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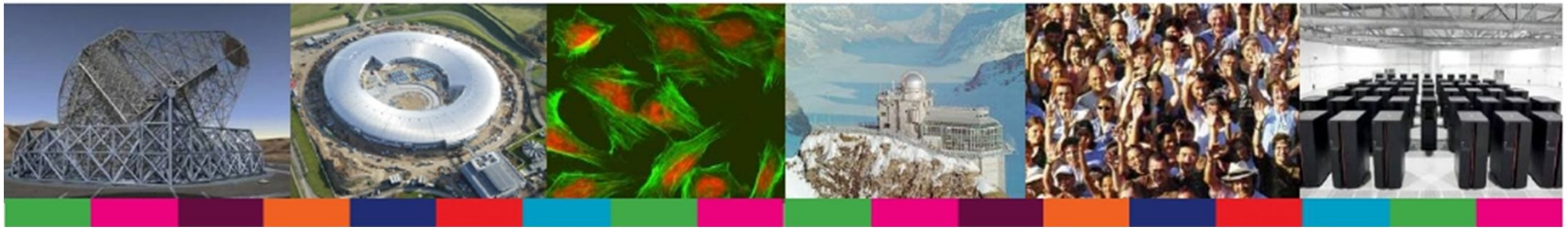
FP7 Research Infrastructures
Current Call for proposals

FP7-INFRASTRUCTURES-2012-1

FP7 Infoday, 19.10.11, Minsk

Dr.Tatyana Lyadnova, FP7 ICT NCP, BELISA



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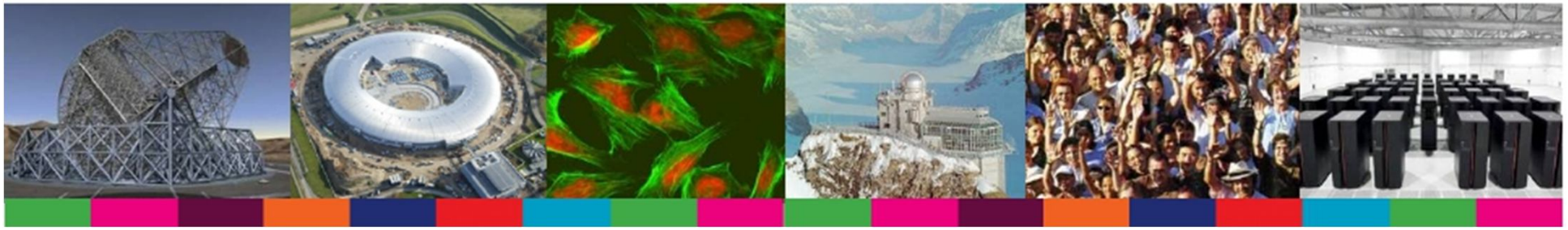
Overall information



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Definition of Research Infrastructures

The Research Infrastructures (RI) represents facilities, resources, and related services used by the scientific community for conducting top-level research in their respective fields

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Definition of Research Infrastructures

The RI include:

- **Major scientific equipment or set of instruments**
- **Scientific collections, archives and structured information**
- **Enabling ICT-based "e-Infrastructures"**
- **Any other entity of a unique nature, used for research**

The RI can be:

- **"Single-sited" or "distributed"**

Subject to international review

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Objectives of the Community Research Infrastructures action

- To optimise the use and development of the best research infrastructures existing in Europe
- To create new research infrastructures of pan-European interest in all fields of S & T
- To support programme implementation and policy development (e.g. international cooperation)

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Innovation Union dimension in WP 2012

- Activities proposed will support RIs enabling researchers to
  - § generate knowledge leading to new and more innovative products, processes and services
  - § address societal challenges

- All projects will increase the potential for innovation of the involved RIs through a specific work package on innovation including:
  - § activities to reinforce partnership with industry, e.g. transfer of knowledge and other dissemination activities,
  - § activities to foster use by industrial researchers, involvement of industrial associations in consortia or in advisory bodies.

