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HORIZON EUROPE: A ROOM FOR EXCELLENCE

XXXIV INTERNATIONAL SCHOOL 'FRANCESCO ROMANO' OF NUCLEAR, SUBNUCLEAR AND ASTROPARTICLE PHYSICS

MONOPOLI – 18/09/23

OUTLINE

- **Lesson1- ORIENTATION**

- Lesson 2 - Principles of EU Projects Planning and Development
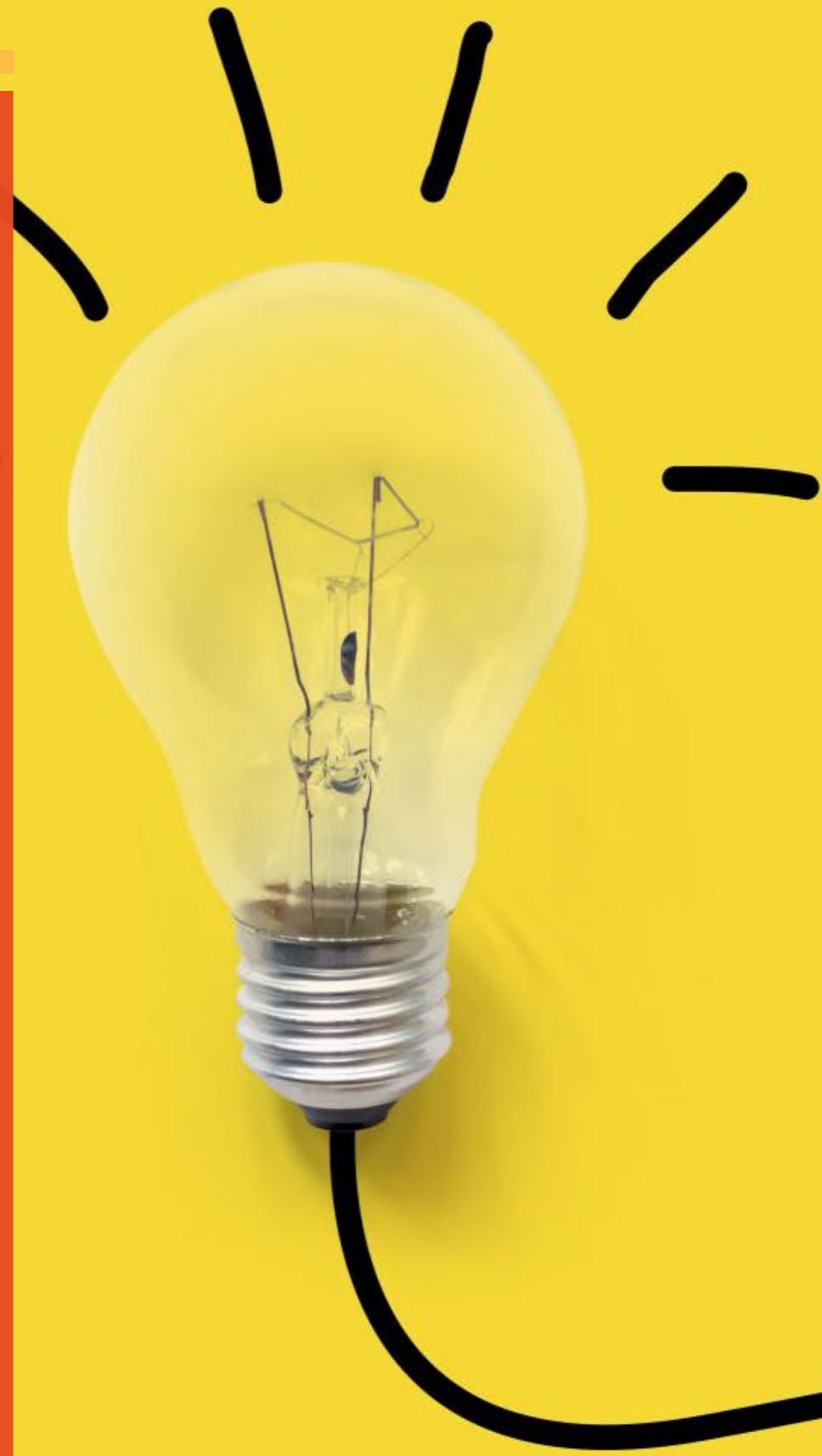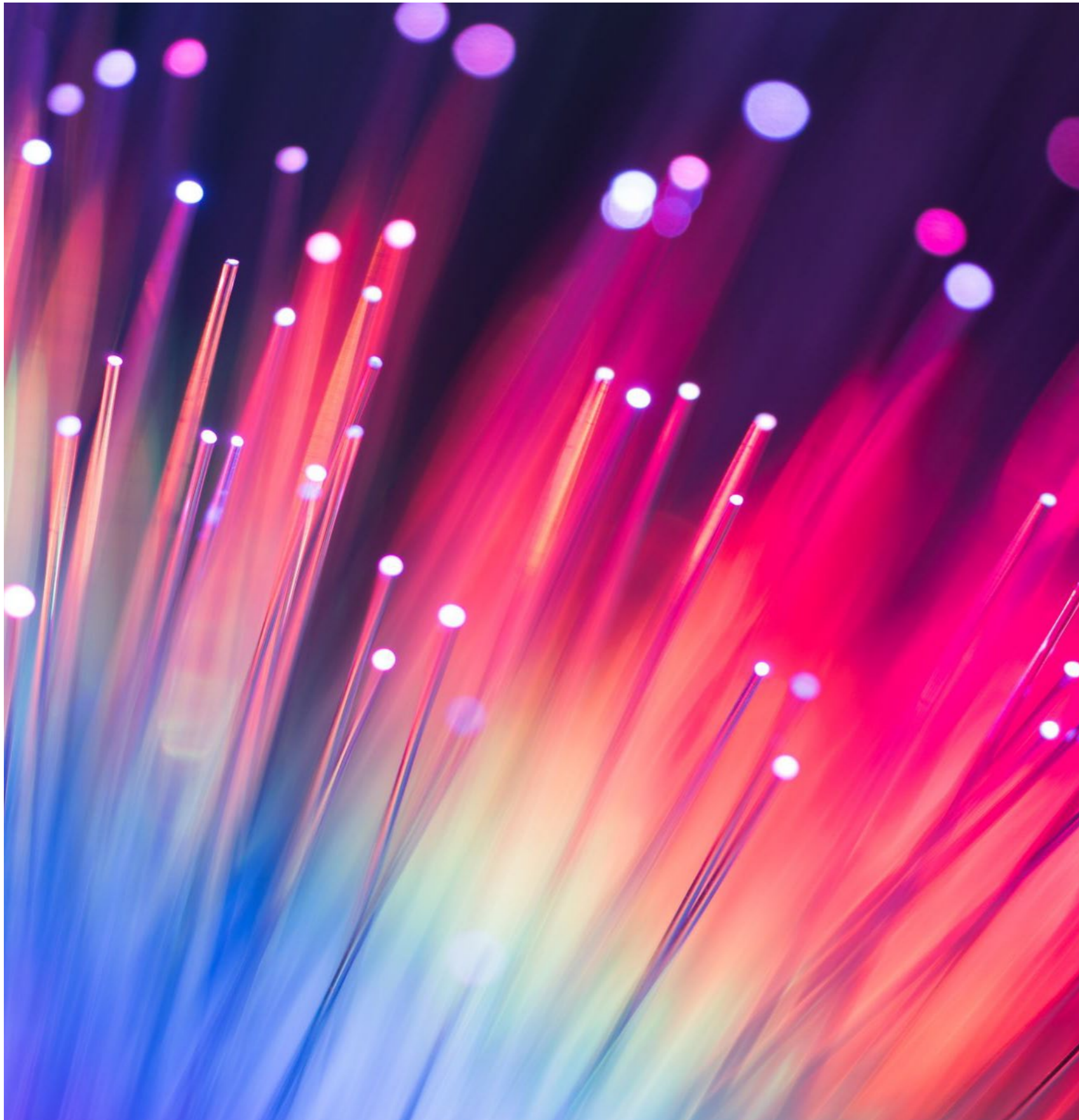
A FEW
DEFINITIONS

RESARCHERS

Researchers are:

"Professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems, **and in the management of the projects concerned.**"

(European Commission's definition)

ACADEMIC SECTOR

Academic sector means:

public or private higher education establishments awarding academic degrees, public or private non-profit research organisations1 and International European Research Organisations (IERO)

(EuropeanCommission's definition)

Doctoral Training Stage → Postdoctoral Stage (2-10 years) → Independent Research Stage → Established Researcher (Professors, Research Professor, Director, Senior Scientist, etc.)

"STANDARD" RESEARCH PATH

NATIONAL CAREER SYSTEMS

Academic/research career system are regulated at national level, in terms of:

type of positions

requirements to access positions

number of positions

content of work/duties related to each position

recruitment procedures

Promotion/competition regulations and career paths

Salary level

NATIONAL CAREER SYSTEMS

Common points:

✓ Generally a doctorate is mandatory to access post-docs and higher academic/research positions

✓ Limited positions

✓ Limited ordinary funds
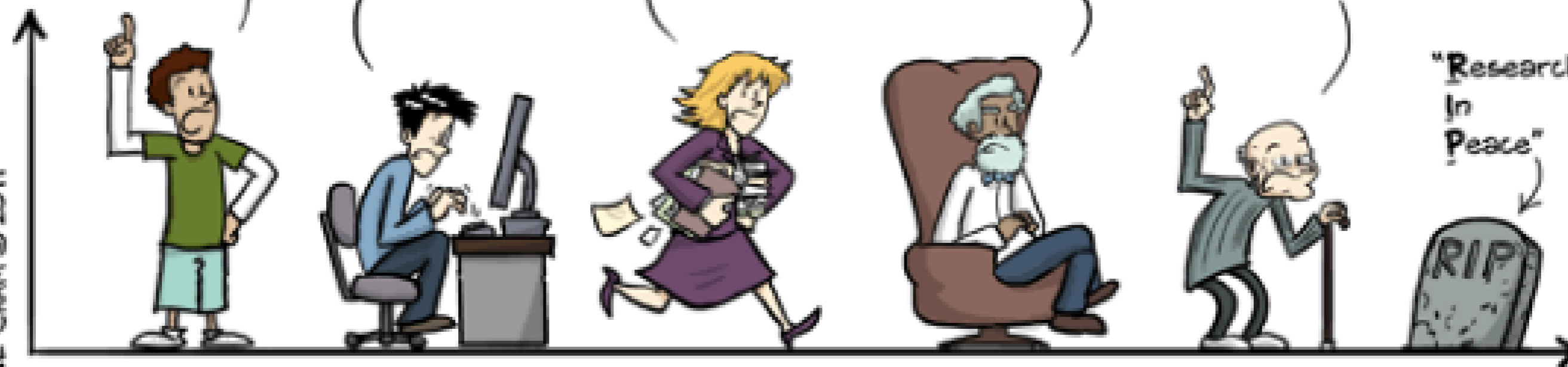
THE EUROPEAN CHARTER & CODE FOR RESEARCHERS

"In order to keep the 'right' workers in the academic system, a research careers has to be attractive"

THE EUROPEAN CHARTER & CODE FOR RESEARCHERS

In 2005, the European Commission adopted a European Charter for Researchers and a Code of Conduct for the Recruitment of Researchers. These two documents, addressed to researchers as well as research employers and funders in both the public and private sectors, are key elements in the EU's policy to boost researchers' careers.

1447 organisations have endorsed the Charter & Code principles

THE EUROPEAN CHARTER FOR RESEARCHERS

The European Charter for Researchers is a set of general principles and requirements which specifies the roles, responsibilities and entitlements of researchers as well as of employers and/or funders of researchers.

It constitutes a framework for researchers, employers and funders which invites them to act responsibly and as professionals within their working environment, and to recognise each other as such.

THE CODE OF CONDUCT FOR THE RECRUITMENT OF RESEARCHERS

The Code of Conduct for the recruitment of researchers consists of a set of general principles and requirements that should be followed by employers and/or funders when appointing or recruiting researchers. These principles and requirements are complementary to those outlined in the European Charter for Researchers. Institutions and employers adhering to the Code of Conduct will openly demonstrate their commitment to act in a responsible and respectable way and to provide fair framework conditions to researchers, with a clear intention to contribute to the advancement of the European Research Area.

