

II Programma Horizon 2020 (in a nutshell)

THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

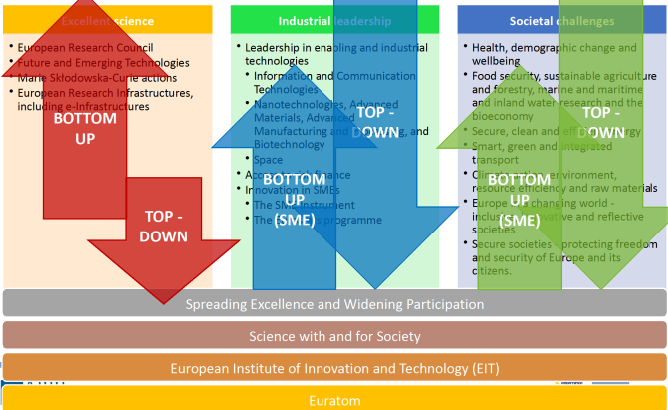
€13 095 million

Supporting world leading scientists in frontier research

Research and Innovation

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Horizon 2020 approach



What are the main ERC principles?

1 researcher; 1 host institution; 1 project; 1 selection criterion: scientific excellence

No consortia, no networks, no co-financing

Applications can be made in any field of research, including social sciences and humanities

Independent researchers from anywhere in the world, of any age and career stage can apply

Host institutions must provide conditions for the researcher to direct the research and manage its funding (member state or associated country)

The grant is 'portable' to another host institution, if the grantholder wishes so

Research must be carried out in one of the 28 EU member states or associated countries

THE FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

Almost €80 billion research and innovation funding programme (2014-2020)

What type of grants does the ERC fund





FET OPEN

FET Open calls for collaborative research and innovation actions that satisfy the FET Open 'gatekeepers', which are:

- ambitious scientific and technological breakthrough goal,
- foundational character,
- high degree of novelty,
- high-risk,
- long-term vision,
- deep synergistic interdisciplinary approach.

FET programme

- **FET Open** funds *projects on new ideas for radically new future technologies*, at an early stage when there are few researchers working on a project topic. This can involve a wide range of new technological possibilities, inspired by cutting-edge science, unconventional collaborations or new research and innovation practices.
- **FET Proactive** nurtures emerging themes, seeking *to establish a critical mass of European researchers in a number of promising exploratory research topics*. This supports areas that are not yet ready for inclusion in industry research roadmaps, with the aim of building up and structuring new interdisciplinary research communities.
- **FET Flagships** are 1-billion, 10-years initiatives where hundreds of excellent European researchers unite forces to *focus on solving an ambitious scientific and technological challenge*, like understanding the Human Brain or developing the new materials of the future, such as Graphene.

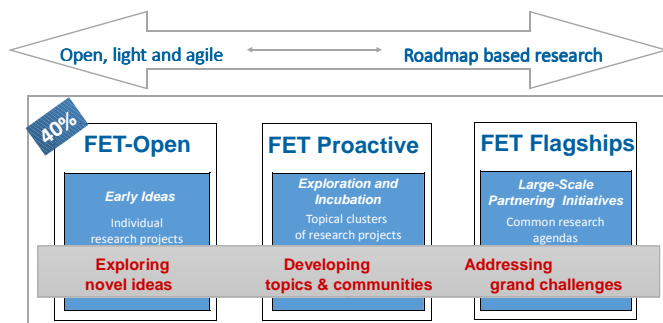
FET PROACTIVE

FET Proactive helps new research communities to be developed by encouraging researchers from different disciplines to work together on new technologies in specific domains.

In addition to research, FET Proactive activities also include:

- generating a research roadmap for the area,
- developing appropriate educational materials, and
- disseminating results to raise the general awareness of the new technology benefits.

FET Funding Schemes



FET FLAGSHIP

Flagships are visionary, science-driven, large-scale research initiatives addressing grand Scientific and Technological (S&T) challenges. They are long-term initiatives bringing together excellent research teams across various disciplines, sharing a unifying goal and an ambitious research roadmap on how to achieve it.



Bottom-up approach

Research fields are freely chosen by the applicants, except:

- research activity aiming at human cloning for reproductive purposes
- research activity intended to modify the genetic heritage of human beings which could make such changes heritable
- research activities intended to create human embryos solely for the purpose of research or for the purpose of stem cell procurement, including by means of somatic cell nuclear transfer
- areas of research covered by the EURATOM Treaty

APRE logo and slide number 16 are in the footer.