- WP 2012 directly addresses the following Innovation Union and Digital Agenda for Europe (DA) commitments:
  - § N° 4: *Opening of Member State operated RIs to the full European user community*
  - § N° 5: *To complete or launch the construction of 60% of the ESFRI projects by 2015*
  - § N° 32: *To step up EU cooperation on the roll-out of the global RIs*
  - § DA Key Action 9: *Leveraging more private investment* through the strategic use of pre-commercial procurement: the 3rd Construction- Implementation Phase of PRACE

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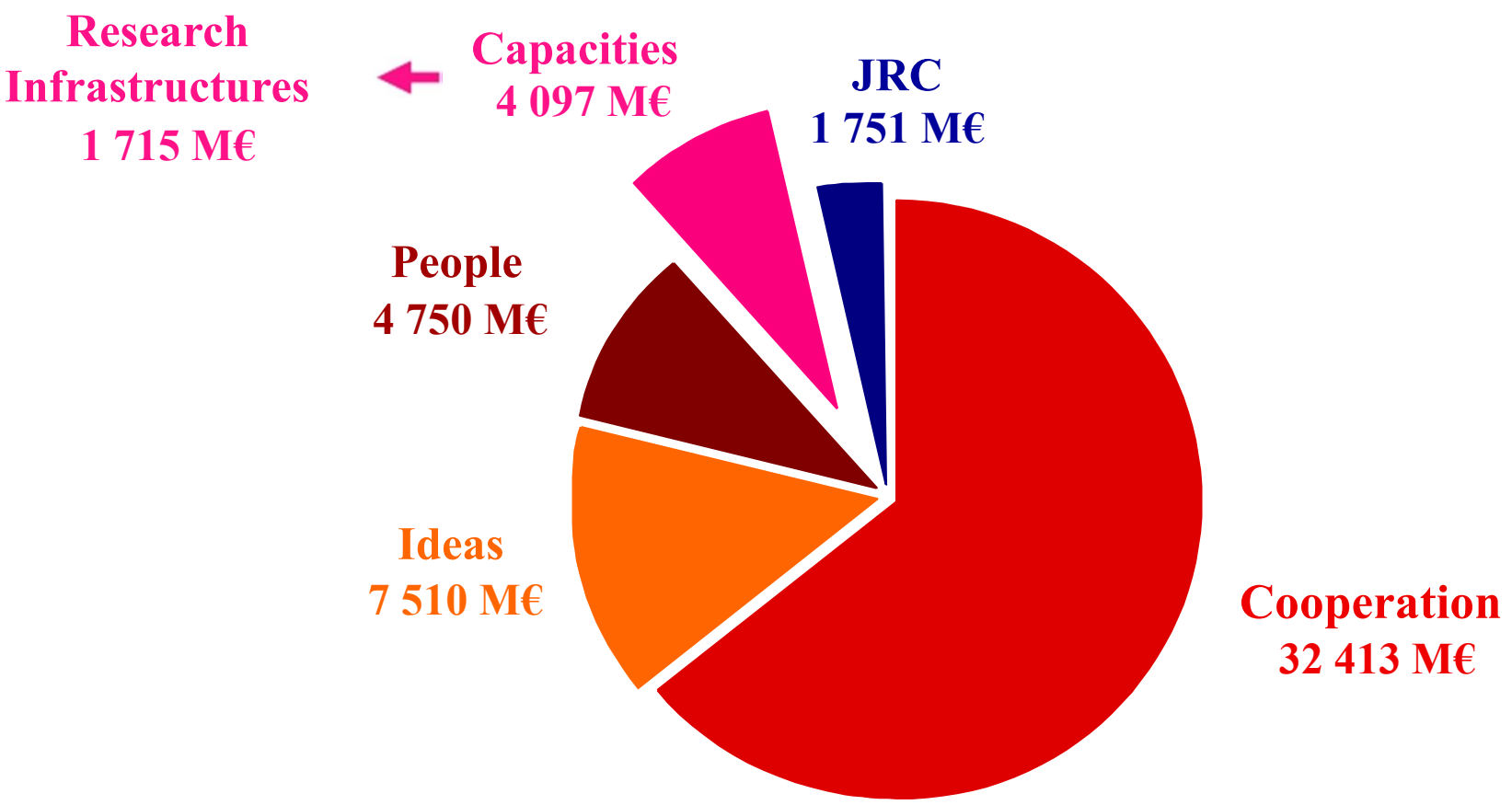
FP7 budget



FP7 budget (50 521 M€)

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FP7 Research Infrastructures action

Existing infrastructures	New infrastructures
✓Integrating activities	Design studies
e-Infrastructures	Construction (✓Preparatory phase; ✓implementation phase)
✓Policy development / Programme implementation	

ESFRI Roadmap

(✓call FP7-INFRASTRUCTURES-2012-1)

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Call budget

FP7-INFRASTRUCTURES-2012-1

Indicative total budget: EUR 90.30 million (+78.5M€)

+ 78.5 M€
(budget to be added from 2013)

