



Research Infrastructures in FP7

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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



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 will continue supporting 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
- **e-infrastructure** - use of ICT based infrastructures in support of a new scientific process



FP7 will also increase 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
 - the list of projects to be supported will be based on the work conducted by the European Strategy Forum on Research Infrastructures (**ESFRI roadmap**)

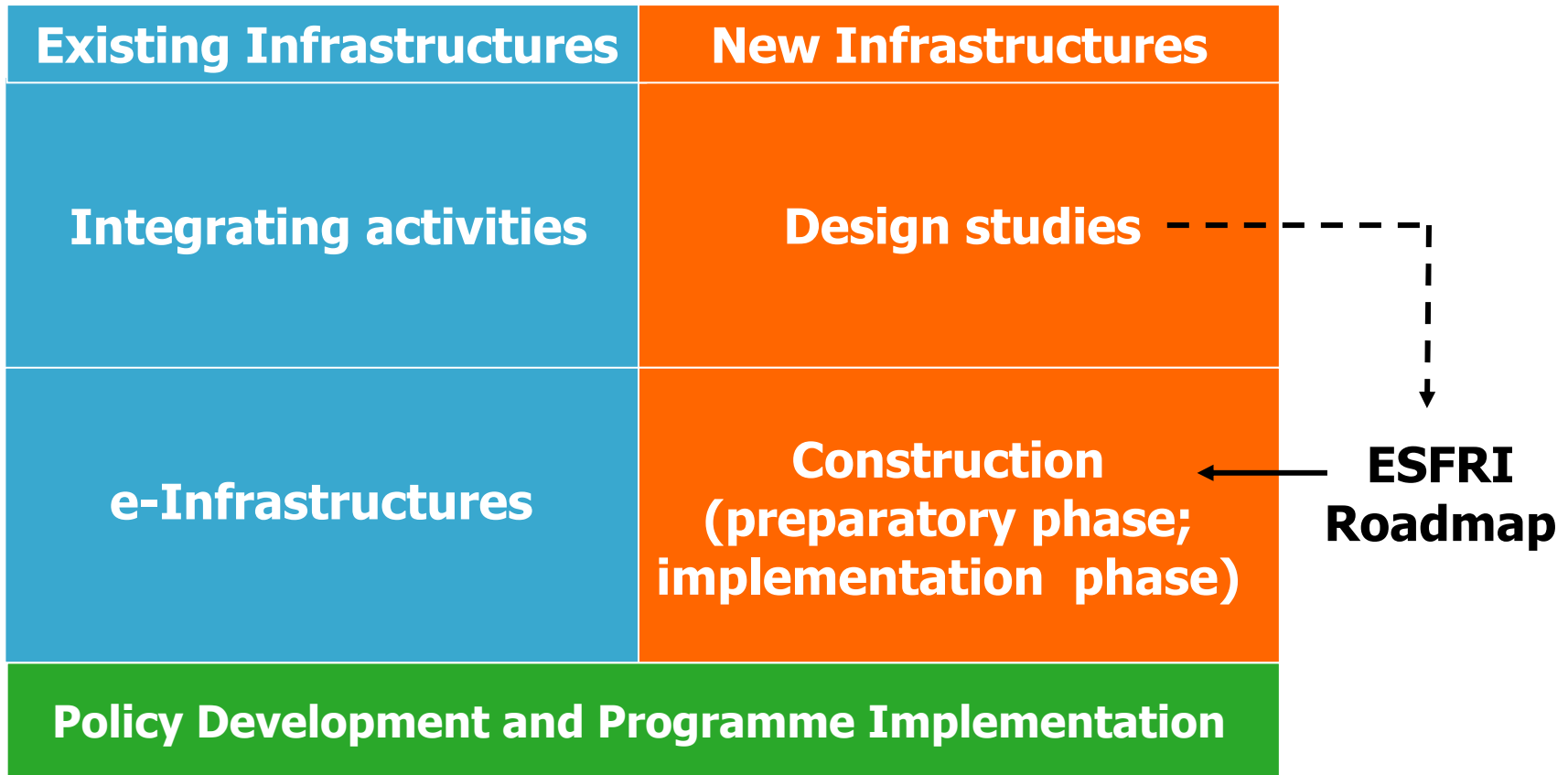


... in summary, an improved FP7 action for Research Infrastructures

- An increased **budget** for FP7 (**+30%**)
- Better consistency within FP7 (**targeted calls**)
- Tackling fragmentation better (**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



FP7 Research Infrastructures in brief





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
- **e-infrastructures** - use of ICT based infrastructures in support of a new scientific process

580 M€
2007-2013
First call in
2008

420 M€ 2007-
2013
First call in 2007

Both implemented by the I3 scheme



Integrated Infrastructure Initiatives (I3s)

- Based on the continuation of the successful FP6 model “**Integrated Infrastructure Initiative**” (**I3s**)
- **Three compulsory types of activities** in one 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: selection of users; implementation in a coordinated way
- Provide research infrastructures related **services**
 - 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

The targeted approach for Integrating Activities

- A list of topics for classes of infrastructures to be supported
 - **A sufficient basis of RI's to be networked**
- Topics defined **in line** with Cooperation Programme
 - Revisions of topics: list can be amended
- Complementary to other FP7 funding schemes used in the thematic priorities (Collaborative Projects, NoE's)
- To stimulate RI actions in specific fields that are currently not well covered under our actions



