The International Dimension of Research Infrastructures

The European Commission perspective

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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
Collections, archives or scientific data

Major scientific equipment

e-infrastructures
data, computing and software systems, communication networks and systems
Why a EU approach?

- To **open access** to the research infrastructures existing in the individual Member State to all European researchers
- To **avoid duplication of effort** 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 acquire and operate research infrastructures at **world level**
Current EU policy supporting openness

• New *Commission, New priorities:*
  
  • **OPEN INNOVATION** Create conditions to capitalise on results of R&I - Digital Single Market
  
  • **OPEN SCIENCE** Boost excellence in cutting-edge, fundamental research – The research Cloud Initiative
  
  • **OPEN TO THE WORLD** Reinforce EU international engagement
Rationale for International Approach

- Complexity
- High development, construction and operation costs
- Global nature of the scientific challenge addressed

*make it ineffective for one country or region alone to build and operate certain facilities*

Scope:
- Strategic alignment and structured approach at EU level
- Seeking opportunities for worldwide collaboration

*Long Term Sustainability of Research Infrastructures*
Role of the EC as Facilitator

- Fostering Cooperation between European RIs and other world class Research Infrastructures
- Strengthening the links between European RIs with their counterparts in third-countries
- Ensuring their interoperability and outreach
- Pursuing international agreements on the reciprocal use, openness or co-financing of RIs

Excellent science
- European Research Council
- Future and Emerging Technologies
- Marie Curie actions
- European Research infrastructures (including e-infrastructures)

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 reflective societies
- Secure societies
  - Spreading excellence & Widening Participation
  - Science with and for Society

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
Third countries participation in Horizon 2020

- *International cooperation is a relevant dimension of Horizon 2020*

- *Third country participation is fostered by:*
  - **General opening of H2020 towards third country participants.** Third country organisations can usually participate in H2020 projects (in addition to the minimum eligible set of participants), unless otherwise provided in the WP.
  - **Targeted activities in specific parts of H2020 where areas and partners are specified upfront.** These are cases where win-win situation and added value for EU objectives are created.
Research Infrastructures and H2020

The International dimension

- Individual support for addressing international dimension of ESFRI and other world class Research Infrastructures
- Dedicated International Cooperation topic within the Coordination and Support Action (CSA) call
- Integrating Activities
  - Access of non-EU Users to RI (transnational access)
  - Participation in the Project Consortia
Integrating Activities
Transnational Access Users

FP7 Users from Latin American Countries
FP7 Total amount of users: 33.741
The European Roadmap for Research Infrastructures

Process led by the European Strategy Forum on RI (ESFRI)

- New Roadmap (2016) recently published
- Takes into account international dimension
- Offers new possibilities for international cooperation
The Group of Senior Officials (GSO) on global Research Infrastructures

The **GSO** was established (1st G8 Science Ministers' meeting, Okinawa, 15 June 2008) to:

- provide a non-binding and open forum for policy exchanges on global research infrastructures and to inform and improve international cooperation;
- Share information about existing and planned new infrastructures;
- establish principles for the development of new partnerships.
Research Infrastructures and H2020

**ICRI - International Conference on RIs**

**Aims:**

- provide an international forum for discussion on **RIs of Global relevance**;
- facilitate strategic international cooperation between European Research Infrastructures and their **International counterparts**;
- address the impact of research infrastructures for **capacity building**.

➢ **Next ICRI: 03-05 October 2016 South Africa**
Summary of policy tools for International Cooperation

Funding

Horizon 2020 – *Funding Framework Programme*

Policy Setting Bodies

**ESFRI** - *European Strategy Forum on Research Infrastructures*

**Structured Bilateral Dialogues** with strategic partners

**GSO** - *Group of Senior Officials on global Research Infrastructures*

**OECD** – *Global Science Forum activities on Research Infrastructures*

Awareness Raising

**ICRI** - *International Conference on RIs*
Examples of projects supported by the multiannual Framework Programmes
The European Southern Observatory

the foremost intergovernmental astronomy organisation in Europe and the world's most productive astronomical observatory

Provides state-of-the-art research facilities to astronomers and astrophysicists, allowing them to conduct front-line science in the best conditions

Rare 360-degree Panorama of the Southern Sky - Credit: ESO/H.H. Heyer
• strengthen the links of ESFRI Research Infrastructures related to marine science, Arctic research and biodiversity with international counterparts aiming at creating a common ground for the development of a global network of research infrastructures to address Global environmental challenges

• Design of a new generation of interconnected infrastructures to provide a sustainable platform for data, information and knowledge sharing
**GLOBIS-B - GLOBal Infrastructures for Supporting Biodiversity research**

- Support global cooperation between research infrastructures focused on predicting the biosphere and measuring the indicators of **biodiversity change**;
- Process big and massive datasets;
- Develop interoperability and infrastructure services underpinning the concept of Essential Biodiversity Variables (EBVs) - a prerequisite for understanding biodiversity and ecosystem change.
Mobilisation of an International network around EVA to collect, amplify, characterise, standardise, authenticate, distribute and track, mammalian and other exotic viruses. 

The network of EVAg laboratories includes 25 institutions, representing an extensive range of virological disciplines. 

40 partners worldwide
Useful links

European Commission - Research Infrastructures:
https://ec.europa.eu/research/infrastructures/index_en.cfm

Work programmes 2016-17, Research Infrastructures:

Horizon 2020 Participant Portal:

The presentation shall neither be binding nor construed as constituting commitment by the European Commission
Thank you for your Attention!