1.1 Support to existing research infrastructures	
1.1.1 Integrating activities	**~ 30.00 M€**
1.2 Support to new research infrastructures	
1.2.2 Construction of new infrastructures (or major upgrades) – preparatory phase	**~ 22.30 M€**
1.2.3 Construction of new infrastructures (or major upgrades) – Implementation phase	**~ 20.00 M€**
1.3 Support to policy development and programme implementation	**~ 18.00 M€**

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Indicative timetable

➢Date of publication	20 July 2011
➢Deadline	23 November 2011 17:00 (Brussels time)
➢Evaluation	Dec. 2011 – Feb. 2012
➢Evaluation results	March 2012
➢Launch of negotiation	May 2012*
➢Signature grant agreements	from autumn 2012**
➢Pre-financing	45 days after signature grant agreement
➢Starting date	to be negotiated

*March 2012 for INFRA-2012-2.3.1 and INFRA-2012-3.3

**Mid 2012 for INFRA-2012-2.3.1 and INFRA-2012-3.3

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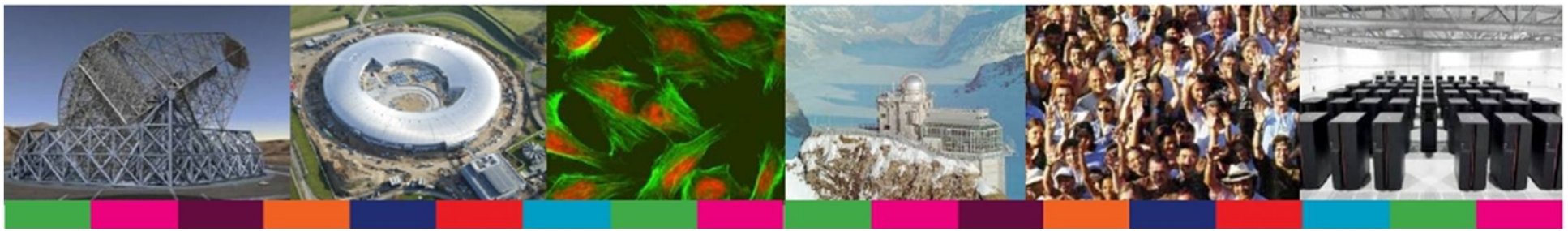
Integrating activities



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Integrating activities
Objectives and activities

Objectives: bring together and integrate, on a European scale, key research infrastructures (RIs) in a given class, in order to promote their coordinated use and development.

- **Activities:**

  (1) Transnational access and/or service activities and

  (2) Networking activities,

  (3) Joint research activities

In line with the political context set out by Innovation Union a specific work package on innovation will be requested, whenever appropriate, in all Integrating Activities and Preparatory Phase projects.

Funding scheme: CP-CSA (combination of 'collaborative project' & 'coordination and support actions')

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Integrating activities

(1) Transnational access and/or service activities

Objectives: to support scientific communities in their access to the participating RIs

Transnational access and service activities:

- **To provide access 'free of charge'**
- **'Hands-on' access or remote access (sample analysis…)**
- **To support access to scientific services freely available through communication networks e.g. databases available on the web**
- **Only services widely used by the community of European researchers will be supported**

Support limited to 20% of the operating costs

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Integrating activities
(2) Networking activities

Objectives: to foster a culture of cooperation between the RI and scientific communities and help developing a more efficient and attractive ERA

Networking activities :

- **Joint management of access provision…**
- **Definition and development of common standards, protocols, databases…**
- **Spreading of good practices, training to new users…**
- **Coordination with national or international initiatives…**
- **Promotion of long-term sustainability, involvement of funders, business plan…**

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Integrating activities
(3) Joint research activities

Objectives: to improve (in quality and/or quantity) the services provided by the RIs

- **Explore new fundamental technologies or approaches underpinning the efficient and joint use of the participating RI**

Joint Research Activities:

- **Methodologies, protocols, instrumentation, software…**
- **Integration of infrastructures into virtual facilities…**
- **Innovative solutions for data collection, management, curation and annotation…**
- **Impacts on social, environmental and economic levels…**

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Integrating activities
Eligibility and requirements

Eligibility conditions

- **General criteria: deadline, completeness, relevance to topics…**
- **Min. 3 independent legal entities from 3 different MS or AC**
- **Max. requested EC funding: 10 M€**
  (warning: € 10.000.000,01 ? proposal NOT eligible!)
- **All 3 types of activities are mandatory: (1) transnational access and/or service, (2) networking, (3) joint research activities**

