RESEARCH INFRASTRUCTURES IN HORIZON 2020

Marine Melkonyan
National University of S&T MISIS

Moscow   06.10.2014

Definition of Research Infrastructures (RIs)

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

Includes:

❖ Major scientific equipment (or sets of instruments)

❖ Knowledge-based resources such as collections, archives or scientific data

❖ e-infrastructures, such as data and computing systems and communication networks

❖ Any other infrastructure of a unique nature essential to achieve excellence in research and innovation

The European Strategy Forum on Research Infrastructures (ESFRI)

❖ **ESFRI** was established in 2002

❖ The first European Roadmap for RIs in 2006, it consists of 35 new RIs

❖ The periodic upgrade with new Research infrastructures in the main domains (Bio Medical Sciences; Energy; Environment; ICT; Material and Analytical Facilities; Physics; Social Sciences and Humanities)

❖ The next update of the roadmap will be carried out in 2015, a new roadmap in 2016.
Workshop "Launch of the 2015-16 ESFRI Roadmap update", Trieste, 25.09.2014

❖ The implementation of the roadmap has started in 2007 with funding within European FP7

MERIL- Mapping of the European Research Infrastructure Landscape

MERIL
MAPPING OF THE EUROPEAN
RESEARCH INFRASTRUCTURE
LANDSCAPE
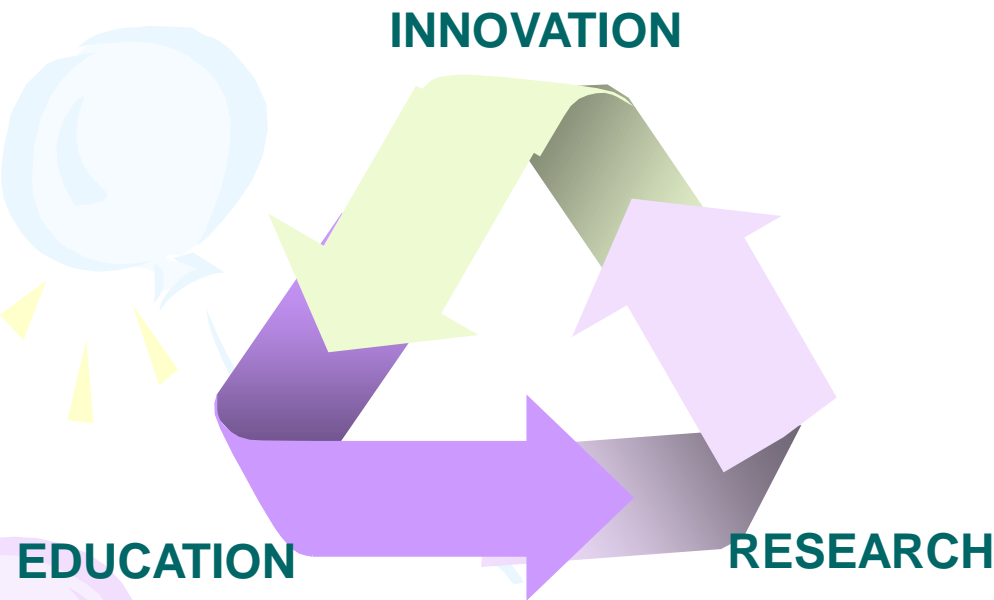
an inventory of **openly accessible** research infrastructures (RIs) in Europe of more-than-national relevance across all scientific domains

http://portal.meril.eu/converis-esf/publicweb/startpage?lang=1

532 Research infrastructures

European portal on RIs's services – an online Database

http://www.riportal.eu/public/index.cfm?fuseaction=ri.search

625 records in Database

VISIT OUR PORTAL »

Knowledge Triangle (FP7)

RIs are at the core of the knowledge Triangle and have been considered as a key element of ERA and EU innovation policy

