, as appropriate**

Calls 1, 2, 3, 4





ERA-NET for Research Infrastructures (1)

- To step up the cooperation and coordination of **national and/or regional programmes/activities** towards their mutual opening and implementation of joint activities
- To contribute to the development of the European Research Area by improving coherence across Europe of such programmes/activities



ERA-NET for Research Infrastructures (2)

- **Participants:** Public authorities and agencies responsible for financing or managing research infrastructure programmes at national or regional level (e.g. ministries, research councils or funding agencies)
- **Activities** may include:
 - Information exchange
 - Definition and preparation of joint activities
 - Implementation of joint activities
 - Funding of joint transnational activities
- *ERA-NET may be specific to a type of research infrastructures or more generic*



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Studies/conferences/ coordination actions for policy development

- To support the work of ESFRI and e-IRG
- To promote **international cooperation**





Coordination actions to support emerging needs

- **For research infrastructures in areas where a culture of cooperation is less developed**
- **Support for **Networking activities** such as:**
 - **Development of common standards,**
 - **Protocols and interoperability**
 - **Benchmarking**
 - **Foresight studies for new instrumentation, methods, concepts and/or technologies**



Trans-national co-operation among NCPs

- **To reinforce the network of National Contact Points (NCPs)**
 - ➔ **improving the services provided to potential applicants**
 - ➔ **facilitating access to FP7 calls**
 - ➔ **helping to raise the quality of submitted proposals**



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130 M€



Key documents to consult:

- ***Legal texts (FP7, SP, WP)***
- ***Guide for applicants***
 - *specific instructions to follow*
- ***Rules for participation***
 - *specifying e.g. cost models*
- ***Model contract text***
 - *setting the legal frame of EC support*



Infrastructures links

- **Research Infrastructures in FP7**
http://cordis.europa.eu/fp7/capacities/research-infrastructures_en.html
- **FP7**
<http://cordis.europa.eu/fp7/>
- **Research Infrastructures on CORDIS (FP6)**
<http://cordis.europa.eu/infrastructures/>
- **Enquiries FP7:**
<http://ec.europa.eu/research/enquiries>





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Merci

Grazie

Danke

Bedankt

Gracias

Hvala

Kiitos

Tack

Obrigado

Ευχαριστώ

Köszönöm

Teşekkür ederim *ありがとう*

СПАСИБО धन्यवाद

**Many thanks
for your attention**

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