Further recommendations

- **Maximum 4 years**
- **One third of the EU contribution allocated to Access provision**
- **One proposal expected per topic, corresponding in general to a given class of RI**

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Integrating activities
Targeted approach

- This call addresses 27 defined topics, focusing on strategic priorities
- With topics for the potential follow-up of projects and with topics for the opening to new communities
- More topics than can be funded to ensure competition (around 15!!! projects expected to be selected)
- To develop synergies and complementarities between FP7 and cohesion policy, applicants are encouraged to check the operational programme for Structural Funds applicable in their regions and to contact the related managing authorities for
- complementary or alternative support

Topic codes: INFRA-2012-1.1.1,… INFRA-2012-1.1.27

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Integrating activities
List of topics (1)

Social sciences and humanities

1. **Research infrastructures for the study of poverty, working life and living conditions**
2. **Research infrastructures for the assessment of science, technology and innovation policy**
3. **Research infrastructures for archaeological datasets and related technologies**

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Social sciences and humanities

Model projects

Data without Boundaries (DwB)

- **To prepare the essential relationships and build trust, common views and agreements between the European Social Science Data Archives (CESSDA) and Official Statistics, the researchers and other stakeholders**

- **To develop an integrated model for the best solutions for access of researchers to and use of data of official statistics (with focus on confidential data), irrespective of national boundaries**

- **To support on site as well as remote access of researchers to and use of existing secure official micro-data services of national official statistics**

- **This work should also leverage the power of the ESFRI European Infrastructure for Social Sciences, CESSDA**

<u>EU support 6,5 M€ ,</u> Duration 4 years (2011-2015)

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Integrating activities
List of topics (2)

Life Sciences

4. **Mouse archives and centres for phenotyping mouse models**
5. **Facilities for translational research in medicine**
6. **Biological Resources Centres for micro-organisms**
7. **Experimental facilities for animal disease infectiology**
8. **Stem cell banks**
9. **Large-scale prospective cohort studies**
10. **Plant Genetic Resources Centres**

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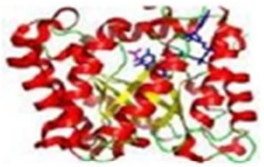
Life Sciences
Model projects

Bio-NMR: NMR for structural Biology



EU contribution: ~9.0 M€
2011-2014
www.bio-nmr.net

Bio-NMR

Activities:

Networking (~1.3 M€)
- targeted to all relevant stakeholders, ranging from scientists, to scientific and health communities, to industries, and society as a whole
- Spread good practices and standardization to continuously improve the quality and quantity of access.
- Increase the role of the Bio-NMR project and its positive impact on the ERA of Life Sciences and, through it, on society.

Access (~4.3 M€) to 11 NMR research infrastructures

Joint Research (~3.1 M€)
- To address bottlenecks and limitations in capability of NMR to solve structures (improving sensitivity per unit time and per single experiment; developing non-invasive in-cell-NMR methodologies for structural systems biology; methods for structure determination by solid-state NMR; and NMR technology towards large macromolecular complexes or aggregates)
- To integrate results into portfolio of infrastructures to improve quality and quantity of access during the project.

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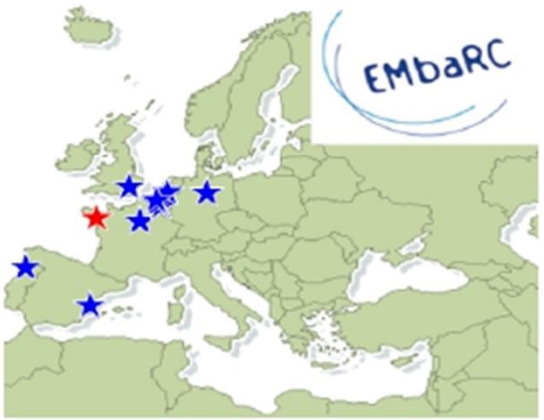
Life Sciences Model projects

EMBaRC: A Consortium of key Microbial Resource Centres in Europe

EU contribution: ~4.2 M€
2009-2012
www.embarc.eu



Activities:

Networking (~0.9 M€)
- Develop common standards and protocols
- User Access, training and outreach
- Sustainable activity of Microbial Resource Centres

Access (~0.5 M€) to 13 collections and services

Joint Research (~2.4 M€)
- Improve strain and DNA storage methods
- Develop new approaches in species identification

Some impact already achieved:

