European
Commission

# Research Infrastructures and Horizon 2020

*The EU Framework Programme for Research and Innovation 2014-2020*

**Christos VASILAKOS**

**DG Research & Innovation**
**1st CoPoRI Workshop on EoE**
**11-12 June 2012**
**Hamburg, DE**

HORIZON 2020

Research and Innovation

**Europe 2020** Strategy for smart, sustainable and inclusive growth

- (5 targets) **3% of the EU's GDP to be invested in R&D**
- 7 flagship initiatives

    **Innovation Union,** flagship initiative

    - 34 detailed commitments

**European Research Area**

✓ **EU Multiannual Financial Framework for 2014-2020** (Commission proposal)

✓ **Horizon 2020,** EU Framework Programme for Research and Innovation 2014-2020

- Priorities >> actions

# What is Horizon 2020

*Commission proposal for a 80 billion euro research and innovation (including EIT activities) funding programme (2014-2020)*

*Part of proposals for next EU budget, complementing Structural Funds, education, etc.*

*A core part of Europe 2020, Innovation Union & European Research Area:*

- Responding to the economic crisis **to invest in future jobs and growth**
- Addressing peoples' concerns **about their livelihoods, safety and environment.**
- Strengthening the EU's global position **in research, innovation and technology**

# Horizon 2020, three priorities:

1. **Excellent science**

2. **Industrial leadership**

3. **Societal challenges**

# Priority 1. Excellent science

*Why:*

- World class science is the foundation of tomorrow's technologies, jobs and wellbeing

- Europe needs to develop, attract and retain research talent

- Researchers need access to the **best Research Infrastructures**

# Contributing to the European Research Area (ERA)

- ERA framework proposal in 2012 to create a single market for knowledge research and innovation

- Complemented by Horizon 2020:

  - Boosting support to ERA priorities – mobility, **infrastructures**, knowledge transfer, policy learning;

  - Stronger partnerships with Member States and private sector to invest more efficiently;

  - Taking account of gender, ethical issues, researcher careers and open access to results.

# Proposed funding (million euro, 2014-2020)

| | |
|---|---|
| **European Research Council** <br> Frontier research by the best individual teams | *13 268* |
| **Future and Emerging Technologies** <br> Collaborative research to open new fields of innovation | *3 100* |
| **Marie Curie actions** <br> Opportunities for training and career development | *5 572* |
| **Research infrastructures** *(including* **e-infrastructures***)* <br> Ensuring access to world-class facilities | **2 478** |

**Research Infrastructures** are facilities, resources and related services, where basic research as well as applied research are interacting to generate innovations for our daily life

This includes:

➢ major scientific equipment (or sets of instruments);

➢ knowledge-based resources such as collections, archives or scientific data;

➢ e-infrastructure, such as data, computing and software systems;

➢ Extending the frontiers of knowledge
➢ Exchanging and transmitting knowledge
➢ Training the next generation of top researchers
➢ Supporting industrial innovation

# 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**

- To become an **international** partner

# Commitments within Innovation Union

- *« By 2015 (…) have completed or launched the construction of **60%** of the priority European research infrastructures currently identified by the **ESFRI** (…).*

- *« … **opening of Member State operated research infrastructures** to the full European user community…»*

- *« The European Union should step up its cooperation on the roll-out of the **global** research infrastructures. By 2012, **agreement** should be reached with **international partners** on the development of research infrastructures, including ICT infrastructures, which owing to cost, complexity and/or interoperability requirements can only be developed on a global scale»*

European Commission

# Research Infrastructures: overview

1. Developing the European RIs for 2020 and beyond
   - 1.1 Developing **new world-class RIs**
   - 1.2 **Integrating** and **opening national RIs** of **pan-European interest**
   - 1.3 Development, deployment and operation of ICT based **e-Infrastructures**

**Main actions**

2. Fostering the **innovation** potential of RIs & their **human capital**

**Specific actions**

3. Reinforcing European RI **policy** and **International Cooperation**

**Policy actions**

Research and Innovation

# 1.1 Developing new world-class RIs

- **Objective:** To ensure the implementation, long-term sustainability and operation of the ESFRI and other world-class RIs

- **EU funding will support:**

  ✓ the **preparatory phase** of future RIs (e.g. detailed construction plans, legal arrangements, multiannual planning, etc.)

  ✓ the **implementation phase** (e.g. R&D and engineering work, etc.)