Definitions

Participants are organisations from the academic or the non-academic sector. These two sectors are defined as follows:

Academic sector	Non-academic sector
<ul style="list-style-type: none"> • public or private HEI awarding academic degrees, • public or private non-profit research organisations, • international European interest organisations 	<ul style="list-style-type: none"> • any socio-economic actor not included in the academic sector definition

Inter-sector collaboration is indicated between the two sectors.

APRE logo and slide number 14 are in the footer.

MSCA

ITN- Innovative Training Network
 Innovative networks supporting early-stage training
 Early-Stage Researchers (Including Industrial doctorates & Joint doctorates)

IF- Individual Fellowship
 Experienced Researchers Individual fellowship supporting experienced researchers undertaking mobility

RISE- Research Innovation Staff Exchange
 Exchange of Staff International and inter-sector cooperation through research and innovation staff exchange

COFUND
 Co-funding Co-funding of regional, national and international programmes funding doctoral and postdoctoral researchers

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Researchers

Early-stage researchers (ESR)	Experienced researchers (ER)
<ul style="list-style-type: none"> • be in the first four years (<i>full-time equivalent research experience</i>) of their research careers • and have not been awarded a doctoral degree. 	<ul style="list-style-type: none"> • be in possession of a doctoral degree • or have at least four years of full-time equivalent research experience.

Full-time equivalent research experience is measured from the date when a researcher obtained the degree which would formally entitle him or her to embark on a doctorate

APRE logo and slide number 15 are in the footer.



Research Infrastructures

- The term 'research infrastructures' refers to facilities, resources and related services used by the scientific community to conduct top-level research in their respective fields, ranging from social sciences to astronomy, genomics to nanotechnologies.
- RIs may be 'single-sited' (a single resource at a single location), 'distributed' (a network of distributed resources), or 'virtual' (the service is provided electronically).

Building Industrial Leadership in Europe

Examples of RIs

- CERN, the world's largest particle physics laboratory
- The European Mouse Mutant Archive (EMMA), is a typical example of a distributed infrastructure. It consists of a large scale repository of mouse lines.
- The GÉANT high-speed network is just one of many examples of e-Infrastructure initiatives launched to facilitate cooperation among researchers

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HORIZON 2020

**€13 557
million**



Leadership in enabling & industrial technologies (LEITs)

DRIVES - INDUSTRIAL HIGH-TECH - RE-INDUSTRIALISING THE EU - HIGH-QUALITY JOBS - FROM LAB

Research and
Innovation

What the RIs Programme does cover

1. Developing the European RIs for 2020 and beyond
 - Developing new world-class RIs
 - Integrating and opening national and regional RIs of European interest;
 - Development, deployment and operation of ICT based e-infrastructures:
2. Fostering the innovation potential of RIs and their human resources
3. Reinforcing European RI policy and international cooperation

What are the KETs? Key Enabling Technologies

The Commission defines KETs as "knowledge intensive and associated with high R&D intensity, rapid innovation cycles, high capital expenditure and highly skilled employment. They enable process, goods and service innovation throughout the economy and are of systemic relevance. They are multidisciplinary, cutting across many technology areas with a trend towards convergence and integration. KETs can assist technology leaders in other fields to capitalise on their research efforts"

* Current situation of key enabling technologies in Europe, SEC (2009)

Photonics

Manufacturing

Biotechnology

Advanced Materials

Micro/Nanoelectronics

Nanotechnologies

ICT LEIT PRIORITY

Six main activity lines have been identified in the ICT-LEIT part of the Work Programme:

- A new generation of components and systems
- Advanced Computing
- Future Internet
- Content technologies and information management
- Robotics
- Micro- and nano-electronic technologies, Photonics



SPACE-LEIT PRIORITY

- Prioritising the existing two EU Space flagships of European Global Navigation Satellite System (EGNSS) and Earth Observation reaping the benefits they can generate in the coming years and ensuring their state-of-the-art also in the future;
- Ensuring support for the third priority of the EU space policy: the protection of space infrastructure, and in particular the setting up of a Space Surveillance and Tracking system (SST) at European level;
- Ensuring support to EU industry to meet the objectives defined in the Commission communication on Space Industrial Policy, notably to maintain and enhance industry's competitiveness and its value-chain in the global market;
- Ensuring that Europe's investments made in space infrastructure are exploited to the benefit of citizens; as well as supporting European space science; and
- Enhancing Europe's standing as an attractive partner for international partnerships in space science and exploration.