THE CODE OF CONDUCT FOR THE RECRUITMENT OF RESEARCHERS

aims at improving recruitment, to make selection procedures fairer and more transparent

proposes different visions of recruitment principles, selection criteria and judging merit measurement
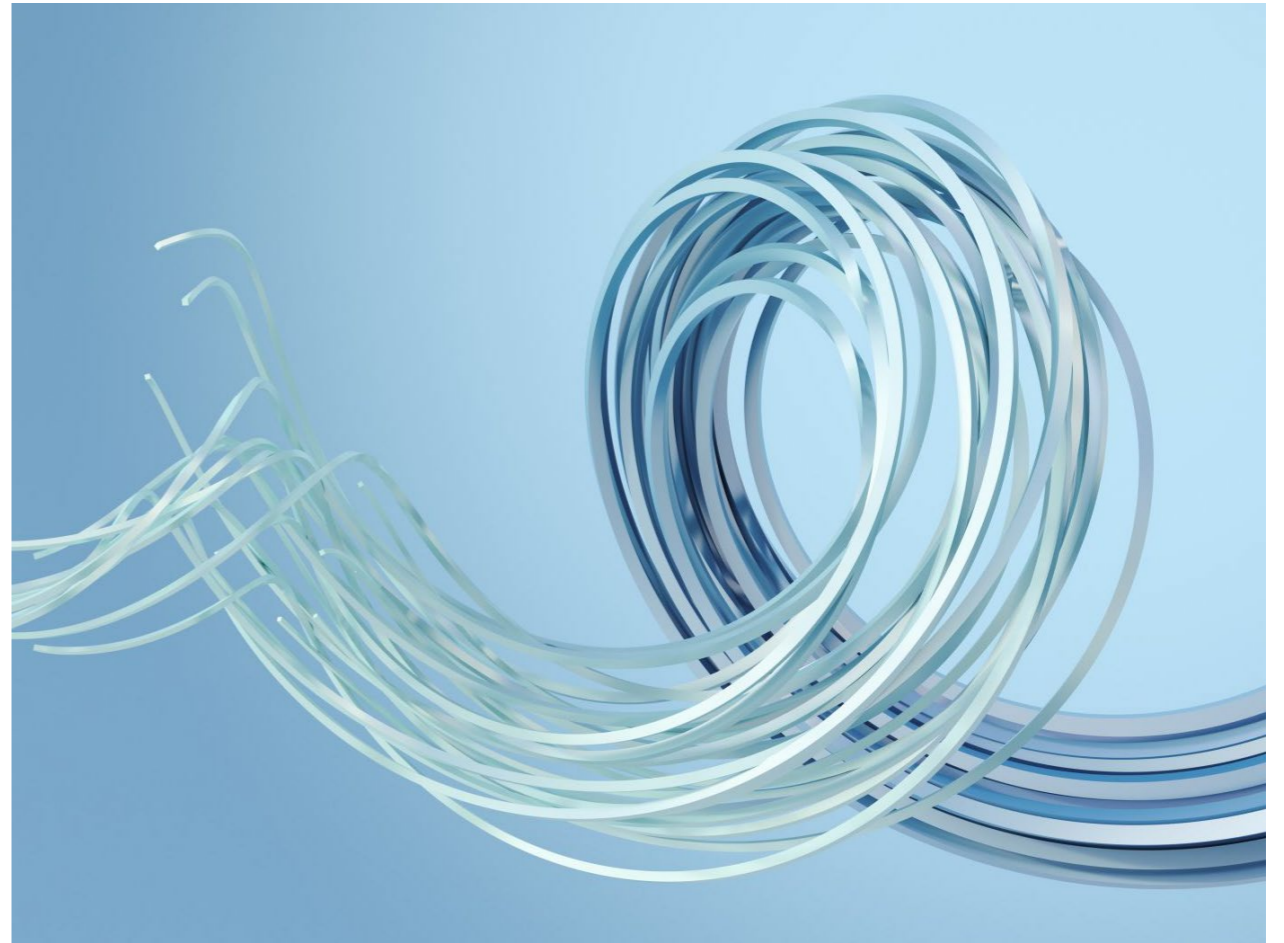
EURAXESS

*A unique pan-European initiative to **support researchers mobility and career development**, while enhancing scientific collaboration between Europe and the world.*

- coordinated by EU Commission, supported and implemented by Member States and Associated Countries
- **EURAXESS Jobs**: global access to vacancies and fellowships in EU - CV database for researchers
- **EURAXESS Services**: more than 200 services centres across EU (Visa and residence issues, social security, practical support)
- **EURAXESS Links**: linking researchers outside the EU

https://euraxess.ec.europa.eu

EXTERNAL FUNDING

Allow institutions to broaden number of positions

Allow researchers to look for more possibilities

Encourage internatonal mobility

Impact on society

Prestige for all the involved actors

INTRODUCTION TO EUROPEAN UNION & EUROPEAN POLICIES

THE EUROPEAN UNION

THE EUROPEAN UNION

- The European Union (EU) is NOT a federation (like the United States).

- NOR is it simply an organisation for co-operation between governments (like the United Nations).

- The European Union is unique.

- The countries that make up the EU (its Member States - MS) remain <u>independent</u> sovereign nations

- They <u>delegate</u> some of their decision-making powers to shared institutions which they themselves have created, so that decisions on specific matters of joint interest can be made democratically at European level

THE EUROPEAN UNION IN 2023:
27 MEMBER STATES - 447M PEOPLE
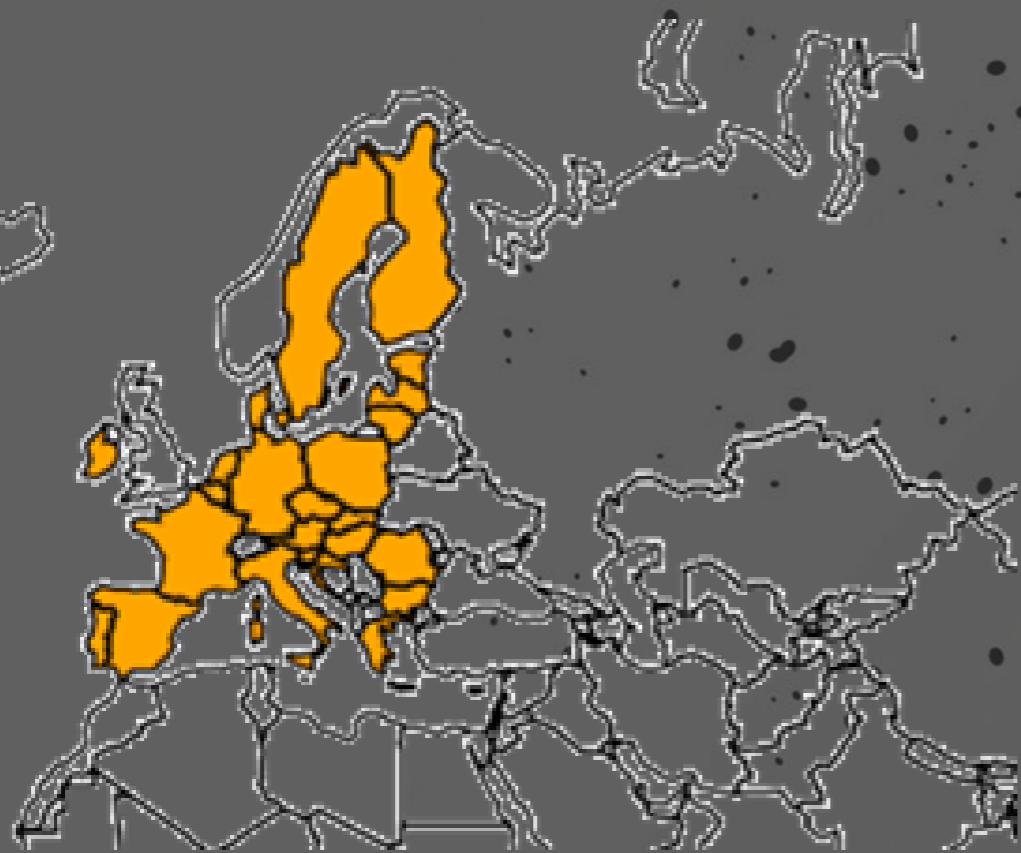
2020: Brexit

THREE KEY PLAYERS

The European Parliament
- voice of the people
Roberta Metsola, President of the European Parliament

The European Council and the Council
- voice of the Member States
Charles Michel, President of the European Council

The European Commission
- promoting the common interest
Ursula von der Leyen, President of the European Commission

THE EU INSTITUTIONS

European Council (summit)

3 main decision-making bodies of the EU

| European Parliament | Council of Ministers (The Council) | European Commission |

| Court of Justice | Court of Auditors | Economic and Social Committee | Committee of the Regions |

| European Investment Bank | Agencies | European Central Bank |

http://europa.eu/about-eu/institutions-bodies/index_en.htm

THE EUROPEAN COMMISSION

27 independent members (Commissioners), one from each EU country

+ **Executive body**
+ Exclusive right of initiative for legislative proposals
+ Ensures the correct implementation of legislation, administers the budget and is **responsible for framework and promotion programmes**
+ Guardian of the treaties: monitors compliance with EU laws and brings cases of possible non-compliance before the European courts
+ Represents the EU on the international stage

EC: DIRECTORATES-GENERAL AND SERVICES

The Commission is divided into several departments and services.

The Commission services deal with more general administrative issues or have a specific mandate, for example fighting fraud or creating statistics.

The departments are known as Directorates-General (DGs). Each DG is classified according to the policy it deals with.

Each DG covers a specific policy area or service such as External Relations or Translation and is under the responsibility of a European Commissioner. DGs prepare proposals for their Commissioners which can then be put forward for voting in the college of Commissioners.

AGENCIES AND OTHER EU BODIES

EU agencies are **distinct bodies** from the EU institutions – separate legal entities set up to perform specific technical, scientific or administrative tasks under EU law

They are divided in 4 groups:

- ✦ **Decentralised agencies** carry out technical, scientific or managerial tasks that help the EU institutions make and implement policies
- ✦ **Executive agencies** help the EU Commission to **manage EU programmes**
- ✦ European Atomic Energy Community Treaty (**EURATOM**) agencies created to coordinate national nuclear research programmes

- ✦ **European Institute of Innovation and Technology** (EIT): independent EU body which seeks to promote Europe's ability to develop new technologies, by pooling its best scientific, business and education resources

EU AGENCIES
The way ahead

EU EXECUTIVE AGENCIES

Executive Agencies are set up for a <u>limited period of time</u> by the EU Commission to manage specific tasks related to EU programmes
(ex. evaluation process, signing project agreements, financial management, monitoring of projects: intermediate and final reports, communication with beneficiaries, on the spot controls)

- ✦ Education, Audiovisual and Culture Executive Agency **(<u>EACEA</u>)**
- ✦ Executive Agency for Small and Medium-sized enterprises **(<u>EASME</u>)**
- ✦ **<u>European Research Council Executive Agency</u> (<u>ERCEA</u>)**
- ✦ Consumers, Health, Agriculture and Food Executive Agency **(<u>CHAFEA</u>)**
- ✦ **<u>Research Executive Agency</u> (<u>REA</u>)**
- ✦ **I**nnovation & Networks Executive Agency **(<u>INEA</u>)**

European Commission

Ursula von der Leyen
President

Maroš Šefčovič
Executive Vice-President
European Green Deal, Interinstitutional Relations and Foresight

Margrethe Vestager
Executive Vice-President
Europe fit for the Digital Age

Valdis Dombrovskis
Executive Vice-President
An Economy that Works for People

Nicolas Schmit
Commissioner
Jobs and Social Rights

Paolo Gentiloni
Commissioner
Economy

Johannes Hahn
Commissioner
Budget and Administration

Janusz Wojciechowski
Commissioner
Agriculture

Thierry Breton
Commissioner
Internal Market

Elisa Ferreira
Commissioner
Cohesion and Reforms

Stella Kyriakides
Commissioner
Health and Food Safety

Josep Borrell
High Representative/ Vice-President
A Stronger Europe In the World

Didier Reynders
Commissioner
Justice

Helena Dalli
Commissioner
Equality

Ylva Johansson
Commissioner
Home Affairs

Janez Lenarčič
Commissioner
Crisis Management

Margaritis Schinas
Vice-President
Promoting Our European Way of Life

Adina Vălean
Commissioner
Transport

Olivér Várhelyi
Commissioner
Neighbourhood and Enlargement

Jutta Urpilainen
Commissioner
International Partnerships

Kadri Simson
Commissioner
Energy

Virginijus Sinkevičius
Commissioner
Environment, Oceans and Fisheries

Mairead McGuinness
Commissioner
Financial Services, Financial Stability and Capital Markets Union

Věra Jourová
Vice-President
Values and Transparency

Dubravka Šuica
Vice-President
Democracy and Demography

A New Push for European Democracy

Iliana Ivanova

COMMISSIONER-DESIGNATE

Innovation, Research, Culture, Education and Youth

Address: Rue de la Loi / Wetstraat 200, 1049 Brussels, Belgium

Press contact

Responsibilities

- Ensuring efficient implementation on the **Horizon Europe programme**.
- Ensuring sufficient **investment flows for disruptive research and breakthrough innovations**, including through the European Innovation Council.
- Continuing to build a true **European Research Area** in cooperation with Member States.
- Ensuring that **research, policy and economic priorities go hand in hand**.
- Implementing **the Erasmus+ programme**.
- Leading the Commission's work on a **European Education Area** to become a reality by 2025.
- Promoting excellence and networking among European **universities** and implementing fully the **European University Initiative**.
- Implementing the **Digital Education Action Plan** and increasing awareness from an early age of **disinformation** and other **online threats**.
- Maximise the potential of the exchange programmes to foster **international cooperation** in education, research and innovation.
- Ensuring the full implementation of the **New European Agenda for Culture**, strengthening Europe's commitment **to preserving and protecting the cultural heritage**.
- Promoting **creative industries** as a catalyst for innovation, jobs and growth and maximise the potential of an ambitious Creative Europe Programme.
- Promoting **sport as a tool for inclusion and well-being**, continuing to expand the **#BeInclusive EU Sports Awards** and the **European Week of Sport**.
- Fostering **cultural cooperation** as a part of the Union's partnerships with countries around the world.

EUROPEAN STRATEGY 2019-2024

- European Strategic Agenda 2019-2024

WHY A EUROPEAN STRATEGY?

- **Economic interdependence:** need for joint EU responses and more economic policy coordination if EU is to weigh in global fora

- **The political momentum within the EU is clear:** problem analysis on urgency and need for more economic policy coordination is shared

- **Only the EU gives us the critical mass to have impact:**

    - Activate all policy areas and levers in an integrated way

    - Exchange best practice

- The priorities in the EU strategy set by the European Council and the European Commission guide the work on EU policies within a political context during a legislative mandate

EU COMMISSION PRIORITIES FOR 2019-2024

European Green Deal

Eu resource-efficient and competitive economy, while preserving Europe's natural environment, tackling climate change and making Europe carbon-neutral and resource efficient by 2050.