- Detailed inventory of holdings (Trends in Microbiology, 2010, 18(7) 283-287)
- Compilation of SOPs for handling and storage of microorganisms and associated data
- Inclusion of the MIRRI project in the ESFRI roadmap
- Development of protocols for harmonized sequence and identification by Mass Spectrometry

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Integrating activities
List of topics (3)

Environmental Sciences and Earth Sciences

11. Fixed point open ocean observatories

12. Research Vessels

13. Research Aircrafts

14. Atmospheric simulation chambers

15. Research Infrastructures for Climate Earth System modelling

16. Natural History Collections.

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Environmental Sciences and Earth Sciences Model projects

EUROFLEETS: towards an alliance of European research fleets

EC contribution: 7.2 M€

Total budget: ~9 M€

Networking(~2.8 M€): **To foster a culture of cooperation between the research infrastructures and the related scientific communities**

- Define a common strategic vision for European research fleets and associated heavy equipment
- Develop eco-responsibility on existing research vessels and define design guidelines for new built research eco-vessels
- Facilitate optimal use, and inter-operability, for existing equipment and help developing new interoperable equipment…

Access (~2.9 M€): **To provide trans-national access to researchers or research teams**

- Access to 5 Ocean and 14 Regional research vessels and their associated equipment (total duration of 176 days at sea)

Joint Research (~2.8 M€): **To improve the services provided by the infrastructures (in quality and/or quantity)**

- Development of software packages easy to install on every European research vessel
- Development of innovative tools for underwater equipment

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Integrating activities
List of topics (4)

Energy, Materials Sciences and Analytical Facilities

17. **Research Infrastructures for Solar Energy: Concentrating solar power**
18. **Carbon Capture and Storage (CCS) facilities for energy research**
19. **Research Infrastructures for Distributed energy resources – smart electricity grids**
20. **Infrastructures for studying turbulence phenomena and applications**
21. **Research infrastructures for integration of processing, analysis and characterisation of nano-scale materials and structures**
22. **Imaging, Diffraction and Spectroscopy using Electrons**
23. **Synchrotron radiation sources and Free Electron Lasers**

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Energy
Model projects

Solar Facilities for the European Research Area (Concentrating Solar Power): 12 leading RIs from ES, DE, CH, IL, FR, PT

EC contribution: 7.4 M€

TA (~3,0 M€):

- **Single entry point to the use of over 20 unique or leading installations (until up to over 15000 'suns'): CSP, optics, heat transfer, production of energy carriers, materials research,…**

NA (~1,0 M€):

- **Standards and exchange of good practices, developing and promoting of common methods**
- **Training on use of RI**
- **Web portal, meetings, conferences, expert WGs**

JRA (~3,4 M€):

- **Improve services of CSP installations: new instruments, modelling**
- **Ultra high concentration**
- **Improve durability prediction for CSP components**
- **Technologies and materials for storage**

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Integrating activities
List of topics (5)

Physics and Astronomy

24. **Accelerator physics**
25. **Research Infrastructures for optical/IR astronomy**
26. **Research Infrastructures for High-Resolution Solar Physics**
27. **Research Infrastructures for space weather**

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HPC-Europa2

Pan-European Research Infrastructure on High Performance Computing

Main objective: to provide the European computational science community with high quality transnational access to the most advanced HPC infrastructures available in Europe.

3 Networking activities: Interaction with the HPC ecosystem in Europe; Coordination of the TA activity; Training and dissemination.

7 Transnational Access Activities for HPC service provision.

3 Joint research activities: Emerging HPC programming models; Basic tools for the scientific data service; A virtual cluster environment to prepare and familiarize users with HPC programming techniques.

IMPACT

- **Opening of new opportunities of access for researchers to the best suited HPC facility(ies) for their work**
- **Unique entry point for users looking for HPC services**
- **Establishment of valuable and fruitful links between users and their scientific hosts**
- **Training of researchers to the use of HPC facilities and enlargement and preparation of the user community for the next generation of supercomputers**
- **Harmonisation of the procedures to access and use the main HPC facilities in EU**
- **Harmonisation of user evaluation procedures among the HPC centers**
- **Transfer of best practises among the HPC centers for the management of the RIs**