INNOVATION

EDUCATION   RESEARCH

RIs in Horizon 2020

Excellent science

❖ European Research Council

❖ Future and Emerging Technologies

❖ Marie Curie actions

❖ European RIs (including e-infrastructures) ~ €2.4 billion

European Research Area   An open space for knowledge and growth

From FP7 to Horizon 2020

- More focused support to the implementation and operation of world-class infrastructures such as ESFRI infrastructures

- Broader access to and deeper integration of European RIs

- Foster the innovation potential of Research infrastructures

- Widen the participation to pan-European RIs

- More support to e-infrastructures

- Policy support to European strategy on Ris

- Develop international dimension of the actions

RESEARCH INFRASTRUCTURES – CALLS H2020

4 Calls – 22 topics in total

1. Developing new world-class Research Infrastructures (indicative budget €70 million for 2014 and €129 million for 2015)

2. Integrating and opening RIs of European interest (indicative budget of €90 million for 2014 and €50 million for 2015)

3. e-Infrastructures (indicative budget of €95 million for 2014 and €82 million for 2015)

4. Support to Innovation, Human resources, Policy and International cooperation (overall indicative budget of €22 million for 2014 and €16.5 million for 2015)

Work Programme 2014-2015

http://ec.europa.eu/p3rogrammes/horizon2020/en/h2020-section/european-research-infrastructures-including-e-infrastructures

Past Calls about European RIs, incl. e-infrastructures

1. Developing new world-class research infrastructures: From 11/12/2013 - 01:00 to **02/09/2014** - 02:00

2. Integrating and opening research infrastructures of European interest: From 11/12/2013 - 01:00 to **02/09/2014** - 02:00

3. e-Infrastructures: From 11/12/2013 - 01:00 to **15/04/2014** - 02:00

   e-Infrastructures : From 11/12/2013 - 01:00 to **02/09/2014** - 02:00

4. Support to innovation, human resources, policy and international cooperation: From 11/12/2013 - 01:00 to **02/09/2014** - 02:00

   Support to innovation, human resources, policy and international cooperation: From 11/12/2013 - 01:00 to **14/05/2014** - 02:00

Developing new world-class RIs 1/2

The aim is to facilitate and support the implementation, long-term sustainability and efficient operation of the RIs identified by the ESFRI as well as other world-class research infrastructures.

ID: H2020-INFRADEV-1-2015-1
Published: 11 December 2013
Updated: 23 July 2014
Deadline: **14 January 2015**
Budget: €97 million

Topics
 INFRADEV-3-2015
 Individual implementation
 and operation of ESFRI projects

ID: H2020-INFRADEV-1-2015-1
 Published: 11 December 2013
 Updated: 23 July 2014
 Deadline: **21 April 2015**
 Budget: €6 million

Topics
 INFRADEV-2-2015:
 Preparatory Phase of ESFRI
 projects

INFRADEV-3-2015 and INFRADEV-2-2015 – Single stage

e-Infrastructures

The focus is on the following priorities:

❖ Integrating e-infrastructure resources and services across all layers (networking, computing, data, software, user interfaces).
❖ Implementing the e-infrastructure to ride the wave of "big data".
❖ Providing support to the e-infrastructure for Open Access as defined in the Communication on Scientific Information.
❖ Implementing the e-infrastructure part of the EU strategy on High Performance Computing (HPC).

ID: H2020-EINFRA-2015-1

Published: 11 December 2013

Deadline: **14 January 2015**

Budget: €82 million

Topics

EINFRA-9-2015: e-Infrastructures for virtual research environments (VRE)

EINFRA-5-2015: Centres of Excellence for computing applications

Support to innovation, human resources, policy and international cooperation 1/2

The focus is on fostering the innovation potential and developing the human resources of RIs especially in areas that suffer from shortages in supply or where new skills and professions need to emerge, e.g. in 'data science'. It will also aim at reinforcing European RIs policy and international cooperation.