EU fit for the digital age

Digital transformation by investing in businesses, research and innovation, reforming data protection, empowering people with the skills necessary for a new generation of technologies and designing rules to match

EU COMMISSION PRIORITIES FOR 2019-2024

Stronger Europe in the world

Strong, open and fair trade, multilateralism and a rules-based global order. Enhancing relations with neighbouring countries and partners, building up the EU's ability to manage crises.

Economy that works for people

Reinforcing the EU economy, while securing jobs and reducing inequalities, supporting businesses.

EU COMMISSION PRIORITIES FOR 2019-2024

Promoting EU way of life

Fundamental rights, equality, tolerance and social fairness. Addressing security risks, protecting and empowering consumers, system for legal and safe migration, managing the EU's external borders, EU's asylum system

New push for European democracy

Strengthening Europe's democratic processes, protecting EU democracy from external interference, transparency and integrity legislative process, EU citizens engagement

EU FUNDING OPPORTUNITIES

EU NEXT LONG TERM BUDGET FOR 2021-2027

- **€ 1.074 trillion** combined with the temporary recovery instrument, NextGenerationEU (for Recovery Plan) , of € **750 billion**;

MFF 2021-2027 total allocations per heading

© European Union, 2020

|	MFF	NEXT GENERATION EU	TOTAL
1. Single Market, Innovation and Digital	132.8	10.6	143.4
2. Cohesion, Resilience and Values	377.8	721.9	1 099.7
3. Natural Resources and Environment	356.4	17.5	373.9
4. Migration and Border Management	22.7	-	22.7
5. Security and Defence	13.2	-	13.2
6. Neighbourhood and the World	98.4	-	98.4
7. European Public Administration	73.1	-	73.1
TOTAL MFF	**1 074.3**	**750.0**	**1 824.3**

Nov. 10th, 2020 agreement

THE BIG PICTURE

Politician → Policy → Funding source → Funding Programme →
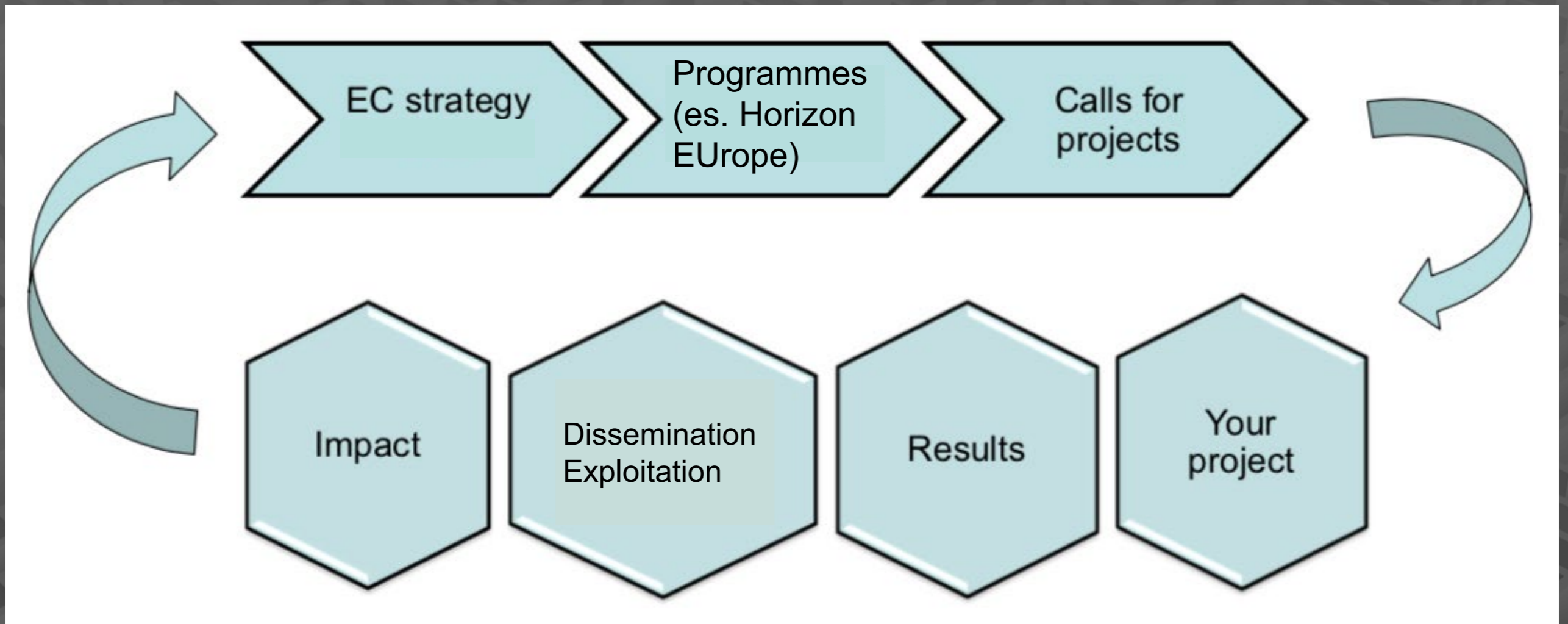
Politician ← Impact ← Your project ←

FUNDING EU POLICIES TARGETS

In order to achieve the targets pursued through the EU policies, a <u>wide range of Funding Programmes</u> are adopted providing to different types of beneficiaries financial support in the **fields related to the different EU policies**.
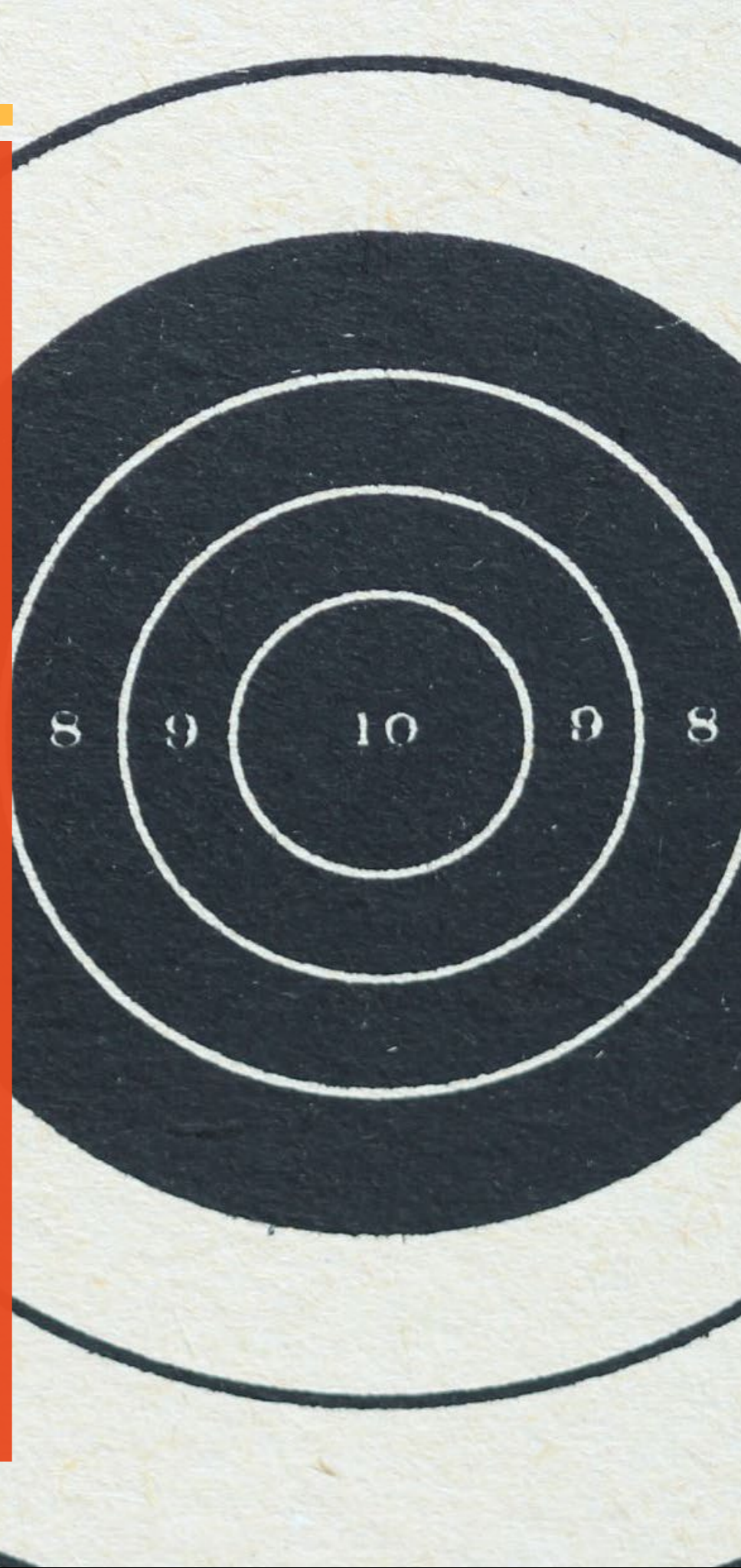
EU Funding Programmes

IMPORTANT

Funding follows Policy

Programmes exist to achieve EU priorities

Programmes are individual

different requirements, procedures, rules, management

Don't chase the money

(…at least not only the money   )

align your objectives with policy

EU COMMISSION: RECOVERY PLAN

To help repair the economic and social damage caused by the COVID pandemics

Research and Innovation (via Horizon Europe)

fair climate and digital transitions, via the Just Transition Fund and the Digital Europe Programme

preparedness, recovery and resilience, via the Recovery and Resilience Facility, rescEU and a new health programme, EU4Health

EU Funding Programmes

Two broad categories of EU funding programmes

direct funding
by EU Commission/Executive Agencies

- Direct management: Apply directly to Brussels
- Competitive bidding process
- transnational partnerships (with some exceptions)

supported by Europe policy

indirect funding
by National/Regional Authorities

- National multiannual allocation (funds from EU)
- Shared management: Apply at national/regional level

supported by Cohesion policy

but also

Financial Instruments (mix of EU and EIB/ local financing institutes)
direction of travel = move from grants to loans, venture capital
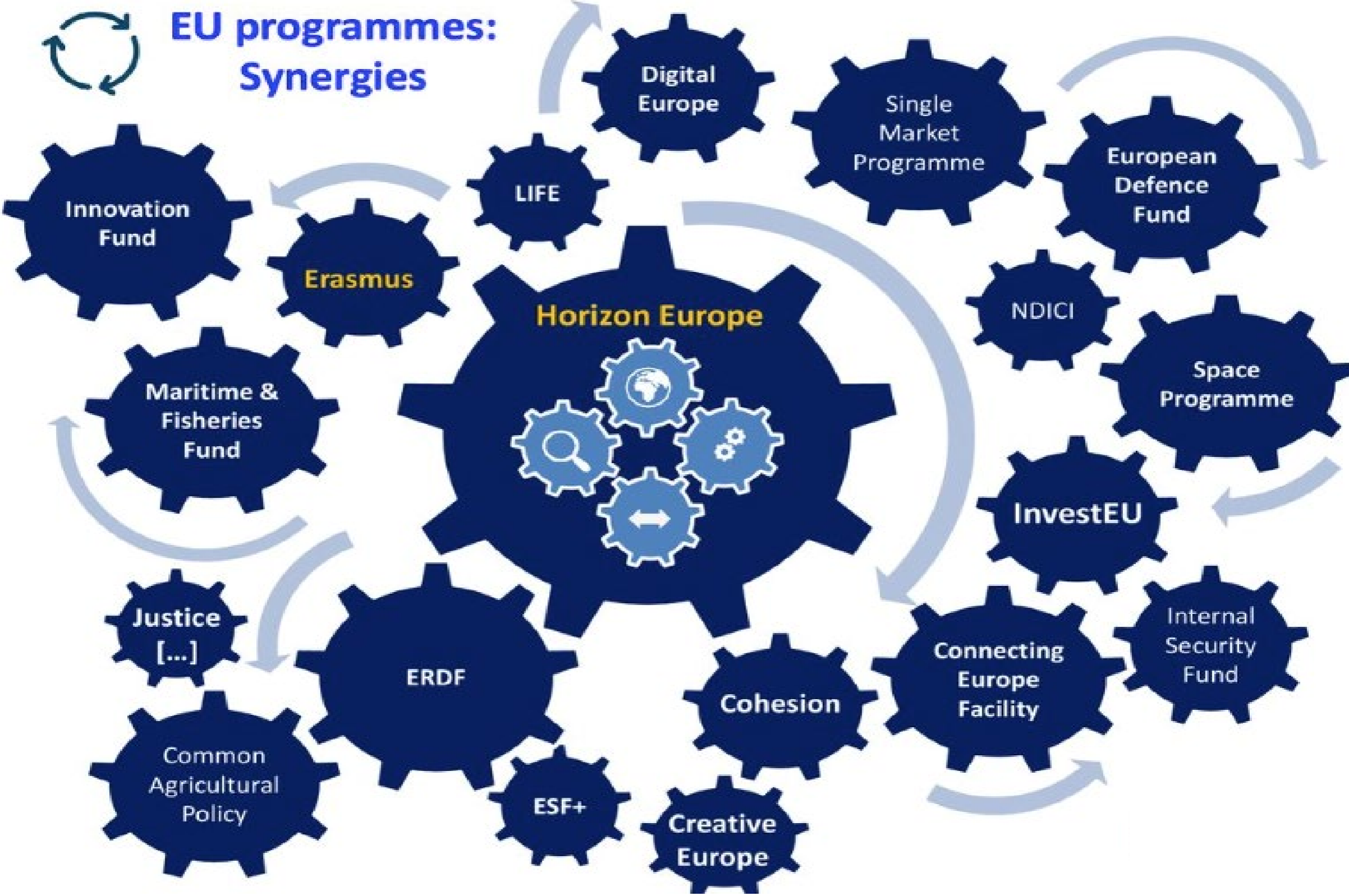
ORIENTATION:
CALLS &
OPPORTUNITIES