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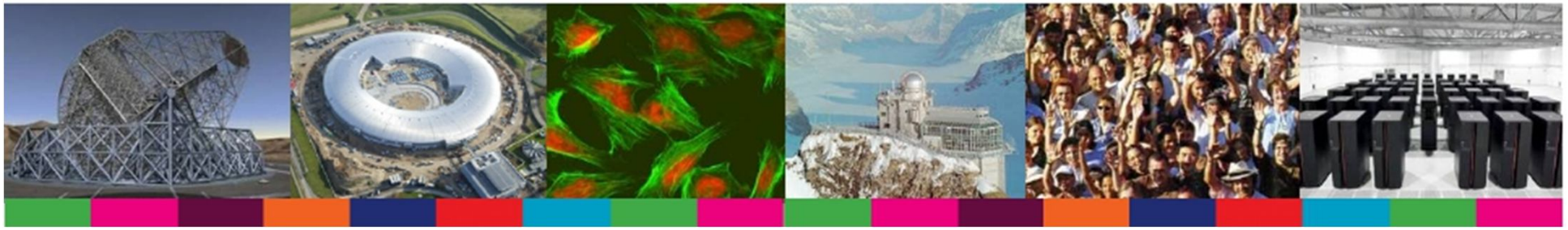
Preparatory phase



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Preparatory phase
Objectives and activities

Objectives: to provide catalytic and leveraging support for the preparatory phase leading to the construction of new RIs

- **Building primarily upon the work conducted by ESFRI**
- **Bringing the project to the level of legal and financial maturity**
- **Involving all the necessary stakeholders to make the project move forward, take decision, etc.**

Activities: legal work, governance, strategic work, financial work and, if necessary, technical work

In line with this political context set out by Innovation Union a specific work package on innovation will be requested, whenever appropriate, in all Integrating Activities and Preparatory Phase projects.

Funding scheme: CP-CSA (combination of 'collaborative project' & 'coordination and support actions')

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Preparatory phase
Eligibility and requirements

Eligibility conditions

- General criteria: deadline, completeness, relevance to topics…
- Min. 3 independent legal entities from 3 different MS or AC
- Requested EC funding: 3-6 M€
- Duration 3-4 years

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Preparatory phase
List of topics

Strategic approach mainly targeting the new projects on the 2010 edition of the ESFRI roadmap

1. **INFRA-2012-2.2.1. EU-SOLARIS - The European SOLAR Research Infrastructure for Concentrating Solar Power**
2. **INFRA-2012-2.2.2. Windscanner -The European WindScanner Facility**
3. **INFRA-2012-2.2.3. ECCSEL (European Carbon Dioxide Capture and Storage Laboratory Infrastructure).**
4. **INFRA-2012-2.2.4. ISBE - Infrastructure for Systems Biology-Europe**
5. **INFRA-2012-2.2.5. MIRRI - Microbial Resource Research Infrastructure**
6. **INFRA-2012-2.2.6. ANAEE - Infrastructure for Analysis and Experimentation on Ecosystems**

CLARIN-PP

Common Language Resources and Technology Infrastructure

Distributed infrastructure making available a rich, integrated and interoperable landscape of language resources and tools/service to researchers and scholars of all disciplines, in particular the SSH

major achievements

- **Submission of ERIC application end of May 2011 with MoU signed by 11 countries**
- **a network of 30 strong center candidates as backbone for the infrastructure,**
- **2 centers offering deposit services for long-term preservation, 8 already federated,**
- **agreements with 3 national Identity Providers (DE, NL, FI) – being extended**
- **ISOcat concept registry ready and being filled**
- **all metadata categories already in 23 languages**
- **professional metadata editor for component based metadata**
- **Virtual Language Observatory with > 270.000 resources and tools**
- **launching safe data replication project together with DEISA**
- **establishment of European PID Consortium (EPIC) and developing SW interface**
- **13 centers offering web-services**
- **cross-national Natural Language Processing workflow chaining operational**

ILL 20/20 UPGRADE

An FP7 ESFRI Preparatory Phase Project, aiming at preparing for the upgrade of ILL's neutron science facilities, in order to strengthen its world leading position and to provide for the future scientific needs of users in Europe and beyond.

Major achievement of the project so far:

- the development, fabrication and successful testing of a high-intensity ultra-cold neutron source with superfluid 4He, which is expected to be further developed by scaling-up, during the second half of the project;
- the design of reinforcements of Neutron Transport Systems was finalised and the shielding from harmful radiation was optimised;
- new concepts in neutron scattering instrumentation were developed, including diamond crystals to be used as hot-neutron monochromators and an MgF2 prism for white beam analysis;
- a new Partnership for Soft Condensed Matter was established with ESRF, one of the organisations which share the same campus;
- finally, concerning the site infrastructure, a concept for a new Science Building was developed, as well as plans for important extensions to existing buildings.