  ✓ development of **Regional Partner Facilities** in synergy with DG REGIO actions (structural funds and social funds)

  ✓ the **operation phase** (e.g. access, data handling, outreach, training and international cooperation activities)

  ✓ **design studies** for new RIs through a bottom-up approach

# 1.2 Integrating and opening existing national RIs of pan-European interest

- **Objective:** The aim is to **open up key national RIs** to all European researchers and to ensure their **optimal use** and **joint development**

- **EU funding** will support **"European Research Infrastructures Networks"** bringing together RIs in a given field covering:

  - ✓ **Transnational** and **virtual access** activities

  - ✓ **Networking** activities to foster a culture of cooperation

  - ✓ **Joint research** activities to **improve the services** provided by the infrastructures

# Horizon 2020

➢ *continue to support **Transnational Access** to national RI of European interest;*

➢ *contribute to the **operation costs** of ESFRI and other world class RIs;*

➢ *support **access** with a more flexible approach;*

➢ *different ways to calculate **cost access** will be foreseen.*

*In addition*

- *Stakeholders will be consulted by the end of 2012*
- *Send comments/contributions to*

   *Jean-Emmanuel.Faure@ec.europa.eu*

# 1.3 Development, deployment and operation of ICT based e-Infrastructures

- **Objective:** To achieve by 2020 a single and **open European space** for online research

- **EU funding** will support :

  - ✓ Global research and education networks

  - ✓ Grid and cloud infrastructures

  - ✓ Ecosystem of supercomputing facilities progressing towards exa-scale

  - ✓ Software and service infrastructure for visualisation and simulation

  - ✓ Real-time collaborative tools for virtual research communities

  - ✓ Interoperable, open and rich scientific data infrastructure

Research and Innovation

# 2. Fostering the innovation potential of RIs and their human capital

## 2.1 Exploiting the innovation potential of RIs

- To stimulate **innovation** both in the RIs themselves and in their supplier and user industries:
  - ✓ R&D partnerships with industries to develop Union capacities in high-tech areas such as scientific instrumentation
  - ✓ pre-commercial procurement by RI actors
  - ✓ stimulate the use of RIs by industry
  - ✓ Encourage the integration of RIs into local, regional and global innovation ecosystems

## 2.2 Strengthening the human capital of RIs

- To develop adequate skills for the managers, engineers and technicians, as well as users
  - ✓ Support for the training of staff managing and operating RIs, exchanges of staff
  - ✓ Exchanging of best practices between facilities

# 3. Reinforcing European RI policy and international cooperation

## 3.1 Reinforcing European policy for RIs

- To exploit synergies between national and Union activities:
  - ✓ Partnerships between relevant policymakers and funding bodies
  - ✓ Supporting synergies with other policies (e.g. REGIO, EMPL)
  - ✓ Surveys, monitoring and assessments of RIs at Union level
  - ✓ Policy studies and communication tasks

## 3.2 Facilitate strategic international cooperation

- To facilitate the development of global RIs
  - ✓ Cooperation of European RIs with their non-European counterparts:
  - ✓ Ensuring their global interoperability and reach
  - ✓ Pursuing international agreements on the reciprocal use, openness or co-financing of RIs

# From FP7 to Horizon 2020

- An **increased budget**, from around €1.7 billion (FP7) to €2.5 billion (Horizon 2020 – 2011 constant prices)

- New activities to support the **implementation** and **operation** of world-class research infrastructures such as **ESFRI** infrastructures

- **Continuation** of the successful FP7 **Integrating Activities**

- **Reinforcement** of the support to **e-infrastructures**

- New objective of better exploiting the **innovation potential** and **human capital** of infrastructures

# Next steps

**Ongoing:**     Parliament and Council negotiations on the basis of the Commission proposals

**Ongoing:**     Parliament and Council negotiations on EU budget 2014-2020 (including overall budget for Horizon 2020)

**Mid 2012:**     Final calls under 7th Framework Programme for research to bridge gap towards Horizon 2020

**Mid 2013:**     Adoption of legislative acts by Parliament and Council on Horizon 2020

**1/1/2014:**     **Horizon 2020 starts, launch of first calls**

# Thank you for your attention!

## Find out more:

**www.ec.europa.eu/research/horizon2020**

The views expressed are those of the speaker and cannot be regarded as stating an official position of the European Commission.

*Research and Innovation*