EUROPEAN FUNDING STRATEGIES AND OPPORTUNITIES

- FOCUS ON HORIZON EUROPE -

EU programmes: Synergies

Digital Europe · Single Market Programme · European Defence Fund · Innovation Fund · LIFE · Erasmus · NDICI · Maritime & Fisheries Fund · Horizon Europe · Space Programme · InvestEU · Justice [...] · ERDF · Cohesion · Connecting Europe Facility · Internal Security Fund · Common Agricultural Policy · ESF+ · Creative Europe

HORIZON EUROPE

«The Best Work Programme Ever»

The ambitious EU research and innovation framework programme (2021-2027)

to strengthen the EU's scientific and technological bases and the European Research Area (ERA)

to boost Europe's innovation capacity, competitiveness and jobs

to deliver on citizens' priorities and sustain our socio-economic model and values

HORIZON EUROPE

«The Best Work Programme Ever»

- The largest EU Research and Innovation programme ever for 2021-2027: € 95.5 billion (current prices)
- Structured in **three main pillars** to support Science and Innovation, but also to enhance access to excellence for researchers across Europe, to foster participation and collaboration, as well as promoting gender balance
- Horizon Europe will contribute to strenghten our scientific and technological base, to **provide new knowledge and develop innovative solutions** to overcome societal, ecological and economic challenges for healthier living, drive digital transformation and fight climate change
- Horizon Europe will foster the EU's industrial competiveness and its innovation performance, notably supporting market-creating innovation
- Horizon Europe helps researchers and top class innovators to develop and deploy their ideas

RESEARCH & INNOVATION

Basic Resarch

- and applied research create **new knowledge**

- studies the **foundations of phoenomena**

- has freedom to set the path to its objectives

"[...] without any particular application or use in view - no seeking economic or social benefits or making an active effort to apply the results to practical problems or to transfer the results to sectors responsible for their application." (OECD, Frascati Manual)
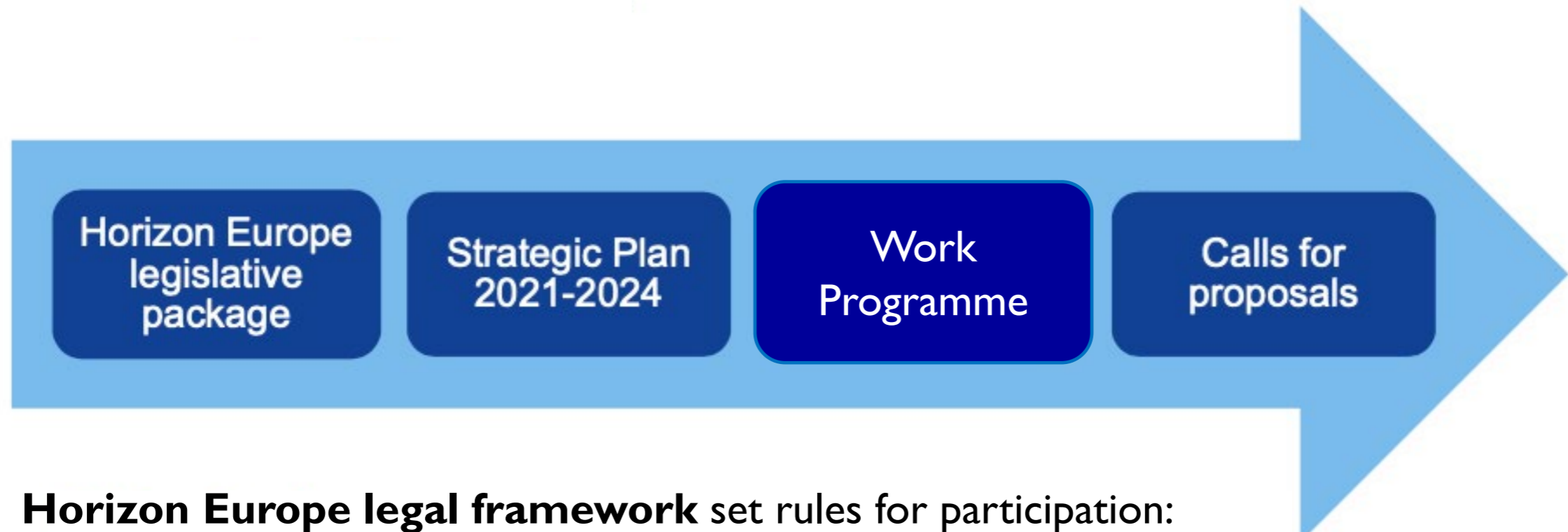
RESEARCH & INNOVATION

Innovation

- goes far beyond R&D

- is about responding to needs, producing tangible benefits and added value

"Innovation is the creation of something that improves the way we live our lives" - Barack Obama

HORIZON EUROPE PROCESS

Horizon Europe legislative package → Strategic Plan 2021-2024 → Work Programme → Calls for proposals

Horizon Europe legal framework set rules for participation:

- single set of rules

- potential participants

- relevant conditions such as time to grant, funding rates, general award and selection criteria, evaluation

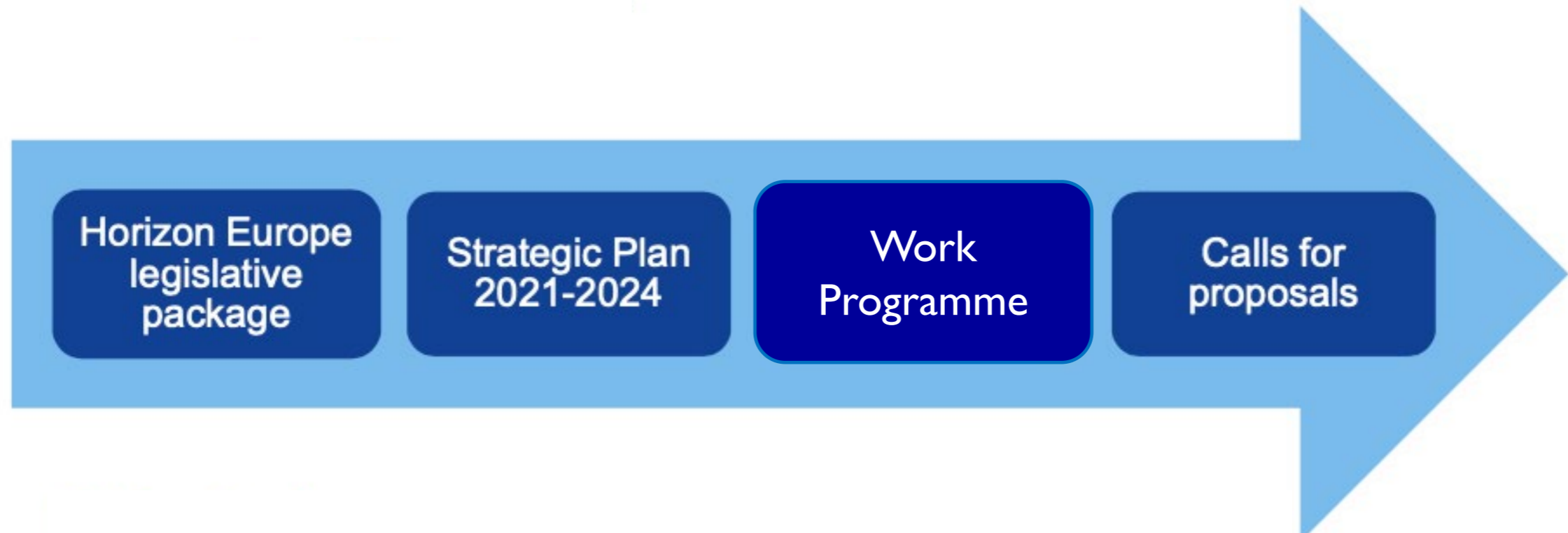and include the Specific Programme, defining the HEU implementation

European Commission

HORIZON EUROPE PROCESS

Horizon Europe legislative package → Strategic Plan 2021-2024 → Work Programme → Calls for proposals

Strategic Plan contains:

- Key strategic orientations for R&I support, including a description of expected impacts, cross-cluster issues and intervention areas.

- Identification of Mission and European Partnerships

- Areas for international cooperation.

- Specific cross-cutting issues

European Commission

HORIZON EUROPE PROCESS

| Horizon Europe legislative package | Strategic Plan 2021-2024 | Work Programme | Calls for proposals |

The WP, including calls, are published on a biannual basis, but with annual deadlines for call for proposals.

Minor changes to the calls in the second year of the WP may occur after the publication.

European Commission

A STEP BACK: HORIZON 2020 STRUCTURE

EXCELLENT SCIENCE

- European Research Council (ERC)
- Marie Sklodowska-Curie actions (MSCA)
- Future and Emerging Technologies (FET)
- Research Infrastructures (RI) including e-infrastructure

INDUSTRIAL LEADERSHIP

- Leadership in enabling and industrial technologies (LEITs)
  - ✴ ICT (link)
  - ✴ Nanotechnologies (link)
  - ✴ Advanced Materials (link)
  - ✴ Biotechnology (link)
  - ✴ Advanced manufacturing and processing (link)
  - ✴ Space (link)
- Access to risk finance (link)
- Innovation in SMEs (link)

SOCIET. CHALLENGES

- Health (SC1)
- Food (SC2)
- Energy (SC3)
- Transport (SC4)
- Environment (SC5)
- Inclusive Societies (SC6)
- Secure Societies (SC7)

Science with and for Society (SWAFS)

Spreading Excellence and Widening Participation

European Innovation Council Pilot
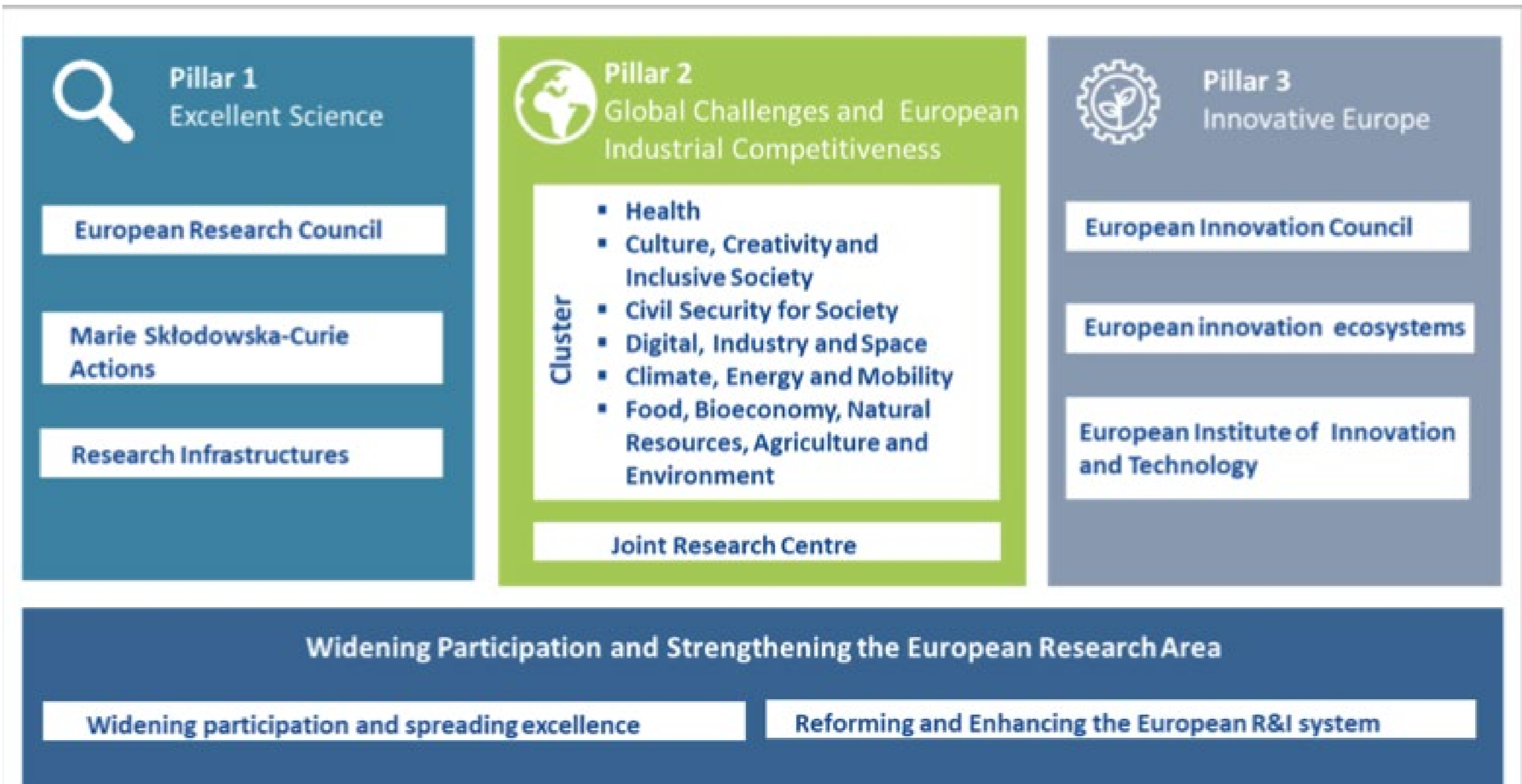
European Institute of Innovation and Technology (EIT)

