



Research Infrastructures in Horizon 2020

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Research Infrastructures

*Research infrastructures are **facilities, resources and services** that are used by the research communities to conduct research and foster innovation.*

Knowledge-based resources



Major scientific equipments



e-infrastructures



Why an EU approach for Research Infrastructures?

- To **address collectively** the complexity and cost of the design and development of new world class research infrastructures
- To **open access** to the research infrastructures existing in the individual Member State to all European researchers
- To **avoid duplication of efforts** and to coordinate and **rationalise the use** of these research infrastructures
- To trigger the **exchange of best practice**, develop **interoperability** of facilities and resources, develop the **training** of the next generation of researchers
- To connect national research communities and **increase the overall quality of the research and innovation**
- To help **pooling resources** so that the Union can also develop and operate research infrastructures **globally**





From FP7 to Horizon 2020

- More focused support to the implementation and operation of world-class infrastructures such as **ESFRI projects**
- Broader **access** to and deeper **integration** of European research infrastructures
- Foster the **innovation potential** of research infrastructures
- **Widen** the participation to pan-European research infrastructures
- More support to **e-infrastructures**
- Reinforce policy support to **European strategy on research infrastructures**
- Develop **international dimension** of the actions





Horizon 2020 – Framework Programme for Research and Innovation (2014-2020)

Excellent science

- European Research Council
- Future and Emerging Technologies
- Marie Curie actions
- **European Research infrastructures (including e-infrastructures) – 2.488 M€**

Societal challenges

- Health, demographic change, wellbeing
- Food security, sustainable agriculture, marine - maritime research, bio-economy
- Secure, clean and efficient energy
- Smart, green, integrated transport
- Climate action, resource efficiency, raw materials
- Inclusive, innovative and secure societies

Industrial leadership

- Leadership in enabling and industrial technologies (ICT, space, nanotechnologies, advanced materials and advanced manufacturing and processing, biotechnology)
- Access to risk finance
- Innovation in SMEs



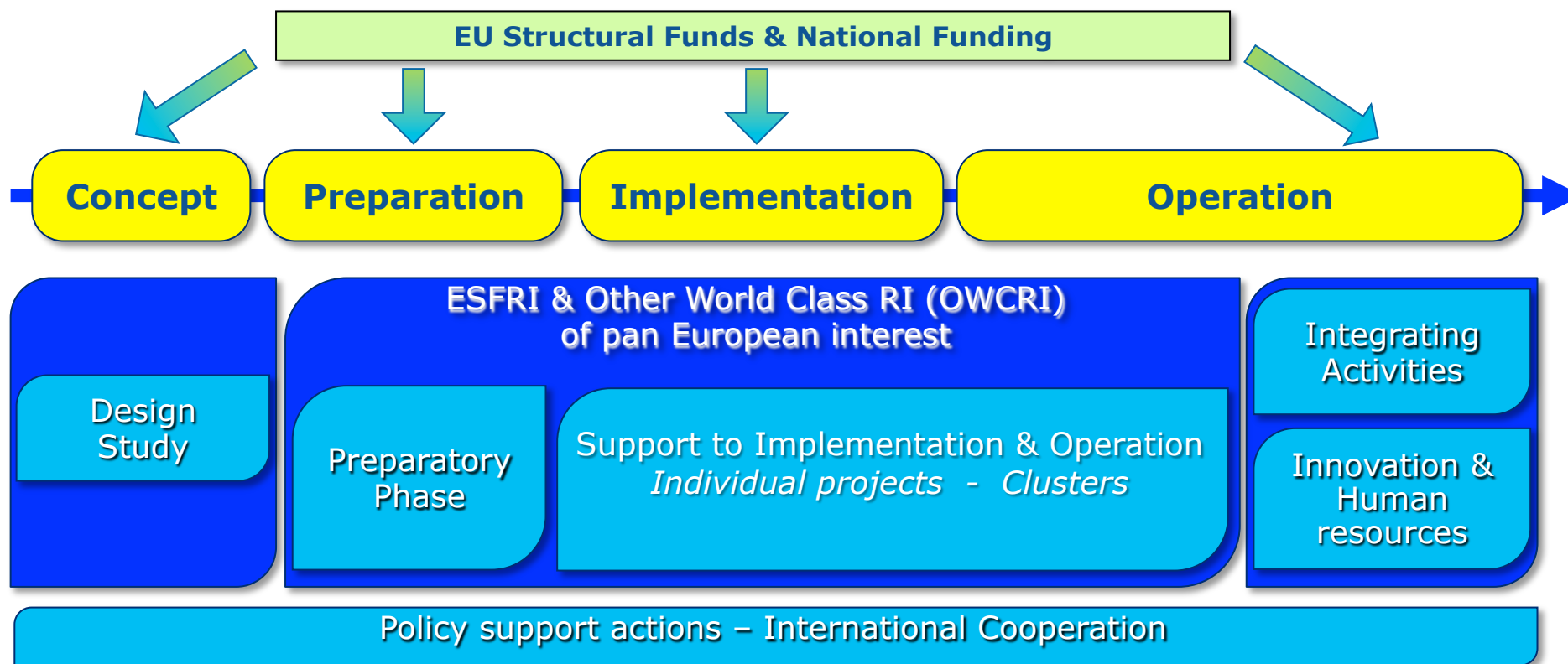
Research Infrastructures in Horizon 2020

