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# Horizon 2020 and upcoming opportunities of FP7

Carlo Guaraldo

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#### HORIZON 2020: DEFINITION

"Horizon 2020", the Framework Programme for Research and Innovation, brings together

1. the successor of the 7<sup>th</sup> Framework Programme

#### Framework Programmes (FP)

Since 1984, research and innovation activities of the EU are grouped in one big multi-annual programme, the Framework Programme (FP) for Research and Technical Development.

#### HORIZON 2020: DEFINITION

"Horizon 2020", the Framework Programme for Research and Innovation, brings together

- 1. the successor of the 7<sup>th</sup> Framework Programme
- 2. the successor to the **Competitiveness and Innovation Framework Programme (CIP)** comprising:
  - the innovation-related parts of the Entrepreneurship and Innovation Programme (EIP)
  - The Information Communication Technologies Policy Support Programme (ICT-PSP)
  - The Intelligent Energy Europe Programme (IEE)

#### **Competitiveness and Innovation Framework Programme (CIP)**

- The Competitiveness and Innovation Framework Programme
- supports innovation activities (including ecoinnovation)
- provides better access to finance and
- delivers business support services in the regions targeting mainly small and medium-sized enterprises (SMEs).

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"Horizon 2020", the Framework Programme for Research and Innovation, brings together

- 1. the successor of the 7<sup>th</sup> Framework Programme
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  - the innovation-related parts of the Entrepreneurship and Innovation Programme (EIP)
  - the Information Communication Technologies Policy Support Programme (ICT-PSP)
  - the Intelligent Energy Europe Programme (IEE)
- 3. the European Institute of Innovation and Technology (EIT)

#### European Institute for Innovation and Technology (EIT)

EIT is an Institute of the European Union established in March 2008 to increase European **sustainable growth and competitiveness** 

- by reinforcing the innovation capacity of the Member States and the EU
- by developing a new generation of innovators and entrepreneurs.

The EIT has created integrated structures, **Knowledge Innovation Communities (KICs)** which link the Higher Education, research and business sector one to another, boosting innovation and entrepreneurship. **The KICs focus on priority topics with high societal impact**.

#### **REASONS BEHIND HORIZON 2020**

Europe faces a series of crucial challenges:

- Low growth
- Insufficient innovation
- Environmental and societal challenges.

How to address these challenges:

- 1. by identifying **key problems**
- 2. by underpinning **structural problems**
- 3. by exploiting the **experience from previous programmes.**

#### 1. Key problem driver

• Science and innovation are key factors that will help Europe move towards smart, sustainable, inclusive growth, and along the way tackle its pressing societal challenges.

#### 2. Underpinning structural problems

- Insufficient contribution of research and innovation to tackle societal challenges
- Insufficient technological leadership and innovation capacity of firms
- Need to strengthen basic science

#### 3. Experience from previous programmes

- Extensive experience accumulated through the implementation of FP, CIP and EIT
- EU research and innovation programmes have been successful in involving Europe's and world's best researchers and public and private institutes
- EU research and innovation programmes have produced large-scale structuring effects, scientific, technological and innovation impact, micro-economics benefits and downstream macro-economic, social and environmental impact in and for all EU Member States.

#### HORIZON 2020: STRUCTURE

Horizon2020 is structured around **three complementary** and **interlinked priorities**:

- **1. Excellent Science**
- 2. Industrial Leadership
- 3. Societal Challenges

#### 1. Excellent science

- This block is designed to meet the **needs of the scientific community** and to **develop talent** within Europe and **attract leading researchers** to Europe.
- The priorities will largely be identified by scientists.
- The block includes:

- the European Research Council (ERC)

#### **European Research Council (ERC)**

The first pan-European funding agency for frontier research.

It aims to **stimulate scientific excellence** in Europe by encouraging competition for funding between the very best, creative researchers of any nationality, age and theme.

The ERC's three funding schemes are:

- Starting Grants
- Advanced Grants
- Synergy Grants.

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  - the European Research Council (ERC)
  - investment in Future and Emerging Technologies (FET)

# **Future and Emerging Technologies (FET)**

FET are the **incubators and pathfinders for new ideas** and themes for long-term research in the area of **Information and Communication Technologies** (ICT), to promote high risk research with high technological and societal impact.

In particular:

- **FET Open** aims at fostering new ideas, collaborative research for embryonic, high risk visionary science and technology
- **FET Proactive** aims at nurturing emerging themes and communities
- **FET Flagship** addresses projects on a global scale, tackling interdisciplinary science and technology challenges.

#### 1. Excellent science

- This block is designed to meet the **needs of the scientific community** and to **develop talent** within Europe and **attract leading researchers** to Europe.
- The priorities will largely be identified by scientists.
- The block includes:
  - the European Research Council (ERC)
  - investment in Future and Emerging Technologies (FET)
  - the Marie Curie Actions (MCA)

#### Marie Curie actions (MCA)

The main objective of the MCA is to strengthen:

- training
- career prospects
- mobility

of European researchers.

#### 1. Excellent science

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- The priorities will largely be identified by scientists.
- The block includes:
  - the European Research Council (ERC)
  - investment in Future and Emerging Technologies (FET)
  - the Marie Curie Actions (MCA)
  - the Research Infrastructures (RI)

#### **Research Infrastructures (RI)**

Research infrastructures refer to:

- major scientific equipment or set of instruments
- knowledge based-resources such as collections, archives or structured scientific information
- enabling ICT-based infrastructures such as Grid, computing, software and communications
- any other entity of a unique nature essential to achieve excellence in research.
- Support will be provided for:
  - integrating activities
  - e-infrastructures.