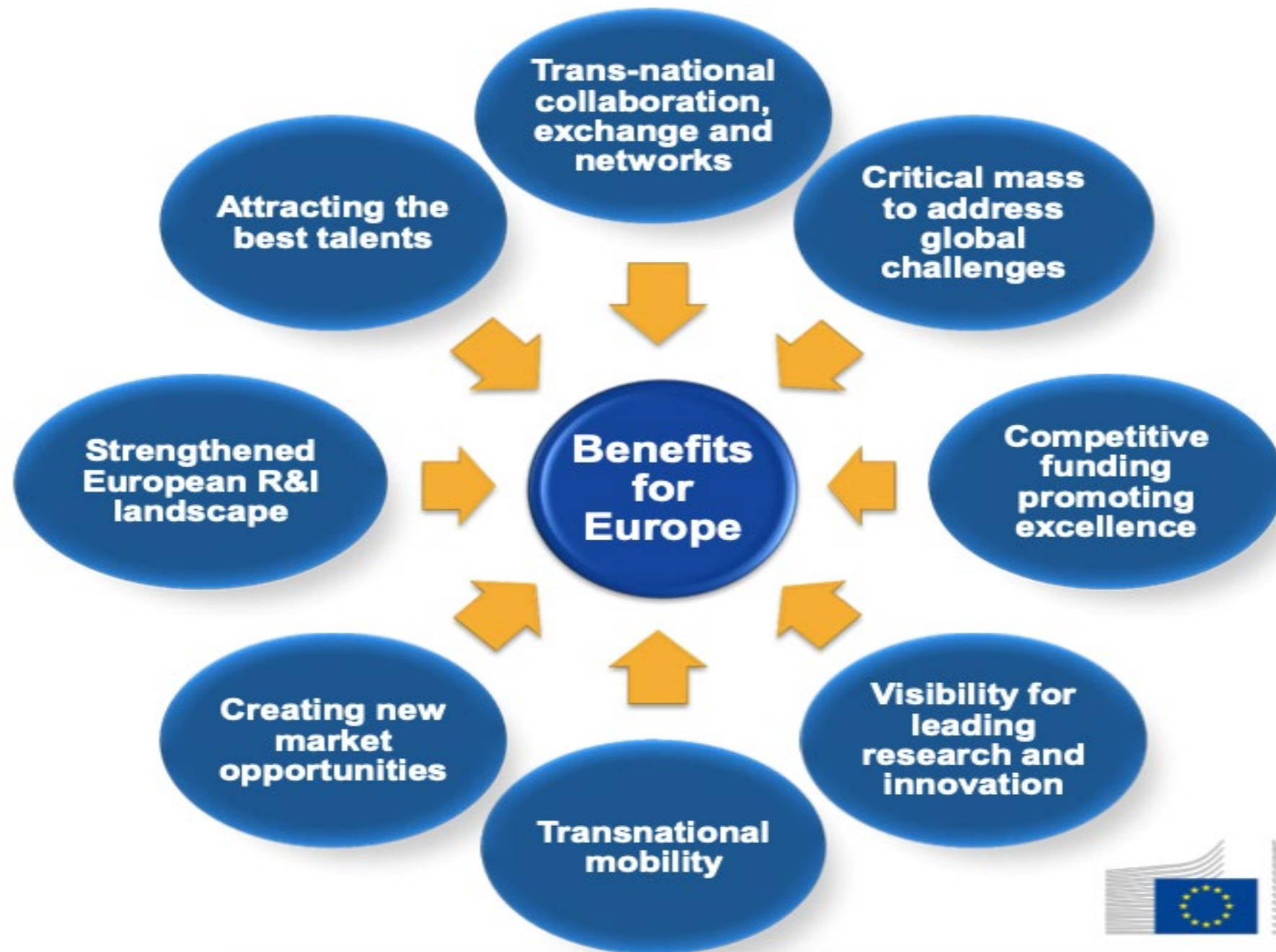**Joint Research Center (JRC)**

EURATOM

HORIZON EUROPE STRUCTURE

HORIZON EUROPE STRUCTURE
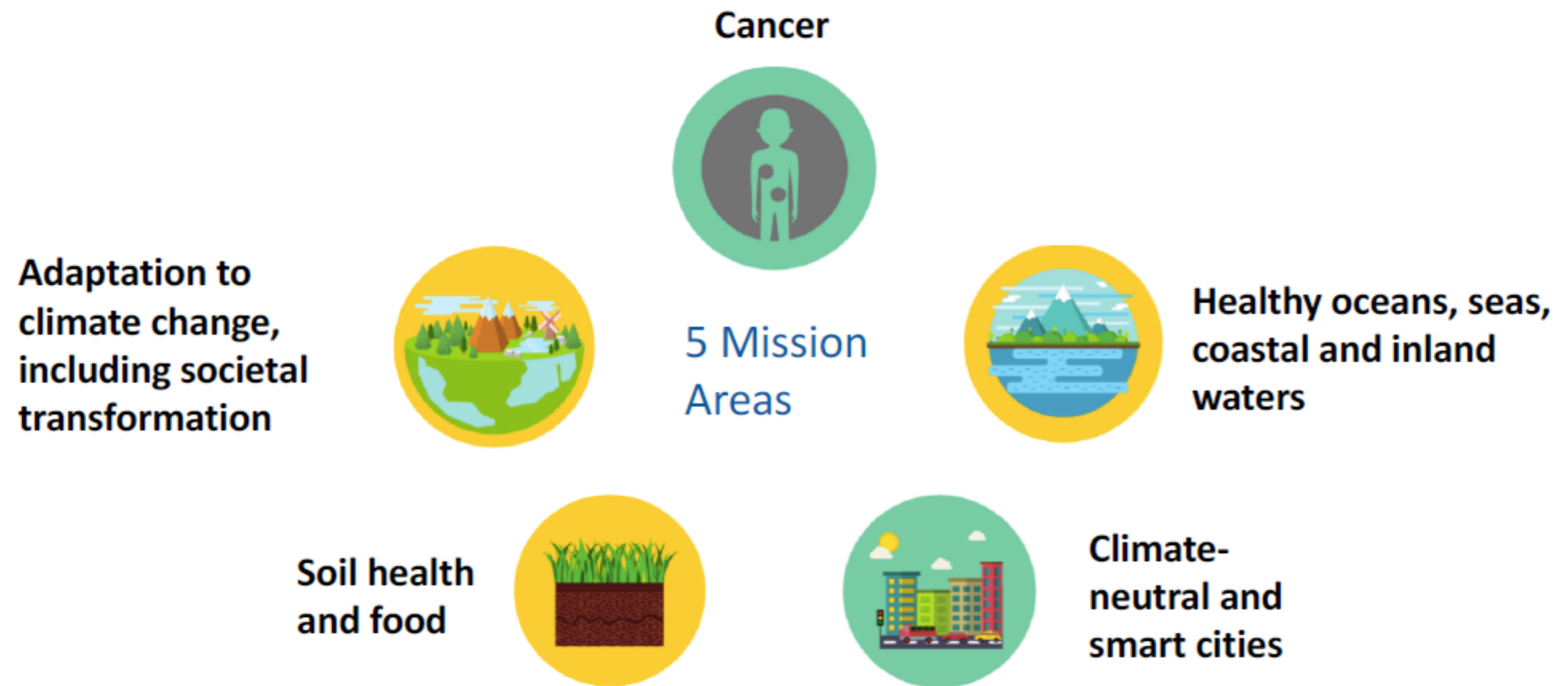
ADDED VALUE THROUGH HORIZON EUROPE

A QUICK LOOK AT...

MISSIONS

Missions are defined as **sets of actions** aimed for a bold and **measurable goal** within a **fixed time** frame that have an **impact** on science, technology and society in general

Cancer

Adaptation to climate change, including societal transformation

5 Mission Areas

Healthy oceans, seas, coastal and inland waters

Soil health and food

Climate-neutral and smart cities

A mission is a portfolio of actions across disciplines intended to achieve abold and inspirational and measurable goal within a set timeframe, with impact for society and policy making as well as relevance for a significant part of the European population and wide range of European citizens.

CROSS-CUTTING ISSUES

Cross-cutting issues include:

- gender

- social sciences and humanities

- open science

- ethics and research integrity

- dissemination and exploitation of results

- effective circulation of knowledge between research, industry

- education and training

- balanced approach between research and innovation and key enabling technologies

They are thus issues to **be considered in all projects**

to the extent that they are of relevance.

OPEN SCIENCE

Better dissemination and exploitation of R&I results and support to active engagement of society

- Mandatory Open Access to publications: beneficiaries shall ensure that they or the authors retain sufficient intellectual property rights to comply with open access requirements

- Open Access to research data ensured: in line with the principle "as open as possible, as closed as necessary"; Mandatory Data Management Plan for **FAIR** (Findable, Accessible, Interoperable, Re-usable) and Open Research Data

APPROACHES

COLLABORATIVE VS INDIVIDUAL

Collaborative projects

- *Initiatives undertaken and performed by a group of institutions*
- *Enlarged teams*
- *Evaluation as a whole and as individuals*
- *Common efforts towards the objective*

- Pillar I, II, III -

COLLABORATIVE VS INDIVIDUAL

Individual projects

- *Initiatives undertaken by a single researcher*
- *Surrounded by a limited team*
- *Evaluation mainly as individuals*
- *Common efforts towards the objective*

- Pillar I -

TOP DOWN VS BOTTOM UP

Top down approach

- *Topics and specific objectives defined by the EC*
- *Limited to a single Work Programme*
- *Usually unreplicated*

- Pillar I, II, III -

TOP DOWN VS BOTTOM UP

Bottom up approach

- *Topics and specific objectives proposed by the applicants*
- *Not limited to a single Work Programme*

- Pillar I, III -

INSIDE HORIZON EUROPE PILLARS

HORIZON EUROPE STRUCTURE

Pillar 1
Excellent Science

European Research Council

Marie Skłodowska-Curie Actions

Research Infrastructures

Pillar 2
Global Challenges and European Industrial Competitiveness

Cluster
- Health
- Culture, Creativity and Inclusive Society
- Civil Security for Society
- Digital, Industry and Space
- Climate, Energy and Mobility
- Food, Bioeconomy, Natural Resources, Agriculture and Environment

Joint Research Centre

Pillar 3
Innovative Europe

European Innovation Council

European innovation ecosystems

European Institute of Innovation and Technology

Widening Participation and Strengthening the European Research Area

Widening participation and spreading excellence

Reforming and Enhancing the European R&I system

PILLAR III: SPECIFIC OBJECTIVES

Pillar 3
Innovative Europe

European Innovation Council

European innovation ecosystems

European Institute of Innovation and Technology

✦ to foster **all forms of innovation**

✦ facilitate technological development, demonstration and knowledge and technology transfer

✦ *Support Innovation performance, transfer and scale up*

✦ strengthen deployment and exploitation of innovative solutions

✦ Mixed top down/ bottom up

✦ *Innovation-driven*

Stimulating market-creating breakthroughs and ecosystems conducive to innovation

PILLAR II: SPECIFIC OBJECTIVES

Pillar 2
Global Challenges and European Industrial Competitiveness

Cluster
- Health
- Culture, Creativity and Inclusive Society
- Civil Security for Society
- Digital, Industry and Space
- Climate, Energy and Mobility
- Food, Bioeconomy, Natural Resources, Agriculture and Environment

Joint Research Centre

✦ generate knowledge

✦ strengthen **the impact of research and innovation** in developing, supporting and implementing Union policies

✦ support the access to and uptake of innovative solutions in European industry, notably in SMEs, and society to address global challenges, including climate change and the Sustainable Development Goals

✦ top down approach

✦ Solution driven

Boosting key technologies and solutions underpinning EU policies & Sustainable Development Goals

Clusters in 'Global Challenges and European Industrial Competitiveness'

| Clusters	Areas of intervention	
Health	• Health throughout the life course • Non-communicable and rare diseases • Tools, technologies and digital solutions for health and care, including personalised medicine	• Environmental and social health determinants • Infectious diseases, including poverty-related and neglected disease • Health care systems
Culture, creativity and inclusive society	• Democracy and Governance • Social and economic transformations	• Culture, cultural heritage and creativity
Civil security for society	• Disaster-resilient societies • Protection and Security	• Cybersecurity
Digital, Industry and space	• Manufacturing technologies • Advanced materials • Next generation internet • Circular industries • Space, including Earth Observation • Emerging enabling technologies	• Key digital technologies, including quantum technologies • Artificial Intelligence and robotics • Advanced computing and Big Data • Low-carbon and clean industry • Emerging enabling technologies
Climate, Energy and Mobility	• Climate science and solutions • Energy systems and grids • Communities and cities • Industrial competitiveness in transport • Smart mobility	• Energy supply • Buildings and industrial facilities in energy transition • Clean, safe and accessible transport and mobility • Energy storage
Food, bioeconomy, natural resources, agriculture and environment	• Environmental observation • Agriculture, forestry and rural areas • Circular systems • Food systems	• Biodiversity and natural resources • Seas, oceans and inland waters • Bio-based innovation systems in the EU Bioeconomy

European Commission

PILLAR I: SPECIFIC OBJECTIVES

Pillar 1
Excellent Science

European Research Council

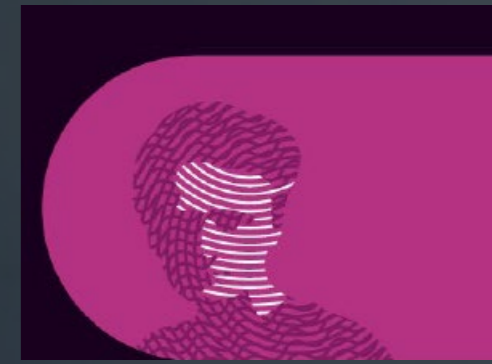Marie Skłodowska-Curie Actions

Research Infrastructures

- ✦ develop, promote and advance scientific excellence
- ✦ support the creation and diffusion of **high-quality new fundamental and applied knowledge, skills, technologies and solutions,** training and mobility of researchers, attract talent at all levels
- ✦ contribute to full engagement of Union's talent pool in actions supported under this Programme
- ✦ bottom up approach
- ✦ Excellence-driven (Researchers, ideas, infrastructures)