NMPB LEIT PRIORITY

- This part of the programme covers different areas :
- Nanotechnologies
- Advanced materials
- Advanced manufacturing and processing
- Biotechnology



THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

€7 472 million



Better health for all

PREVENTING DISEASE - BETTER DIAGNOSTICS AND TREATMENTS - AGEING WELL - SUSTAINABLE HEALTH

Research and innovation

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THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

€6 339 million



Smart, Green & Integrated Transport

EFFICIENT TRANSPORT - NEXT GENERATION OF INFRASTRUCTURES - BETTER MOBILITY - MOBILITY FOR ALL

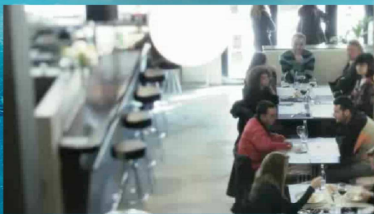
Research and innovation

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THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

€3 851 million



Making the best of our biological resources for food security and sustainable growth

BLUE GROWTH - BIOECONOMY - GREEN GROWTH - FOOD SECURITY - RENEWABLE BIOLOGICAL RESOURCES

Research and innovation

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THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

€3 081 million



Climate action, environment, resource efficiency & raw materials

CLIMATE ACTION - SUSTAINABLE SUPPLY OF RAW MATERIALS - LOW CARBON ECONOMY - MANAGING WATER RESOURCES

Research and innovation

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THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

€5 931 million

Clean, safe, reliable & affordable energy

Secure, clean & efficient energy



Research and innovation

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THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

€1 310 million



Inclusive, innovative & reflective societies

INCLUSIVE AND INCLUSIVE GROWTH - CONTRIBUTING TO THE EUROPEAN RESEARCH AREA - STUDYING NEW

Research and innovation

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THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

€1 695 million

Cyber security

Natural hazards

Safeguarding a secure society

ICE BUILDING - COMPETITIVENESS - FIRST RESPONDERS - FIGHT AGAINST CRIME AND TERRORISM

Research and Innovation

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THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

eit European Institute of Innovation & Technology

Integrating higher education with Research & Innovation

Research and Innovation

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Other actions

APRE

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Concept

The EIT promotes and integrates higher education, research and innovation of the highest standards (= the knowledge triangle)

research

business/innovation

higher education

<http://eit.europa.eu/>

APRE

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THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

€816 million

EXCELLENCE

Widening participation

Research and Innovation

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THE EU FRAMEWORK PROGRAMME FOR RESEARCH AND INNOVATION

HORIZON 2020

€462,2 million

Science with & for society

Research and Innovation

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Associated Countries

As of 07 November 2016, the following countries are Associated to Horizon 2020:

- Iceland
- Norway
- Albania
- Bosnia and Herzegovina
- the former Yugoslav Republic of Macedonia
- Montenegro
- Serbia
- Switzerland
- Turkey
- Israel
- Moldova
- Faroe Islands
- Ukraine
- Tunisia
- Georgia
- Armenia

1. Who can participate?

Any legal entity, regardless of its place of establishment, or international organization.

2. How can participate?

- (a) at least three legal entities shall participate in an action;
- (b) three legal entities shall each be established in a different Member State or associated country; and
- (c) the three legal entities referred to in point (b) shall be independent of each other.

International Cooperation

In case of a participating legal entity established in a **third country not eligible for funding**, funding from the Union may be granted provided that at least one of the following conditions is fulfilled:

- a) The participation is deemed essential for carrying out the action
- b) Such funding is provided for under a bilateral scientific and technological agreement

3. Who is eligible for funding?

- (a) any legal entity established in a Member State or **associated country***, or created under Union law;
- (b) any international European interest organisation;
- (c) any legal entity established in a **third country** identified in the work programme (Annex A).

Third countries not eligible

Industrialised countries: for instance US, Canada, Republic of Korea, Singapore, Australia, Taiwan, New Zealand, Macao, San Marino, Monaco, Andorra, Vatican, etc.

Emerging economies: BRIC+M Brazil, Russia, India, China and Mexico

Type of Project

RIA – Research and innovation actions

- **Description:** 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.