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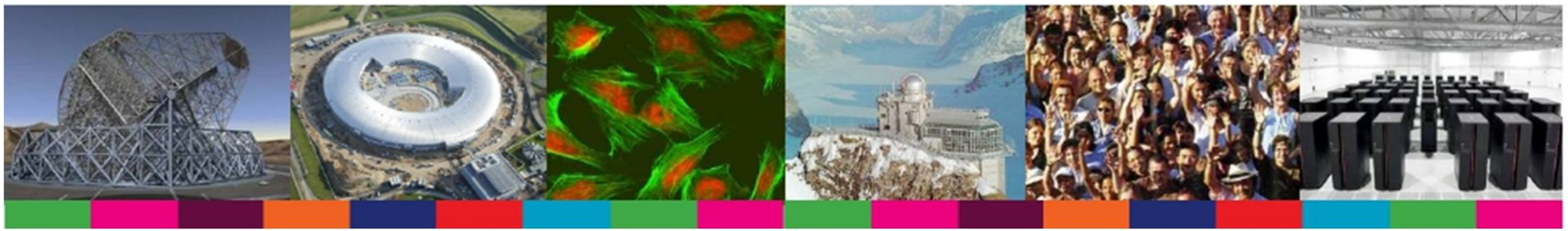
Implementation phase



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Implementation phase
Objectives and activities

Objectives: to support the actual implementation of new research infrastructures (or major upgrades of existing ones).

The implementation phase should include all appropriate coordination activities as well as the relevant technical work:

- A pilot on joint pre-commercial procurement and joint ownership of HPC resources
- Deploy HPC services, e.g. for simulation and product prototyping, to European industrial users, including SMEs
- Broaden training and outreach activities to engage more user communities including industry, and to ensure sufficient availability of human resources in HPC
- Support to the scaling of applications and to the development of new utilities and algorithms in order to address major socioeconomic challenges.

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Implementation phase
Eligibility and requirements

Eligibility conditions

- **General criteria: deadline, completeness, relevance to topics…**
- **Min. 3 independent legal entities from 3 different MS or AC**
- **Max. requested EC funding: 20 M€**

Funding scheme: CP-CSA (combination of 'collaborative project' & 'coordination and support actions')

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Implementation phase

One topic*

INFRA-2012-2.3.1. Third implementation phase of the European High Performance Computing (HPC) service PRACE *

Topic coordinated by DG INFSO

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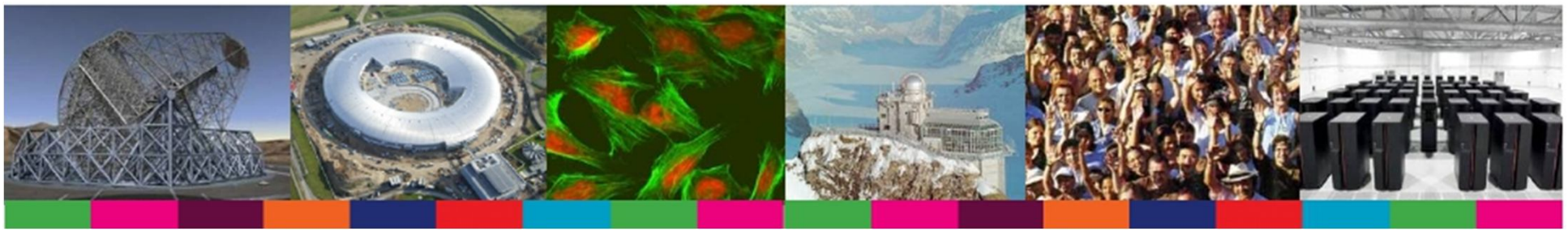
Support to policy development and programme implementation



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Support to policy development and programme implementation

Objectives and expected impact

Objectives: to reinforce cooperation with the USA in jointly addressing global scientific challenges through interoperable research infrastructures across the Atlantic.