ID: H2020-INFRASUPP-2015-1

Published: 11 December 2013

Updated: 23 July 2014

Deadline: 21 April 2015

Budget: €14 million

Topics
INFRASUPP-2-2015:
Innovative procurement pilot action in the field of scientific instrumentation

ID: H2020-INFRASUPP-2015-1

Published: 11 December 2013

Updated: 23 July 2014

Deadline: 14 January 2015

Budget: €2.5 million

Topics
INFRASUPP-4-2015:
New professions and skills for e-infrastructures

INFRASUPP-6-2014 – International cooperation for RIs

Main focus on joint development, exploitation and management of world-class Research Infrastructures:

- Bilaterally with a single third country at policy level
- multi-laterally with different third countries targeting specific R&I aspects of RI
- Multi-laterally with different third countries in the context of a specific world class research infrastructure.

RUSSIA

- Support bilateral cooperation on research infrastructures with Russia. The proposal will in particular help develop cooperation between European research infrastructures and the **Russian Megascience** facilities, including the underpinning e-infrastructure.

- Support multi-lateral cooperation on research infrastructures in one or several of the following areas: **Arctic research, marine science, biodiversity, food research and medicine.** Particular emphasis will be made on cooperation with USA, Canada (including for implementing the Transatlantic Research Alliance, launched by the Galway Statement on Atlantic Ocean Cooperation) and **Russia**, without excluding other relevant countries such as Australia and New Zealand.

6 mega science projects in Russia

- **Tokamak fusion reactor IGNITOR** (Russia-Italy joint project open to accession of other international partners),

  Troitsk Institute for Innovation & Fusion Research (TRINITI).

- **High-flux research nuclear reactor** (**PIK)**

  St.-Petersburg Institute of Nuclear Physics in Gatchina (in

  partnership with Germany and with probable involvement of North

  European and Baltic States).

- **Synchrotron light source, Multiturn Accelerator-Recuperator Source (MARS),** National Research Centre "Kurchatov Institute"

- **NICA**, **Nuclotron** based Ion Collider Facility, Joint Institute for Nuclear Research, Dubna.

- **Sub-Exawatt Laser based International Research Centre on Extreme Light Fields**, Institute of Applied Physics of the Russian Academy of Sciences (IAP RAS), Nizhny Novgorod

- **Electron-Positron Collider** Super C-Tau Factory Project,

  www.themegallery.com

  Budker Institute of Nuclear Physics, Novosibirsk.

International Mega science projects with the Russian participation

http://www.kiae.ru/pages/main/5354/5917/index.shtml

❖ International thermonuclear experimental reactor (**ITER**) http://www.iter.org

❖ European **XFEL** (http://www.xfel.eu/en/)

❖ The Large Hadron Collider (http://public.web.cern.ch/public/en/LHC/LHC-en.html)

❖ Facility for Antiproton and Ion Research (**FAIR**) http://www.fair-center.de/index.php?id=1

❖ A large volume detector for low energy neutrino spectroscopy Borexino

FP7 projects in the area of RIs with Russian partners

345 projects FP7-INFRA supported by EC
26 projects with 50 Russian organizations

Acronyms: EURORIS-NET, NMI3, **PRE-XFEL,** SEADATANET, FAIR, ERICON-AB, HIPER, **EUCARD**, MONDILEX, EGI-INSPIRE, VAMDC, DEGISCO, SIOS-PP EUROPLANET RI   NMDB, HILUMI LHC, PESI, EUCARD, SEADATANET II, ORIENTPLUS GLORIA LAGUNA-LBNO UP-GRADE BS-SCENE

Russian National Contact Point for RIs

Established: **22nd February 2007 by the Russian Ministry of Education and Science on the basis of the National University of Science and Technology "MISIS" (MISIS)**

Main mission: to facilitate the cooperation between EU and Russia in the field of Research Infrastructures.

How to contact FP7 RI NCP

Research Infrastructures NCP
Contact information

THANK YOU FOR YOUR ATTENTION

Dr. **Marine Melkonyan** (Coordinator)

Research Infrastructures NCP

National University of Science and Technology «MISIS»

119049 Moscow, Leninsky prospect, 4

Tel.: +7-495-955-00-26

Fax.: +7-499-236-21-05

E-Mail: fp7-infra@misis.ru

Web: www.fp7-infra.ru