#### Research Infrastructures (RI): integrating activities

Integrating activities aim:

- to provide a wider and more efficient access to, and use of, the research infrastructures
- to structure better and integrate, on a European scale, the way research infrastructures operate
- to foster their joint development in terms of capacity and performance.

#### This action will follow:

- a **bottom-up** approach to respond to the needs of the scientific community in all fields of science and technology
- a targeted approach to respond to strategic research needs.

#### **Research Infrastructures (RI):** integrating activities

Normally an Integrating Activity is expected to include several research infrastructures providing access.

An Integrating Activity shall combine, in a closely co-ordinated manner:

- Networking activities
- Trans-national access and/or service activities
- Joint research activities.

All three categories of activities are **mandatory** as **synergistic effects** are expected from these different components.

#### 2. Industrial Leadership

This block supports **innovative companies focusing on research and innovation** to achieve **industrial leadership** in **key enabling technologies** 

- promoting technologies like:
  - nanotechnologies
  - advanced materials
  - biotechnologies
  - advanced manufacturing and processing
  - space
- granting access to risk finance
- promoting innovation in SMEs

#### 3. Societal challenges

This block supports activities **from research to market**, including among others:

- R&D projects
- application of key technologies (e.g., ICT, nano, bio)
- pilot and demonstration projects.

EU-level action is important to build the **critical mass** of resources and competences required for addressing European and global challenges.

#### 3. Societal challenges

The block is focused on **6 societal challenges**:

- 1. Health, demographic change and well-being
- 2. Food security, sustainable agriculture, marine and maritime research and bio-economy
- 3. Secure, clean and efficient energy
- 4. Smart, green and integrated transport
- 5. Climate action, resource efficiency and raw materials
- 6. Inclusive, innovative and secure societies.

#### PRELIMINARY ALLOCATION OF RESOURCES

The funding for Horizon2020 amounts to about **€ 80 billion** which represents a **46% increase with comparable funding** under the Multi-annual Financial Framework (MFF) **2007-2013**.

#### PRELIMINARY ALLOCATION OF RESOURCES

BLOCKS	PRELIMINARY AMOUNTS (in billion €)
Excellent Science	24.6 (25.15)
ERC (+77%)	13.2
FET	3.1 (3.4)
Marie Curie (+21%)	5.7
Research Infrastructures (+41%)	2.4 (2.8)
Industrial Leadership	17.9
Enabling technologies (ICT, nano, bio)	13.7
Risk finance	3.5
Innovation SMEs	0.619
Societal Challenges	31.7

# Upcoming opportunities within FP7 ERC Work Programme

#### **ERC types of grants**

- **Starting Grants**: to boost independent careers of excellent researchers (Principal Investigators)
- Advanced Grants: to encourage substantial advances at the frontier of knowledge by supporting excellent, leading advanced Principal Investigators
- **Synergy Grants**: to enable small groups of Principal Investigators and their teams to bring together complementary skills, knowledge and resources.

#### **Principles of ERC funding**

- Open to all fields of research
- Open to all researchers
  - Researchers from any country of the world
  - Research must be carried out in a Member State or in an Associated Country in a public or private institution (Host Institution)

#### - Any age with the only requirement that

- for Starting Grants: Principal Investigator must have been awarded his/her PhD between 2 and 12 year before the date of the publication of the call
- for Advanced Grants: Principal Investigator must have a trackrecord of significant achievements in the last 10 years
- for Synergy Grants: groups of 2 to 4 Principal Investigators with a designated Lead Principal Investigator.

#### Further eligibility criteria

- Regarding Synergy Grants:
  - It is expected that the ERC Synergy Groups will be interdisciplinary, often using multidisciplinary approaches. To be interdisciplinary and multidisciplinary are not obligatory requirements for proposals, but are strongly recommended.

#### **Attractive long-term funding**

- Starting Grants: up to € 1.5 million, for a period up to 5 years
- Advance Grants: up to € 2.5 million, for a period up to 5 years
- Synergy Grants: up to € 15 million, for a period up to 6 years

An ERC Grant can cover up to 100% of the total eligible direct costs of research and a flat rate financing of indirect costs on the basis of 20% of total eligible direct costs.

#### **Role of Host Institution**

- The ERC Grant is awarded to the Institution that engages and hosts the Principal Investigator or Lead Principal Investigator
- Host Institutions explicitly commit to offer appropriate conditions to the Principal Investigator to, independently:
  - apply for funding
  - manage the research and the funding for the project and make appropriate resource allocation decisions
  - publish as senior author
  - supervise team members
  - have access to appropriate space and facilities.

# **Upcoming Calls**

- The 2013 **Starting Grant** Call will be split in two separate calls:
  - Starter Grant: Principal Investigator must have been awarded a PhD between 2 and 7 years before the date of the publication of the call Call publication date: 10 July 2012

Expected deadline: 17 October 2012

 Consolidator Grant: Principal Investigator must have been awarded a PhD between 7 and 12 years before the date of the publication of the call Call publication date: 7 November 2012 Expected deadline: 21 February 2013

#### Synergy Call

Call publication date: Autumn 2012 Expected deadline: January 2013

# Thank you for your attention!