Expected impact:

- **to strengthen the development of a consistent and dynamic European policy for research infrastructures including the data produced by this infrastructure**
- **to address specific needs of international cooperation in the field of scientific data management, thus achieving critical mass and driving global policies**
- **to development a common vision for the next decades, identifying existing gaps and creating the opportunities to better face global challenges**

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Support to policy development and programme implementation

Topics

INFRA-2012-3.1 International cooperation with the USA on common data policies and standards relevant to global research infrastructures in the environment field

INFRA-2012-3.2* International cooperation with the USA on common e-infrastructure for scientific data

INFRA-2012-3.3* Coordination actions, conferences and studies supporting policy development, including international cooperation, for e-Infrastructures

Topic coordinated by DG INFSO

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Essential documents

- **Work Programme (FP7 'Capacities', Research Infrastructures, 2012) and 'Call fiche', Guides for applicants**

- **Research Infrastructures on Europa website**
  http://ec.europa.eu/research/infrastructures

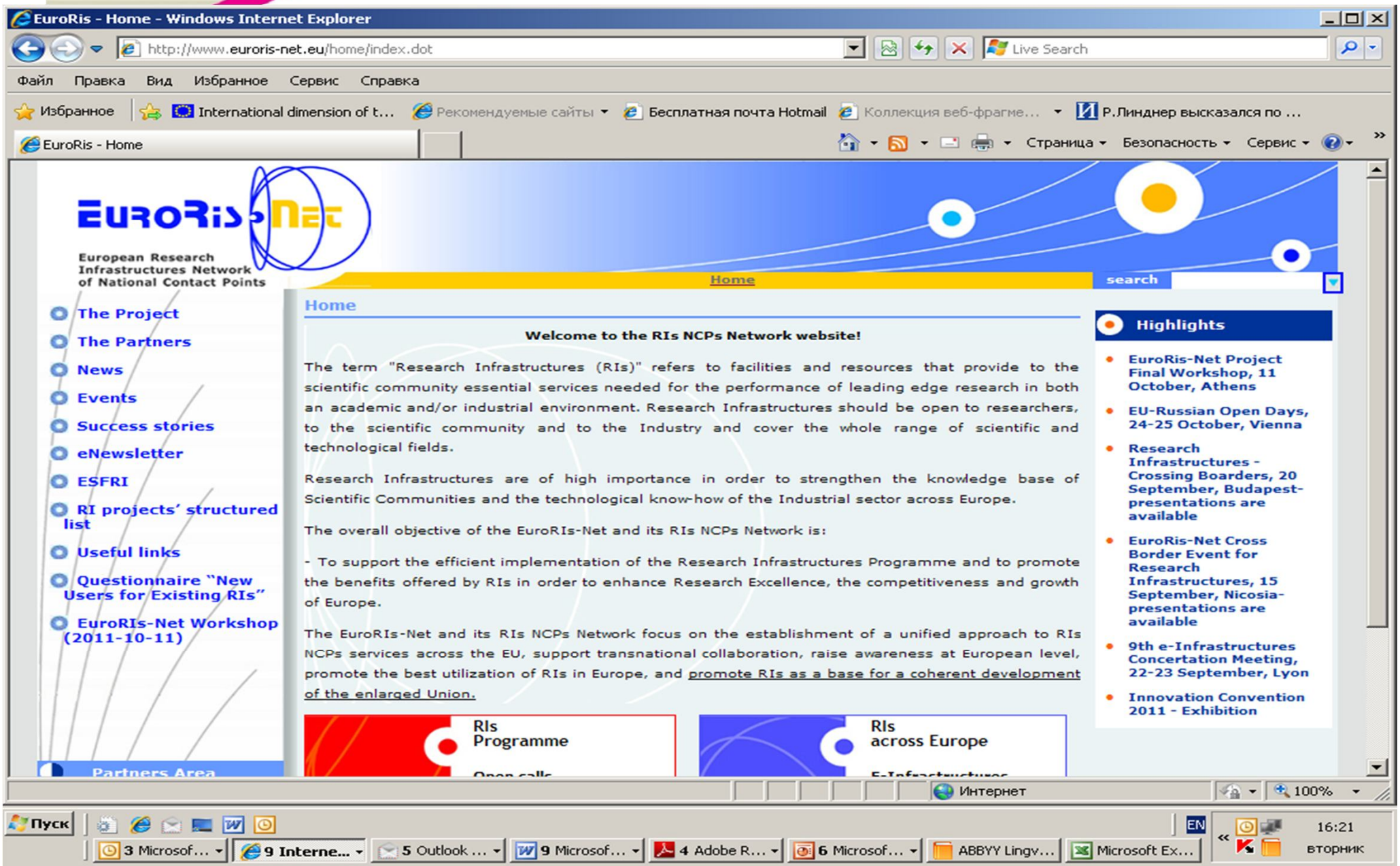
- **ESFRI on CORDIS**
  http://cordis.europa.eu/esfri

- **EuroRisNet project**
  http://www.euroris-net.eu/

(on Cordis web site, along with other useful documents)

EuroRisNet project for your support

http://www.euroris-net.eu/home/index.dot



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Thank you!

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