Reinforcing and extending the excellence of the Union's science base

Still the room for basic research
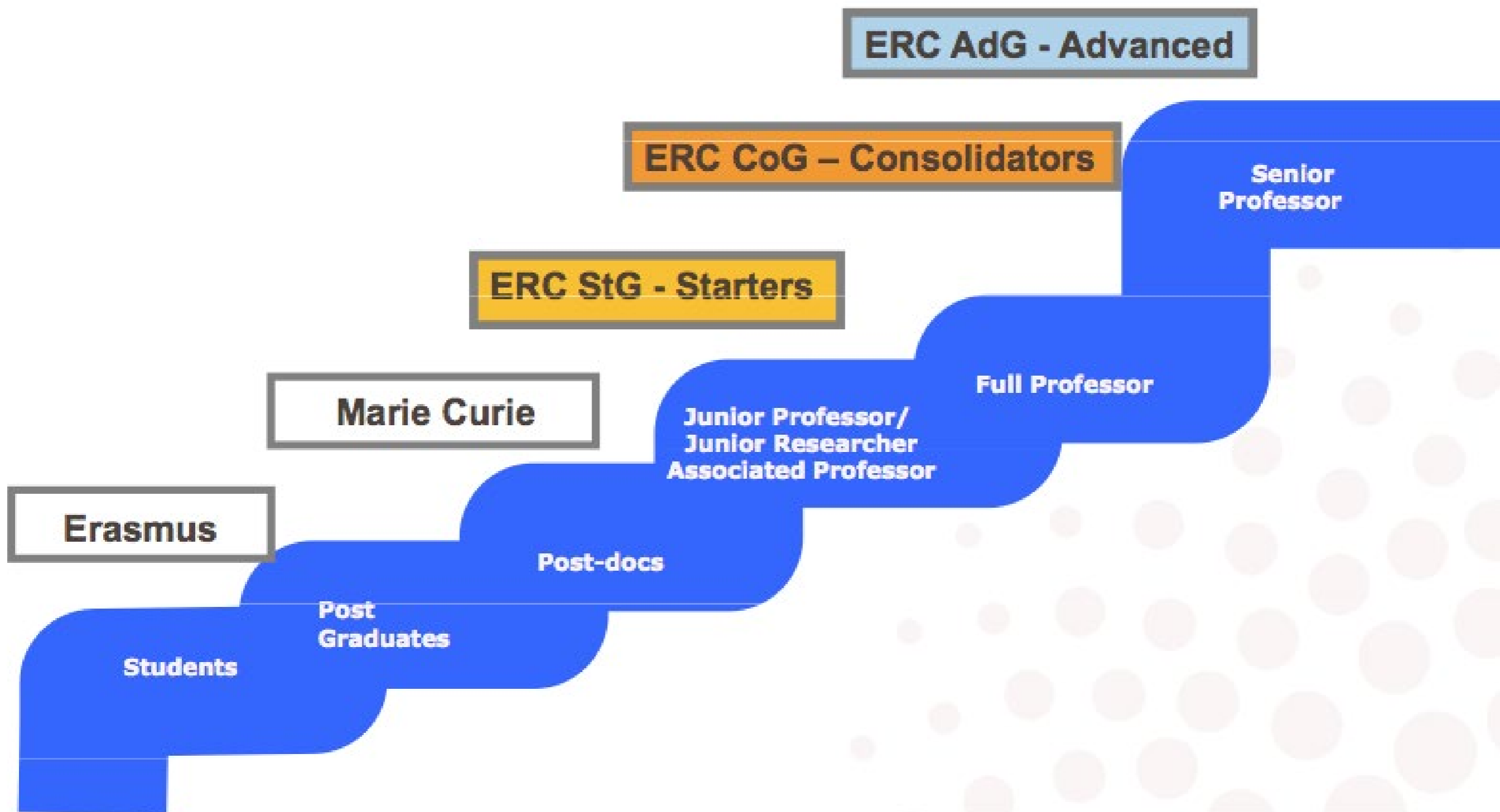
"Ideal" Research career development "with EU grants"

MARIE SKLODOWSKA-CURIE ACTIONS (MSCA)

http://ec.europa.eu/research/mariecurieactions/

MSCA

Reinforcing and extending the excellence of the Union's science base

European Research Council

Frontier research by the best researchers and their teams
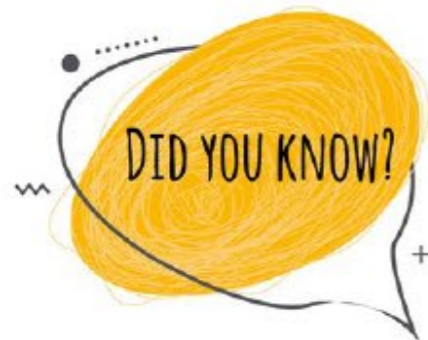
€16 billion

Marie Skłodowska Curie Actions

Equipping researchers with new knowledge and skills through mobility and training

€6.6 billion

Research Infrastructures

Integrated and inter-connected world-class research infrastructures

€2.4 billion

DID YOU KNOW?

12 Nobel Prize winners either backed by or involved in the Marie Skłodowska-Curie Actions between 2012 and 2020

MSCA IN KEY-WORDS

MSCA **fund mobility, training and career development for researchers**. Open to all domain of research and innovation, entirely bottom-up. Attractive working and employment conditions

Excellence

Research

Training

Skills

Mobility

"3i rule": international, interdisciplinary, intersectoral

Communication, dissemination, management, research career development plan, gender

evaluation criteria (weighted) : Excellence (50%), Impact (30%), Implementation (20%)

MSCA – KEY FEATURES

Researchers' training, skills and career development (all stages of career)

Excellent research in all domains (bottom-up approach)

International, inter-sectoral (academic/non-academic) & interdisciplinary mobility

Attractive working and employment conditions

Structuring impact on organisations + strategic international partnerships

Fostering collaboration beyond academia, notably with industry

MSCA – ACTIONS

Doctoral Networks

Doctoral programmes in and outside academia incl. joint & industrial doctorates

Postdoctoral Fellowships

Support to excellent postdoctoral researchers

Staff Exchanges

Support for research and innovation staff exchanges

COFUND

Co-funding doctoral and postdoctoral programmes

MSCA and Citizens

Public outreach events (Night)

MSCA – TARGETS

Organisation

- Any legal entity
- From academic or non-academic sector
- Beneficiary or associated partner
- Applies to Doctoral Networks, Staff Exchanges and COFUND

Individual researcher

- Any nationality
- Specific conditions (mobility rule, PhD, nationality/residence for Global PF)
- Applies to Postdoctoral Fellowships jointly with host in EU/AC

MSCA – TARGETS

Researchers	Actions available
Researchers without a PhD degree	Doctoral Networks Staff Exchanges COFUND-DP
Researchers with a PhD degree	Postdoctoral Fellowships Staff Exchanges COFUND-PP
Other staff (Research managers, technicians, etc.)	Staff Exchanges

MSCA – DOCTORAL NETWORKS

- **Multi-beneficiary action** to set up innovative **doctoral programmes**, including:
  - **Industrial Doctorates**
    - Training in academia and industry
    - Joint supervision
  - **Joint Doctorates**
    - Joint collaborations leading to a joint/double/multiple doctoral degree
    - Joint selection, supervision and governance structure
    - Pre-agreement for joint degrees required
- **Recruited researchers:**
  - **doctoral candidates,** i.e. researchers without a doctoral degree at the date of the recruitment; mandatory enrolment in a doctoral programme in at least 1 EU MS/AC (at least 2 for Joint Doctorates)
  - **researchers apply to vacancies published** by the institutions participating in the projects
- **Focus** on **career development plan, supervision, training**: research and transferable skills
- **Who applies?**
  - **consortia** of universities, research institutions and research infrastructures, businesses including SMEs, and other socio-economic actors; each beneficiary to recruit at least 1 researcher
  - at least **three independent legal entities**, each established in a different MS or AC; minimum of 1 beneficiary from a MS (on top of this minimum, any entity from any third country can join)
  - **Resubmission restrictions** for applications receiving a score **below 80%** in the previous call

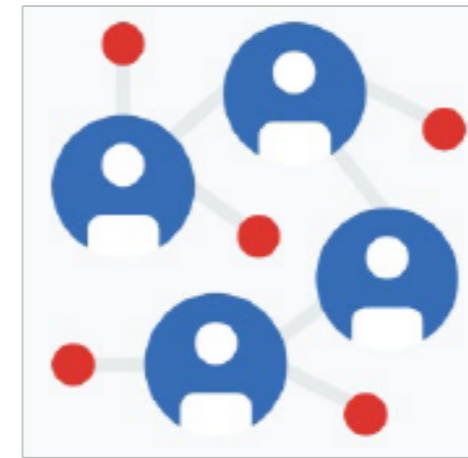# MSCA – DOCTORAL NETWORKS
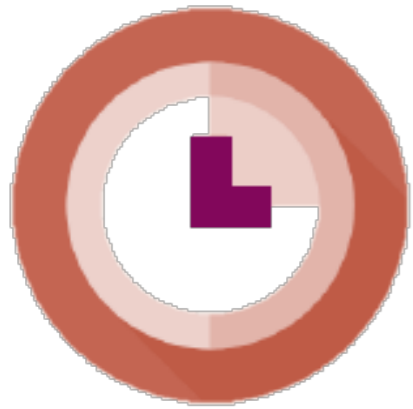
DURATION
Max 4 years
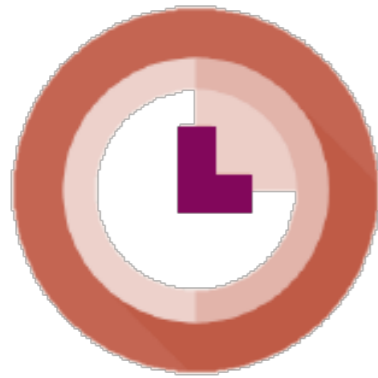(max 5 years for Joint Doctorates only)

COMPOSITION
Min 3 organisations in 3 ≠ EU MS or HE AC (at least 1 MS)

FELLOWSHIP
Between 3 and 36 months
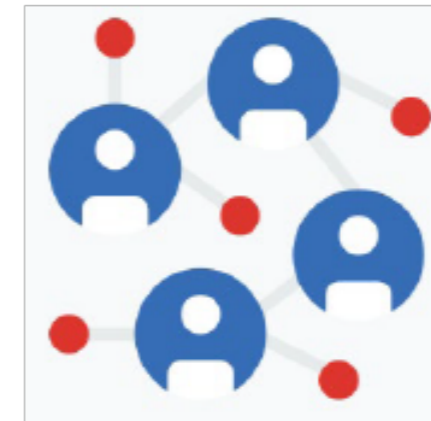(up to 48 months for Joint Doctorates only)

MSCA - STAFF EXCHANGE

DURATION
4 years

COMPOSITION
Min 3 organisations in 3
≠ countries (min. 2 EU
MS or HE AC)

SECONDMENTS
1-12 months per staff

MSCA - STAFF EXCHANGE

Principles

International, inter-sectoral and interdisciplinary mobility of R&I staff ("secondments")

Knowledge transfer between participating organisations

Collaboration between the academic and non-academic sectors (including SMEs)

Cooperation across the globe

MSCA - STAFF EXCHANGE

Activities

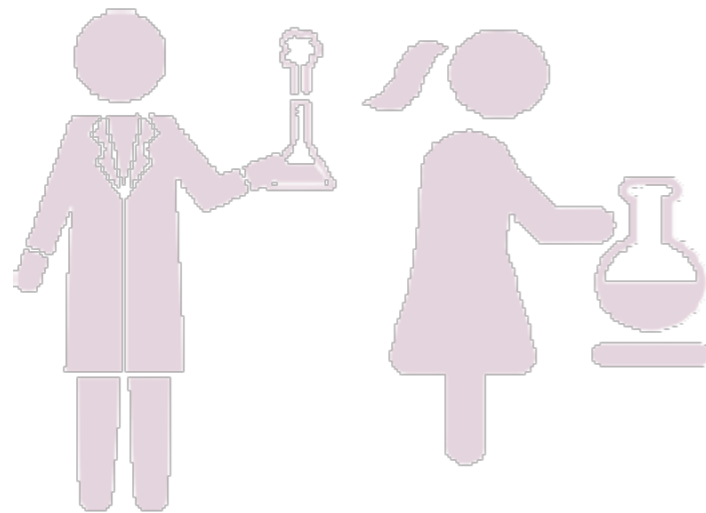- Implementation of a joint R&I project by seconding and/or hosting eligible staff members
- Three dimensions of mobility: inter-sectoral, international and interdisciplinary
- Networking activities, organisation of workshops and conferences
- New skills acquisition and career development perspectives

MSCA - STAFF EXCHANGE

Participating Staff

Any type of staff contributing to R&I activities (researchers, administrative staff, managerial staff, technical staff)

Each staff member is seconded for a period of 1 to 12 months (may be split into several stays)

Researchers **at any career stage** (from doctoral candidates to postdoctoral researchers)