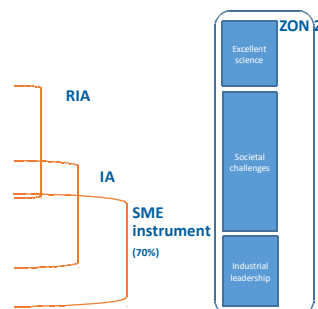
Simplified Funding Model

- **1 reimbursement rate** by action (same rate for all beneficiaries and all activities):
 - Up to **100%** for Research and Innovation actions
 - Up to **70%** for innovation (non-profit entities up to 100%) and programme co-fund actions
- 1 method for calculation of **indirect costs**:
 - **Flat rate of 25%** of total direct costs, excluding subcontracting, costs of third parties and financial support to third parties
 - If provided in WP, lump sum or unit costs
- Funding of the action not exceed **total eligible costs minus receipts**

IA – Innovation Actions

- **Description:** 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.
- A 'demonstration or pilot' aims to validate the technical and economic viability of a new or improved technology, product, process, service or solution in an operational (or near to operational) environment, whether industrial or otherwise, involving where appropriate a larger scale prototype or demonstrator.
- A 'market replication' aims to support the first application/deployment in the market of an innovation that has already been demonstrated but not yet applied/deployed in the market due to market failures/barriers to uptake. 'Market replication' does not cover multiple applications in the market of an innovation that has already been applied successfully once in the market.
- 'First' means new at least to Europe or new at least to the application sector in question. Often such projects involve a validation of technical and economic performance at system level in real life operating conditions provided by the market.

Technology Readiness Level



Coordination support actions

- **Description:** 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 networking and coordination between programmes in different countries.

Eranets Cofund

- The main and compulsory activity of the ERA-NET Cofund under Horizon 2020 is the implementation of the co-funded joint call for proposals that leads to the funding of transnational research and/or innovation projects. The call is normally based on a call for proposals resulting in grants to third parties, but may also cover calls for proposals for governmental lump sum research organisations based on in-kind contributions from their institutional funding. In this case the beneficiaries carry out trans-national projects partially or fully themselves. The in-kind contributions are the resources allocated as direct expenditure in the selected transnational projects that are not reimbursed by the Union contribution.

- Funding rate:** The Union contribution will be limited to a maximum of 33% of the total eligible costs of the action. The Union contribution to the costs for support to trans-national projects is limited to one call per grant agreement

The SME Instrument

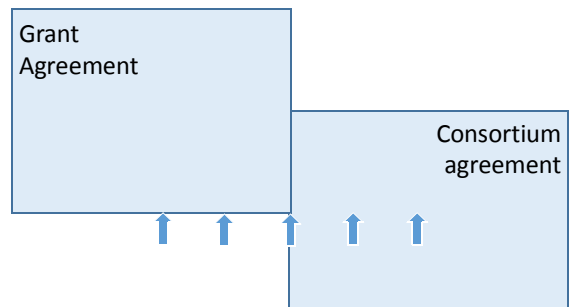
SEAMLESS BUSINESS INNOVATION SUPPORT FROM IDEA TO MARKET...



Pre-Commercial Procurement (PCP) Cofund actions & Public Procurement of Innovative Solutions (PPI)

- Pre-Commercial Procurement (PCP) Cofund actions** The objective of a PCP action is to enable the public sector as a technologically demanding buyer to encourage research, development and validation of breakthrough solutions that can bring radical quality and efficiency improvements in areas of public interest.
- Public Procurement of Innovative Solutions (PPI) Cofund actions** The objective of a PPI action is to reinforce early deployment of innovative solutions that address challenges of public interest. The aim is to enable transnational buyer groups of procurers to share the risks of acting as early adopters of innovative solutions and to overcome the fragmentation of demand for innovative solutions in Europe. Each PPI action focuses on one concrete unmet need that is shared by the participating procurers and requires the deployment of innovative solutions that are to a significant extent similar across countries and are therefore proposed to be procured jointly.

Legal frame



Prizes

- Recognition prizes** (Nobel Prize, DG INFSO's "ICT Prize", ...) = riconoscimento di meriti scientifici
- Inducement Prizes** = competizione che attribuisce un premio al raggiungimento di un obiettivo specifico (Ortieg Prize, Ansari X-Prize, ...). L'importo del premio non è legato al costo di realizzo dell'obiettivo

Which conditions for costs to be eligible?