Integrating Activities

Call 3 - closing early 2008

- For both **bottom up** and **targeted approach**
- Indicative budget of **270 M€**
 - 25 to 30 projects to be selected
- Closure: March 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



e-Infrastructures: main orientations





Scientific Digital Repositories

Call 1 – closing May 2007

- deployment of **digital repositories** for the scientific communities by pooling existing resources & supporting **data storage, archiving, access, interpretation, interoperability, management & curation.**
- aggregate and combine information to generate and share knowledge, profiting from a **transparent** underlying data infrastructure across different communities, institutions and geographic boundaries.
- **open standards** are key to bridge heterogeneity and ensure long term preservation.
- Indicative budget of **15 M€**



e-Infra for scientific communities

Call 1 – closing May 2007

- consolidation and expansion of e-Infrastructures by addressing the specific needs of **new scientific communities** within a coherent pan-European model
- **impact, adoption** and **global relevance** of e-Infrastructures across various areas of science & engineering
- advanced applications and capabilities to **more researchers**
- adaptation of **methods** and **scientific practices** to exploit the extended capabilities of e-Infrastructure
- Indicative budget of **27 M€**



e-Science Grid infrastructures

Call 2 – launched in mid 2007

- further deployment, extension in time and evolution of **core European grid-empowered e-Infrastructures**, exploiting the sharing of more computing resources (including distributed supercomputing), scientific instrumentation and data facilities across multiple scientific disciplines.
- provision of **persistent, cross disciplinary** services to pan-European virtual research communities, with increased levels of interoperability, trust and confidence
- open standards, consolidation of middleware technology
- Indicative budget of **50 M€**



Support Measures for e-Infra Call 2 – launched in mid 2007

- **coordination** between National and pan-European e-Infrastructure initiatives, namely through the support of policy oriented groups such as the e-IRG and ESPRI
- support to specific **studies** and **conferences** on e-Infrastructure related topics, complementing and paving the way to improved multidisciplinary ICT based infrastructures.
- promote **international** interoperation between similar infrastructures with the aim of reinforcing the global relevance and impact of European e-Infrastructures
- Indicative budget of **14 M€**



Call 4 – launched in 2008

- Support the further development and evolution of the **pan-European high-capacity and high-performance communication network GÉANT** in close articulation with the National Research and Education Networks (NRENs)
- Reinforce the provision of end-to-end connectivity and services (user-to-user)
- Become an instantiation of the “Internet of the future” by making timely use of state-of-the-art communication technologies
- Indicative budget of **93 M€**

Scientific Data Infrastructures

Call 4 – launched in 2008

- support the deployment of standardized mechanisms to store, archive, authenticate, access, transfer, preserve, curate, certify, interpret scientific data
- provide an integrated set of services **exploiting the middleware and grid capabilities** to federate data in an ecosystem of digital resources
- support the deployment of a broad European **multidisciplinary scientific data infrastructure** able to be easily federated with knowledge infrastructures in other parts of the world
- Indicative budget of **20 M€**



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
 - the list of projects to be supported will be based on the work conducted by the European Strategy Forum on Research Infrastructures (ESFRI roadmap)

70 M€
2007-2013
First call in 2007



What is ESFRI?

- **A European Strategy Forum on Research Infrastructures**
- Launched in April 02
- Brings together representatives of the 27 Member States, 5 Associated States, and 1 representative of the European Commission (EC)





The ESFRI Roadmap

- Addressing seven fields of Research and major challenges
- From about original 200 proposals, thirty five (35) projects have been identified through several review stages
- Community produced ideas that will open up new and unexpected areas of knowledge

Some fields should be stimulated for further integration



FP7 will support the design of new research infrastructures

- **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 for service provisioning 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

Construction of new infrastructures

A two-stage process:

- The **preparatory phase**

- Restricted calls, targeting projects identified as having pan-European character

- The **implementation phase**

- Mainly under the financial responsibility of Member States
- Use of financial engineering, such as RSFF

200 M€
2007-2013
First call in
2007

130 M€ +
200 M€ RSFF
2007-2013



Purpose of the preparatory phase

- To provide a framework facilitating decision-taking between partners from different countries
- To address all the **critical issues** (Strategy development, Technical work - e.g. final prototypes, Governance and logistical work, Financial arrangements, Legal issues)
- To conclude an **“agreement”** between the funding parties and other partners involved allowing the project to move forward

Direct EC contribution around 1-7 M€



Policy development and Programme implementation

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

65 M€ 2007-2013
First call in 2007



Calls planning/indicative budget

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

- FP7 Proposal and Capacities Specific Programme
<http://cordis.europa.eu/fp7/>
<http://cordis.europa.eu/fp7/capacities.htm>
- Research Infrastructures on CORDIS (FP6)
<http://cordis.europa.eu/infrastructures/>
<http://cordis.europa.eu/ist/rn/>
- ESFRI (Eur. Strategy Forum for Research Infrastr.)
<http://cordis.europa.eu/esfri/home.html>
- e-Infrastructures Reflection Group (e-IRG)
<http://www.e-irg.org>
- Research Infrastructures in Europa (on-line soon)
<http://ec.europa.eu/research/infrastructures>