Staff needs to be devoted full-time to the action during the secondment

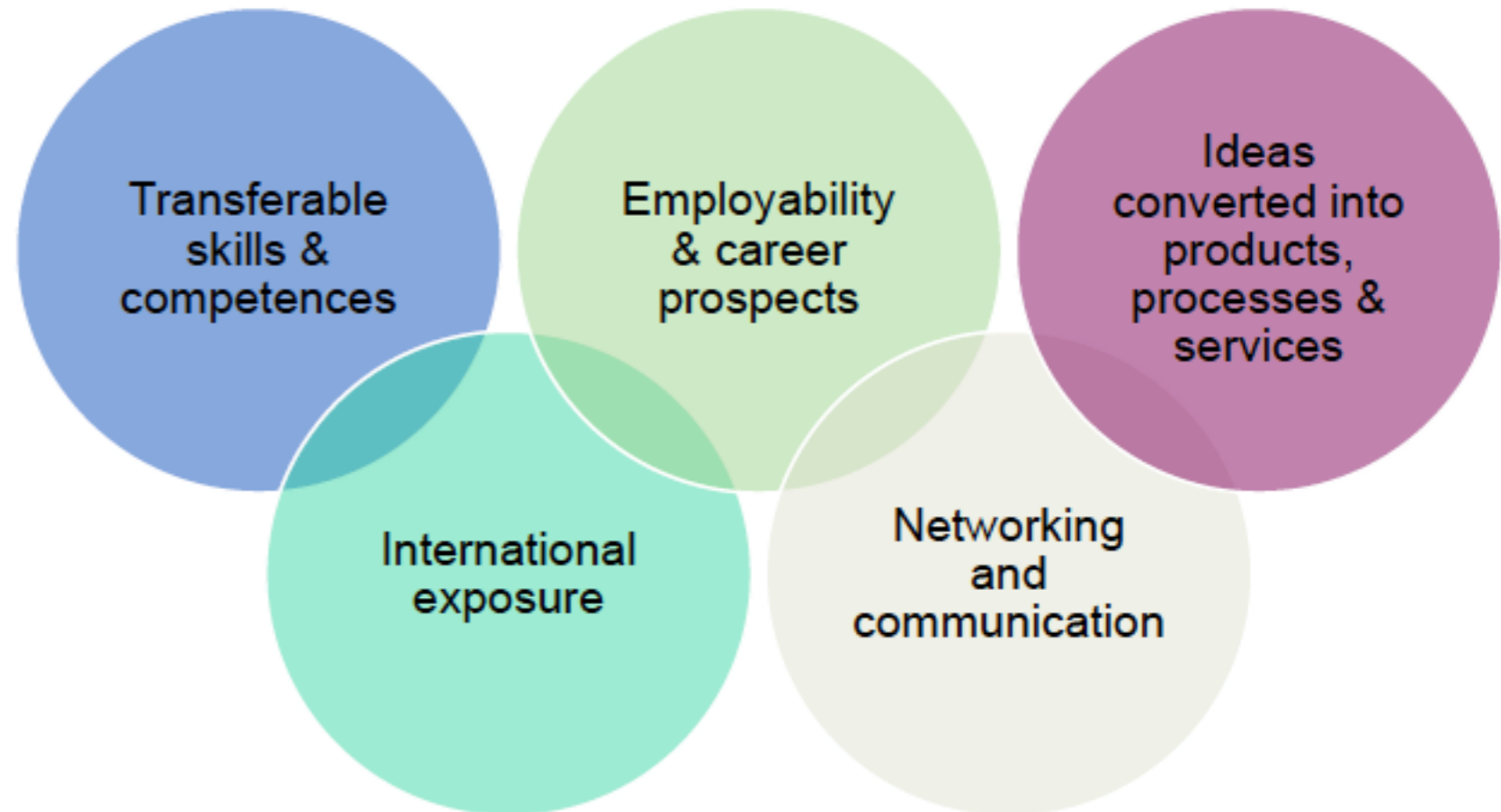Actively engaged in research and/or innovation activities for at least **1 month prior** at the sending institution

After the secondment, staff should return to their sending institution

MSCA - STAFF EXCHANGE

Outcome for staff members

- Transferable skills & competences
- Employability & career prospects
- Ideas converted into products, processes & services
- International exposure
- Networking and communication

Outcome for organisations

- Transfer of knowledge
- I3 collaborative networks
- R&I capacity
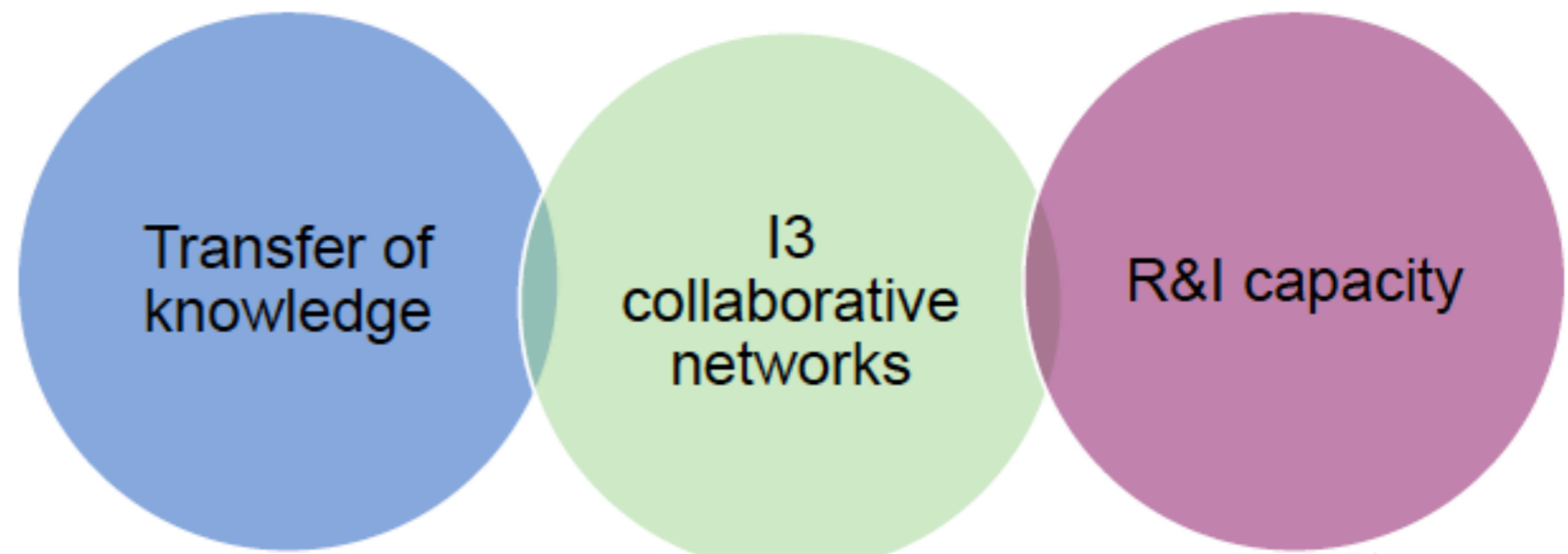
MSCA – POSTDOCTORAL FELLOWSHIPS

One postdoctoral researcher

+

Host Institution

For **European Fellowships**:

Beneficiary from EU MS or HE AC

For **Global Fellowships**:

Beneficiary + 1 Third Country Associated Partner

+

Supervisor

MSCA – POSTDOCTORAL FELLOWSHIPS

Postdoctoral researcher

- Have obtained a PhD at the date of the call deadline
- No age restriction
- Maximum 8 years (full-time) research experience since award of the (first) doctoral degree

Any Nationality

- Except for Global Fellowships: the researcher must be a national or long-term resident (5 years) of an EU Member States or Horizon Europe Associated Country

Mobility rule

- Must not have resided or carried out their main activity in the country of the beneficiary (for European Fellowships) or associated partner (for Global Fellowships) for more than 12 months in the 36 months immediately before the call deadline

Resubmission ⚠

- Restrict resubmissions with score less than 70% to the following year

MSCA – POSTDOCTORAL FELLOWSHIPS

European Postdoctoral Fellowship:

any nationality

from any country

12-24 months

MSCA – POSTDOCTORAL FELLOWSHIPS

Global Postdoctoral Fellowship:

European nationals or long-term residents

12/24 months + 12 months

EUROPEAN RESEARCH COUNCIL - ERC

EUROPEAN RESEARCH COUNCIL (ERC)

Unlocking brilliant ideas

Ideas **beyond** *imagination*

The mark of **excellence**

Independence for **creative** *minds*

erc

ERC in figures

Over **13,000** top researchers funded since the ERC creation in 2007

Over **90,000** researchers and other professionals employed in ERC research teams

Over **2,400** patents and other IPR applications generated by ERC funding

Over **400** start-ups identified as founded or co-founded by ERC grantees

Over **220,000** articles from ERC projects published in scientific journals

Over **900** research institutions hosting ERC grantees – universities, public or private research centres in the EU or Associated Countries
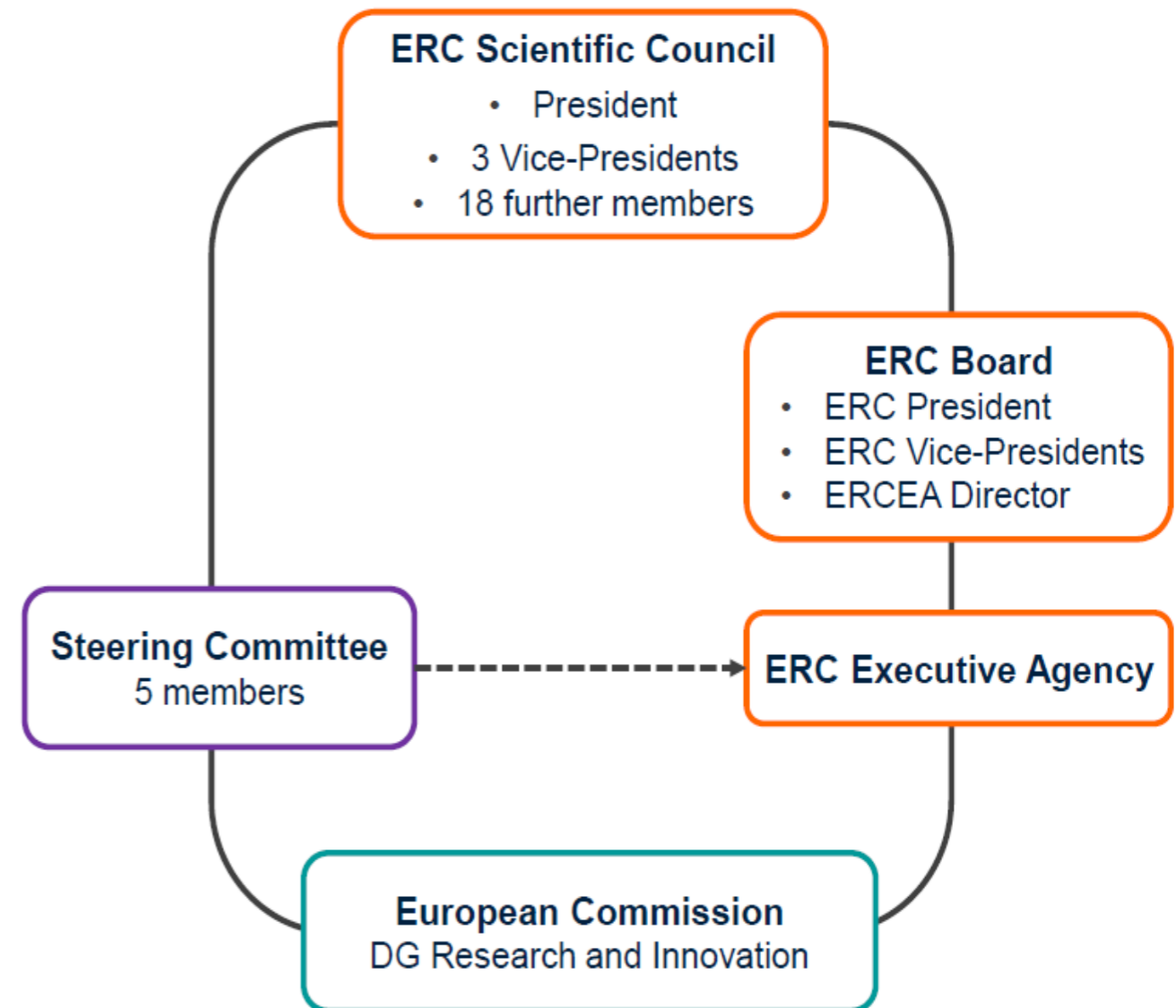
89 nationalities of grant holders

12 Nobel Prizes, **6** Fields Medals, **11** Wolf Prizes and other prizes awarded to ERC grantees

"Research funded by the ERC is expected to **lead to advances at the frontiers of knowledge** and to set clear and inspirational target for frontier research across Europe"

ERC governance

Scientific governance

- Independent Scientific Council with 22 members including the ERC President

- Full authority over funding strategy and evaluation

- Support by a Dedicated Implementation Structure (ERC Executive Agency)

ERC Scientific Council
- President
- 3 Vice-Presidents
- 18 further members

ERC Board
- ERC President
- ERC Vice-Presidents
- ERCEA Director

Steering Committee
5 members

ERC Executive Agency

European Commission
DG Research and Innovation

ERC Scientific Council

Maria LEPTIN
(Biology)
ERC President

Eveline CRONE
(Psychology)
Vice-President

Eystein JANSEN
(Earth Science)
Vice-President

Jesper SVEJSTRUP
(Biology)
Vice-President

Geneviève ALMOUZNI
(Biology)

Harriet BULKELEY
(Geography)

Ben FERINGA
(Organic Chemistry)

Mercedes GARCÍA-ARENAL
(History)

Gerd GIGERENZER
(Psychology)

Tom HENZINGER
(Computer Science)

Liselotte HØJGAARD
(Medicine)

Dirk INZÉ
(Plant Biology)

László LOVÁSZ
(Mathematics)

Chryssa KOUVELIOTOU
(High-Energy Astrophysics)

Sylvie LORENTE
(Mechanical Engineering)

Luke O'NEILL
(Biochemistry & Immunology)

Björn OTTERSTEN
(Electrical Engineering)

Giovanni SARTOR
(Law)

Nicola SPALDIN
(Materials Theory)

Alice VALKÁROVÁ
(Physics)

Milena ŽIC FUCHS
(Linguistics)

ERC structure

The ERC Dedicated Implementation Structure - ERC Executive Agency

- Executes annual work programme as established by the Scientific Council
- Implements calls for proposals and provides information and support to applicants
- Organises peer review evaluation
- Establishes and manages grant agreements
- Administers scientific and financial aspects and follow-up of grant agreements
- Carries out communications activities and ensures information dissemination

  to ERC stakeholders

ERC MISSION

"...encourage the highest quality research in Europe through **competitive funding** and to support investigator-driven frontier research across all fields, on the basis of scientific excellence. The ERC complements other funding activities in Europe such as those of the national research funding agencies..."

