

HORIZON 2020 – FUNDING OPPORTUNITIES

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Abstract

Horizon 2020 is the biggest EU Research and Innovation programme with nearly €80 billion of funding available over 7 years (2014 to 2020). By coupling research and innovation, Horizon 2020 is helping to achieve sustainable growth and jobs in Europe with its emphasis on excellent science, industrial leadership and tackling societal challenges. The goal is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation. Important new feature of the Horizon 2020 is simplification of rules for participation and administrative procedures. New financing instruments are introduced to facilitate innovation uptake by SMEs. Measurements aiming at spreading excellence and widening participation of less research performing countries in European research activities will be implemented and synergies of Horizon 2020 with other financing sources (e.g. structural funds) will be supported.
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1 STRUCTURE OF THE HORIZON 2020

Horizon 2020 (H2020) is a single programme bringing together three former separate European programmes/initiatives – the 7th EU framework programme (FP7), Competitiveness and Innovation Programme (CIP) and European Institute for Innovation and Technology (EIT). H2020 facilitates coupling research to innovation and supports all forms of innovations, not only technological but as well social ones. H2020 focuses on solving societal challenges facing EU society e.g. health, food security, clean energy and transport. The H2020 programme is open to all kind of entities (academia, industry, SMEs, individual researchers) and participants from third (non-EU) countries.

The H2020 programme is structured into three main pillars: Excellent science, Industrial Leadership and Societal challenges (Fig.1). Moreover, horizontal measurements are implemented to contribute to spreading excellence and widening participation and better interlink science with society. Part of the H2020 budget is reserved to activities of the Joint research centre (JRC) – a network of research institutes providing research to support EU policies, to activities of the European Institute of Innovation and Technology and Euratom programme focusing on nuclear research.

The **Excellent science** part of the H2020 will support research and innovation activities in several directions:

European research council (ERC): supports frontier research, cross disciplinary proposals and pioneering ideas in new and emerging fields which introduce unconventional and innovative approaches. The ERC's mission is to encourage the highest quality research in Europe through competitive funding and to support investigator-driven frontier research across all fields of research, solely on the basis of scientific excellence.

Future and emerging technologies (FET): FET actions are expected to initiate radically new lines of technology through unexplored collaborations between advanced multidisciplinary science and cutting-edge engineering.

Marie Skłodowska Curie Actions (MSCA): the objective of the MSCA is to support the career development and training of researchers, with a focus on innovation skills, in all scientific disciplines

through worldwide and cross-sector mobility. The MSCA provide grants at all stages of researchers' careers, from PhD candidates to highly experienced researchers.

Research Infrastructures: the H2020 will foster the emergence of new research facilities, opening up broad access to national and European infrastructures. The networks of research infrastructures across Europe will provide world-class training for a new generation of researchers and engineers and promote interdisciplinary collaboration.