1. Developing the European RIs for 2020 and beyond
 - Developing **new world-class RIs**
 - **Integrating and opening national and regional RIs of pan-European interest**
 - Development, deployment and operation of ICT based **e-Infrastructures**
2. Fostering the **innovation** potential of RIs and their **human resources**
3. Reinforcing European RI **policy** and **international cooperation**





A Coherent Toolbox of Activities





Research Infrastructures – Calls

4 Calls - 22 topics in total

1. **Developing new world-class Research Infrastructures**
2. **Integrating and Opening RI of European Interest**
3. ***e-Infrastructures***
4. **Support to Innovation, Human resources, Policy and International cooperation**





Call 1 - Developing new world-class RI

4 topics

- 1. Design studies**
- 2. Preparatory Phase of ESFRI projects**
- 3. Individual implementation and operation of ESFRI projects**
- 4. Implementation and operation of cross-cutting services and solutions for clusters of ESFRI and other relevant RI initiatives**





Call 1 - Developing New world-class RI

Concept & Preparatory Phases

Help Europe respond to challenges in science, industry & society:

- Support the **conceptual design** of new research infrastructures, which are of a clear European dimension and interest (topic 1):
 - **bottom-up process**
- Topic 2: Support the **preparatory or pre-implementation phase** of ESFRI projects (topic 2):
 - **Linked to prioritisation exercise**





Call 1 - Developing New world-class RI

Implementation & Operation Phases

Facilitate and support the implementation, long-term sustainability and efficient operation of the ESFRI & OWCRI:

➤ **Individual ESFRI projects** and selected OWCRI with **established legal structure and governance** such as ERIC (topic 3):

➤ **Linked to prioritisation exercise**

➤ **Clusters**: joint activities and implementation of common solutions for RI in specific domains (topic 4):

➤ **Targets ESFRI together with OWCRI, ERICs, IA, e-infrastructures**





Call 1 - Developing New world-class RI

Preparatory phase activities – Specific features

- **Legal work** for the setting-up of the RI;
- **Management and logistical work** incl. planning (timing, resources), organisation of the logistic support ...;
- **Governance work** i.e. management structure, advisory body...;
- **Financial work** i.e. the financial arrangements for the construction, operation and decommission of the facility;
- **Strategic work** i.e. analysis of the socio-economic and local/regional impact of the new infrastructure;
- **Technical work** i.e. final prototypes for key enabling technologies and implementation plans for transfer of knowledge from prototypes to the new facility;





Call 1 - Developing New world-class RI

Support to ESFRI projects – Specific features

- Central management and coordination activities;
- Enhancement of the technical architecture, R&D and engineering work; users' access;
- Data management (including possible open access to data);
- Inter-operability, standardisation, outreach, training and international cooperation;
- Development of innovative components and technology transfer activities;
- Integration of new members and development of Regional Partner Facilities.





Call 1 - Developing New world-class RI

Clusters – Specific features

Exploit synergies for joint activities, optimise technological implementation of common solutions, ensure a larger harmonisation, interoperability between research facilities such as:

- Training RI managers
- Developing the innovation capacities of RI
- Development of common devices and/or critical components for data handling
- Common data policies





Call 1 Summary

Research Infrastructures (RTD)	2014	2015	TOTAL	Single grant
CALL 1 - H2020-INFRADEV-2014/2015	70	129	199	
Design studies	15		15	From 1 to 3 M€
Preparatory Phase		14	14	Up to 2 or 5 M€
Implementation & Operation - Individual		90	90	Up to 15 M€
Implementation & Operation - Cluster	55	25	80	From 6 to 15 M€





Call 2 - Integrating and opening RI of European interest

Integrating Activities

To open up key national and regional research infrastructures to all European researchers and to ensure their optimal use and joint development:

- Networking;
- Transnational / Virtual Access;
- Joint Research Activities for the improvement of RI services.

And emphasis on **management efficiency**, **innovation capacity** (technology transfer, **participation of SMEs**, instrumentation development), international dimension, management of generated data...