- they must be actually incurred by the beneficiary;
- they must be incurred in the period of the action;
- they must be indicated in the estimated budget;
- they must be incurred in connection with the action and necessary for its implementation;
- they must be identifiable and verifiable;
- they must comply with the applicable national law on taxes, labour and social security, and
- they must be reasonable, justified and must comply with the principle of sound financial management, in particular regarding economy and efficiency.

Eligible costs

- A. direct personnel costs;
- B. direct costs of subcontracting;
- C. other direct costs;
 - Travel costs and related subsistence allowances
 - equipment, infrastructure or other assets
 - Costs of other goods and services
- E. indirect costs.

VALORIZZAZIONE E DIFFUSIONE DEI RISULTATI (Art. 43)

OBBLIGO DI 'OPEN ACCESS' ALLE PUBBLICAZIONI SCIENTIFICHE

(sia **GREEN** che **GOLD** Open Access)
DISCIPLINATO DALLE CONDIZIONI GENERALI DEL GRANT AGREEMENT
ELEGGIBILITA' DEI COSTI RELATIVI

Intellectual Property Rights

RESULTS (artt. 41-44)

RISULTATI

PROPRIETA': chi genera i risultati ne è il proprietario (mantenuto il regime di default nel caso di COMPROPRIETA')

PROTEZIONE: se risultati suscettibili di sfruttamento commerciale/industriale. SE il proprietario non può/vuole proteggere, può farlo la CE

SFRUTTAMENTO: il WP/GA possono prevedere obblighi specifici (es. 'Draft dissemination and exploitation plan' in fase di proposta)

TRASFERIMENTO E LICENZE ESCLUSIVE A PAESI TERZI: diritto di obiezione da parte della CE

PAGAMENTI

I pagamenti sono effettuati al Coordinatore secondo le seguenti modalità:

- ✓ **pre-finanziamento** entro 30 giorni dall'entrata in vigore del contratto o 10 giorni prima della data d'inizio del progetto (si sceglie la data più tardiva)
- ✓ una **trattenuta pari al 5% del totale del grant**, destinata al **Fondo di Garanzia**, viene effettuata alla fonte sull'ammontare del prefinanziamento
- ✓ **pagamento/i intermedi** a rimborso dei costi eleggibili dichiarati entro 90 giorni dalla ricezione del *periodic report*; il pagamento intermedio è condizionato all'approvazione del *periodic report*
- ✓ **pagamento finale** successivamente all'approvazione del rapporto finale

Il pre-finanziamento + i pagamenti periodici **non possono superare il 90% dell'importo totale del grant**

IN CASO DI RITARDATO PAGAMENTO rispetto ai termini contrattuali, i beneficiari hanno diritto agli interessi maturati calcolati al tasso applicato dalla BCE nelle sue operazioni di rifinanziamento maggiorato di 3,5 punti

ACCESS RIGHTS TO BACKGROUND & RESULTS (ar 45-49)

DIRITTI DI ACCESSO

- **PARTECIPANTI ALLA STESSA AZIONE** PER IMPLEMENTAZIONE E SFRUTTAMENTO (E LORO AFFILIATI STABILITI IN STATI MEMBRI O ASSOCIATI)
- **UNIONE EUROPEA** PER MOTIVI NON-COMMERCIALI E POLITICI

PREVISIONI SPECIFICHE

- SICUREZZA, ERC, SME INSTRUMENT, MARIE CURIE, KICS, ETC...

NUOVI STRUMENTI H2020

- MAGGIORE FLESSIBILITA' PER PRE-COMMERCIAL PROCUREMENT, PROCUREMENT OF INNOVATIVE SOLUTIONS E PREMI

PRE-FINANCING

DA CONCORDARE, NO REGOLE FISSE
PER PROGETTI ≥ 2 REPORTING PERIODS:
GENERALMENTE IL 100% DEL CONTRIBUTO UE MEDIO
PER PERIODO (eg. MAX EC CONTRIBUTION/n.
REPORTING PERIODS)

Certificate on the financial statements

The certificate on the financial statements shall cover the total amount of the grant claimed by a participant.

The certificate shall be submitted only when that amount is equal to or greater than **EUR 325 000** at the time of claiming the payment of the balance of the grant.

Audit (GRANT AGREEMENT ART. 22.1.3)

La Commissione può condurre AUDIT durante
l'implementazione dell'azione o successivamente,
ENTRO **DUE ANNI** DAL PAGAMENTO FINALE

OBBLIGO DI CONSERVARE LA DOCUMENTAZIONE **FINO A**
CINQUE ANNI DALLA FINE DEL PROGETTO!!!