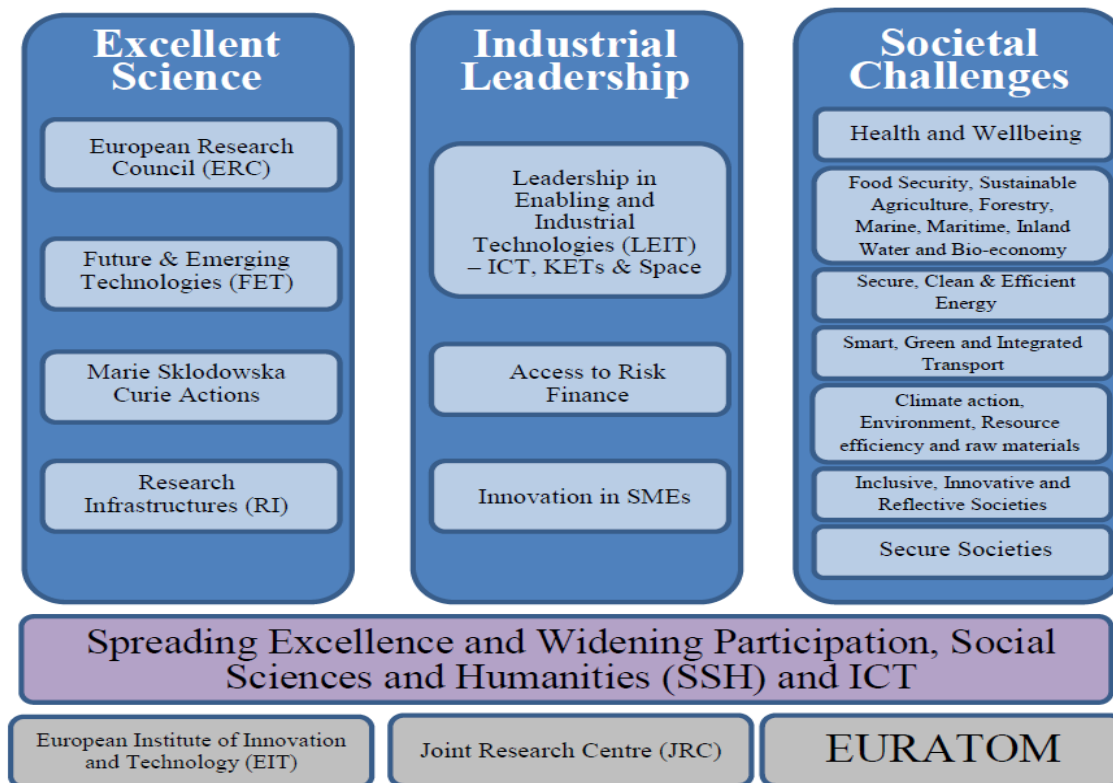


Fig.1 Structure of Horizon 2020

Industrial leadership pillar of H2020 aims to foster development of the technologies and uptake of innovations that will help European SMEs to grow in the global markets.

"Leadership in enabling and industrial technologies" will provide dedicated support for research, development and demonstration and, where appropriate, for standardisation and certification. Focus is on information and communications technology (ICT), nanotechnology, advanced materials, biotechnology, advanced manufacturing and processing and space.

"Access to risk finance" will aim to overcome deficits in the availability of debt and equity finance for research and innovation-driven companies and projects at all stages of development.

"Innovation in SMEs" actions will stimulate all forms of innovation in SMEs with the potential to grow and will facilitate access to debt and equity financing.

Societal challenges in H2020 address major concerns of European society. This pillar of H2020 will cover activities from research to market with a new focus on innovation-related activities, such as piloting or demonstration.

Funding will focus on the following societal challenges:

- Health, demographic change and wellbeing;
- Food security, sustainable agriculture and forestry, marine and maritime and inland water research, and the Bioeconomy;
- Secure, clean and efficient energy;
- Smart, green and integrated transport;
- Climate action, environment, resource efficiency and raw materials;
- Europe in a changing world - inclusive, innovative and reflective societies;
- Secure societies - protecting freedom and security of Europe and its citizens

2 HORIZONTAL ACTIVITIES IN H2020

Horizon 2020 introduces specific measures for **spreading excellence and widening participation**. The measures called Teaming, Twinning and ERA-chairs are targeted at low-performing member states in terms of research and innovation. The **Teaming** action supports associating advanced research institutions to other institutions, agencies or regions for the creation or upgrade of existing centres of excellence.

Teaming will help strengthen a defined field of research in a knowledge institution through linking with at least two internationally-leading counterparts in Europe.

The **ERA Chairs** scheme will provide support for universities and other research institutions to attract and maintain high quality human resources and implement the structural changes necessary to achieve excellence on a sustainable basis.

Science with and for society part of H2020 aims at building effective cooperation between science and society, recruitment new talent for science and to pair scientific excellence with social awareness and responsibility.

3 TYPES OF ACTIONS IN H2020

Detailed characteristics of types of actions which can be implemented in H2020 are given in the General annex of the workprogramme. There are several types of actions (funding schemes) in H2020. The type of action for each called topic is given at the topic description in the workprogramme. The most frequently used types of action are:

- **Research and Innovation actions**

Action primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. For this purpose they may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment.

Projects may contain closely connected but limited demonstration or pilot activities aiming to show technical feasibility in a near to operational environment.

- **Innovation actions**

Action primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

- **Coordination and Support actions**

Actions consisting primarily of accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies, including design studies for new infrastructure and may

also include complementary activities of strategic planning, networking and coordination between programmes in different countries.

- **SME instrument**

The SME instrument is targeted at all types of innovative SMEs showing a strong ambition to develop, grow and internationalise. It provides staged support covering the whole innovation cycle in three phases complemented by a mentoring and coaching service. Transition from one phase to the next will be seamless provided the SME project proves to be worth further support in a further evaluation. Each phase is open to new entrants.

In addition there are specific types of action in H2020, aimed at specific target groups:

- **ERA-NET Cofund**

ERA-NET Cofund under Horizon 2020 is designed to support public-public partnerships, including joint programming initiatives between Member States, in their preparation, establishment of networking structures, design, implementation and coordination of joint activities as well as Union topping-up of a trans-national call for proposals.

- **Pre-Commercial Procurement (PCP) Cofund actions**

PCP cofund actions aim to encourage public procurement of research, development and validation of new solutions that can bring significant quality and efficiency improvements in areas of public interest, whilst opening market opportunities for industry and researchers active in Europe.

- **Public Procurement of Innovation Solutions (PPI) Cofund actions**

The objective of PPI cofund actions is to enable groups of procurers to share the risks of acting as early adopters of innovative solutions, whilst opening market opportunities for industry.

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