Call 2 - Integrating and opening RI of European interest

Integrating Activities

- **New communities:** emphasis on networking, standardisation and common access procedure
- **Communities already involved in previous projects:** emphasis on access, joint activities, broadening of the consortium, international cooperation, participation of industry and technology transfer





Call 2 - Integrating and opening RI of European interest

Integrating Activities – Specific features

- "Real" transnational access and virtual access through the provision of remote services covered
- Opportunities should be widely publicised, selection through peer review evaluation
- Support of third country researchers (> 20% of total access) and industry participants allowed
- Participation of third country RI allowed, financial support according to RfP





Call 2 - Integrating and opening RI of European interest

Integrating Activities – Access costs

- Access cost: "service" cost of the installation, can be declared as direct eligible cost, as unit costs or as a combination of both
- Methodology for calculating unit costs in a separate Commission decision
- Unit costs= average annual total access costs / average total quantity of access to the installation
- Capital costs of the installation and travel and subsistence of users excluded from the total access costs calculation





Call 2 - Integrating and opening RI of European interest

Distribution of targeted areas by domain

Domain	Starting communities	Advanced communities	Number of areas
Bio Medical Sciences	5	4	9
Energy	2	1	3
Environment	4	5	9
ICT	1	1	2
Material and Analytical Facilities	1	6	7
Physics	4	3	7
Social Sciences and Humanities	2	2	4
Total	19	22	41





Call 2 Summary

Research Infrastructures (RTD)	2014	2015	TOTAL	Single grant
CALL 2 - H2020-INFRAIA-2014/2015	90	50	140	Up to 5 or up to 10 M€





Call 4 - Support to Innovation, Human resources, Policy and International cooperation

8 topics

- **Innovation support measures (RTD)**
- **Innovation procurement pilot on instrumentation (RTD)**
- **Human Capital of research infrastructures (RTD)**
- **New professions and skills for e-infrastructures (CNECT)**
- **Policy measures for research infrastructures (RTD)**
- **International Cooperation for research infrastructures (RTD)**
- **e-infrastructure policy and international cooperation (CNECT)**
- **Network of national contact points (RTD)**





Exploiting the innovation potential of RI

Innovation support measures (topic 1)

The action will support:

- the development of an **opportunity portal** of calls, **tenders** and future needs and **technology transfer** opportunities in RI of pan European interest;
- the networking of **procurement professionals** to encourage exchange of good practices across RI sectors;
- Awareness campaign towards industry on the potential of RIs for their activities in selected R&D areas





Exploiting the innovation potential of RI

Innovative procurement pilot action in the field of scientific instrumentation (topic 2)

The action will support:

- Pilot action in the field of **scientific instrumentation** exploiting the innovation potential of Research Infrastructures using **Pre-Commercial Procurement (PCP)** and/or **Public Procurement of Innovation (PPI)** schemes.





Strengthening the human capital of RI

Topic 3

Support the **training of staff managing and operating RI** of pan-European interest, the **exchange of staff** and **best practices** between facilities, and the adequate supply of human resources in key disciplines, including the emergence of specific education curricula.





Policy measures for RI

Topic 5

- Support **partnerships** between relevant policy makers, funding bodies or advisory groups such as **ESFRI & e-IRG**, support cooperation and exchange of good practises between managers of research infrastructures and stakeholder networks; support survey, monitoring and assessment of the implementation and operation of research infrastructures.
- Support the development of a comprehensive **database targeted at policy-makers on research infrastructures** of more than national relevance in Europe.





Strategic international cooperation

International cooperation for RI (topic 6)

Facilitate the development of **global research infrastructures** and the **cooperation of European RI with their non-European counterparts**, ensuring their global interoperability and reach, and to **pursue international agreements** on the reciprocal use, openness or co-financing of infrastructures.

- **Support to GSO activity on global research infrastructures**
- **Support bilateral cooperation with Africa, Russia (Mega Science projects)**
- **Support multilateral cooperation with ENP (mapping) and US, Canada, Russia etc... on Arctic research, Marine science and biodiversity**





Support to the NCP network

Network of NCP (topic 8)

Objective: Facilitate trans-national co-operation between NCPs with a view to identifying and sharing good practices and raising the general standard of support to programme applicants.

Activities: could include benchmarking, joint workshops, enhanced cross-border brokerage events, specific training events and twinning schemes.

Restricted to the network of formally nominated NCPs in the area of research infrastructures (consortium should mix experienced and new NCP).





Call 4 Summary

Research Infrastructures (RTD / CNECT)	DG	2014	2015	TOTAL	Single grant
CALL 4 - H2020-INFRA supp-2014/2015	RTD	17	14	31	
	CNECT	5	2,5	7,5	
Innovation support measures	RTD	2		2	
Innovative procurement pilot on instrumentation	RTD		14	14	At least two proposals
Human capital of research infrastructures	RTD	2		2	
<i>New professions & skills for e-infrastructures</i>	<i>CNECT</i>		2,5	2,5	
Policy measures for research infrastructures	RTD	4		4	Up to two proposals
International Cooperation for RI	RTD	7		7	
<i>e-Infrastructure policy & internat. cooperation</i>	<i>CNECT</i>	5		5	
Network of National Contact Points	RTD	2		2	One proposal



Time schedule

- Discussion with Member States and Associated Countries representatives:
 - **15 November 2013**
- Written procedure: early December 2013
- Decision on WP2014-2015: 10 December 2013 (tentative)
- Publication first calls: 11 December 2013 (tentative)



Thank you for your Attention!

HORIZON 2020