"By challenging Europe's brightest minds, the ERC expects that its grants will help to bring about **new and unpredictable scientific and technological discoveries** - the kind that can form the basis of new industries, markets, and broader social innovations of the future."

ERC mission

Established by the EU in 2007 "to reinforce excellence, dynamism and creativity in European research", ERC supports excellence in frontier research through a bottom-up, individual-based, pan-European competition.

Budget
€ 16 billion (2021-2027) – 2.3 billion €/year
€ 13 billion (2014-2020) - 1.9 billion €/year
€ 7.5 billion (2007-2013) - 1.1 billion €/year

Scientific freedom
- Scientific excellence as the sole criterion
- Support to the individual scientist – *no consortia!*
- No predetermined subjects – *"bottom-up"*
- Support for frontier research in all fields of science and humanities
- International peer-review

erc

European Research Council
Established by the European Commission

European Commission
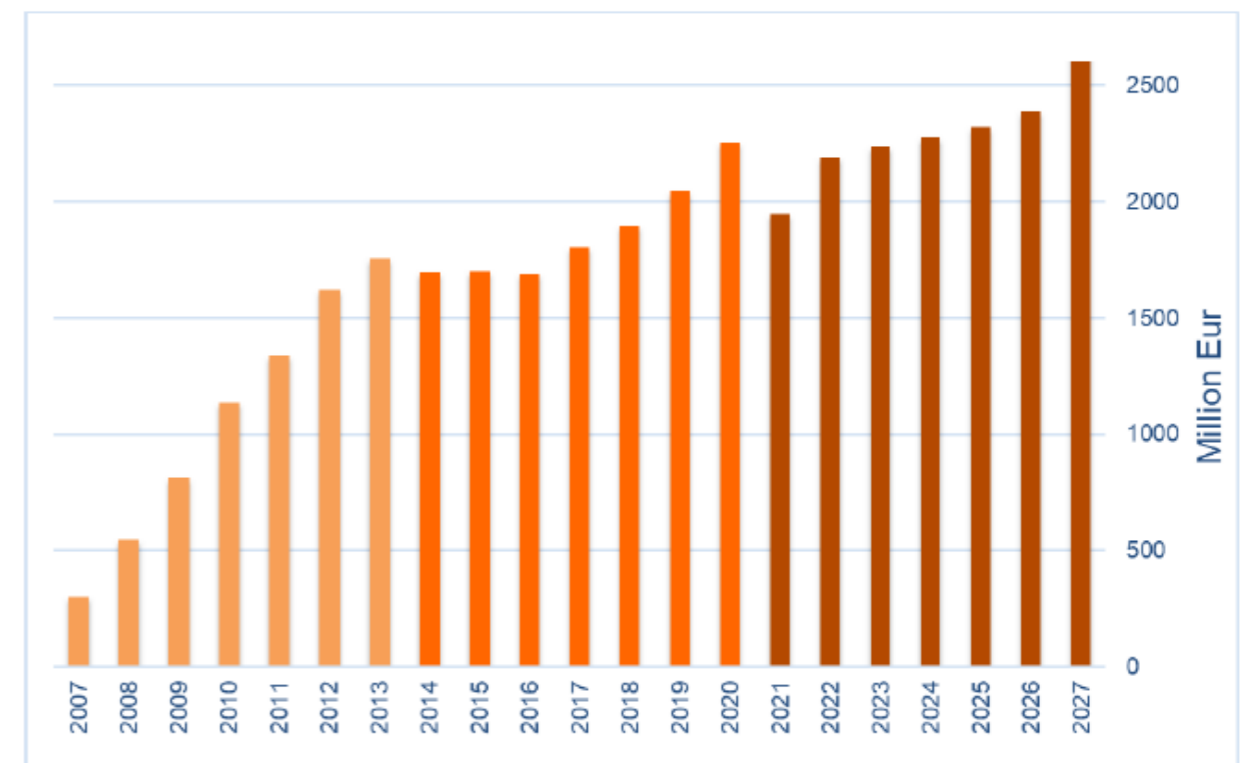
ERC SUPPORTS SCIENTIFIC EXCELLENCE

Principal Investigator

- The best and more creative scientists;
- Established and next-generation of independent top research leaders in EU;
- Investigator driven frontier research (individual grants);
- Principal Investigators from anywhere in the world can apply;
- Portability

Proposal

- Explore new opportunities and directions, advances at the frontiers of knowledge;
- Clear and inspirational target for frontier research in any field;
- Bottom-up, ground-breaking, ~~high-risk/high gain~~ **ambitious** projects

1 Principal Investigator, 1 Host Institution, 1 evaluation criterion (excellence)
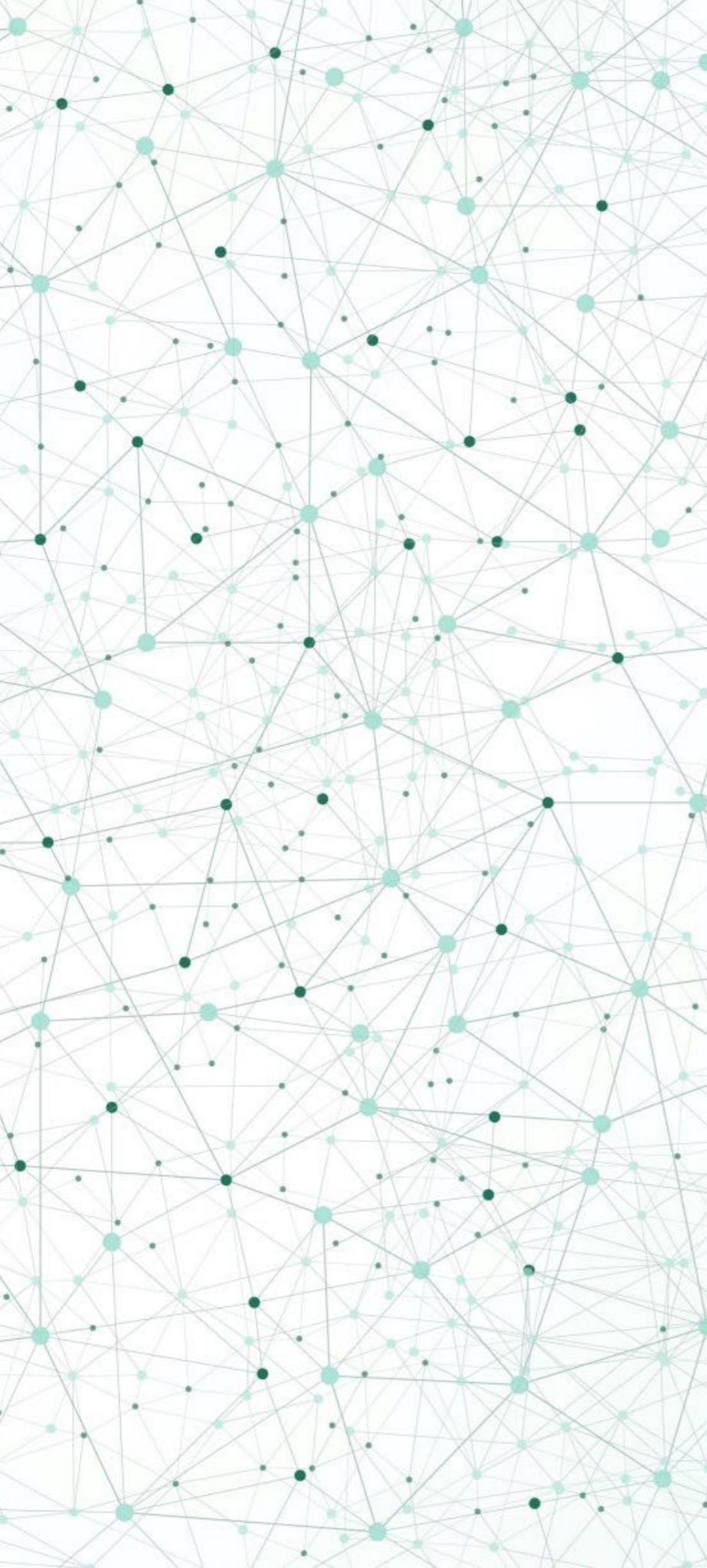
ERC PRINCIPLES

- Work on a research topic of your **own choice**, with a team of your **own choice.**

- Gain true **financial autonomy** for 5 years.

- Negotiate the **best conditions** with the Host Institution.

- Attract **top team members** and **collaborators.**

- *(Team members can be funded outside EU/AC if justified and supported by the panel)*

- Move with the grant to any place in Europe **(portability)**

- Attract **additional funding.**

ERC Work Programme 2024: some novelties, why ?

In December 2022 the Scientific Council decided to:

- sign the Agreement on Reforming Research assessment process initiated in January 2022 and involving more than 350 organisations in 40 countries

- to make some changes in ERC's application forms and evaluation procedures for the 2024 calls taking into account the above and lessons from practice

"The Scientific Council recognises that maintaining the quality of the ERC's evaluation is critical to its success and has always been prepared to adapt and update the ERC's specific processes and procedures as necessary"

FREEDOM OF RESEARCH

- International Peer review : **28 Panels (3 Domains)**

- **Physical Sciences and Engineering** (**PE**)

- Life Sciences (LS)

- Social Sciences and Humanities (SH)

- "An **ERC panel** consists of a chairperson and between 11 and 17 members. The Panel Chair and the Panel Members are selected by the ERC Scientific Council on the basis of their scientific reputation and following the criteria set up by the ERC Scientific Council Standing Committee on Panels."

- "The ERC WP establishes that an **indicative budget is allocated to each panel in proportion to the budgetary demand of its assigned proposals**. The budget is calculated on the basis of the cumulative grant request of all proposals to the panel as a proportion of the cumulative grant request in response to the indicative budget of the call."

Evaluation panel structure (2024)

Life Sciences

- LS1 Molecules of Life: Biological Mechanisms, Structures and Functions
- LS2 Integrative Biology: From Genes and Genomes to Systems
- LS3 Cell Biology, Development, Stem Cells and Regeneration
- LS4 Physiology in Health, Disease and Ageing
- LS5 Neuroscience and Disorders of the Nervous System
- LS6 Immunity, Infection and Immunotherapy
- LS7 Prevention, Diagnosis and Treatment of Human Diseases
- LS8 Environmental Biology, Ecology and Evolution
- LS9 Biotechnology and Biosystems Engineering

Physical Sciences & Engineering

- PE1 Mathematics
- PE2 Fundamental Constituents of Matter
- PE3 Condensed Matter Physics
- PE4 Physical and Analytical Chemical Sciences
- PE5 Synthetic Chemistry and Materials
- PE6 Computer Science and Informatics
- PE7 Systems and Communication Engineering
- PE8 Products and Processes Engineering
- PE9 Universe Sciences
- PE10 Earth System Science
- PE11 Materials Engineering

Social Sciences and Humanities

- SH1 Individuals, Markets and Organisations
- SH2 Institutions, Governance and Legal Systems
- SH3 The Social World and Its Interactions
- SH4 The Human Mind and Its Complexity
- SH5 Texts and Concepts
- SH6 The Study of the Human Past
- SH7 Human Mobility, Environment, and Space
- SH8 Studies of Cultures and Arts (new in WP 2024)

PE2   Fundamental Constituents of Matter

Particle, nuclear, plasma, atomic, molecular, gas, and optical physics

PE2_1   Theory of fundamental interactions
PE2_2   Phenomenology of fundamental interactions
PE2_3   Experimental particle physics with accelerators
PE2_4   Experimental particle physics without accelerators
PE2_5   Classical and quantum physics of gravitational interactions
PE2_6   Nuclear, hadron and heavy ion physics
PE2_7   Nuclear and particle astrophysics
PE2_8   Gas and plasma physics
PE2_9   Electromagnetism
PE2_10 Atomic, molecular physics
PE2_11 Ultra-cold atoms and molecules
PE2_12 Optics, non-linear optics and nano-optics
PE2_13 Quantum optics and quantum information
PE2_14 Lasers, ultra-short lasers and laser physics
PE2_15 Thermodynamics
PE2_16 Non-linear physics
PE2_17 Metrology and measurement
PE2_18 Equilibrium and non-equilibrium statistical mechanics: steady states and dynamics

ERC grant schemes

Starting Grants

starters (2-7 years after PhD) up to € 1.5 Mio
for 5 years

Consolidator Grants

Consolidators (7-12 years after PhD) up to € 2 Mio
for 5 years

Advanced Grants

track-record of significant research achievements in the
last 10 years up to € 2.5 Mio
for 5 years

Synergy Grants

2 – 4 Principal Investigators up to € 10.0 Mio for 6
years
1 PI can be based outside EU/Associated
Countries

Proof-of-Concept

bridging gap between research - earliest stage of marketable innovation
lump sum €150,000 for ERC grant holders

ERC Work Programme 2024: some novelties, how ?

Changes pertain to:

- Research assessment -> more focus on the project

assessment of the applicant -> including relevant information on career breaks, unusual career paths, noteworthy contributions to the research community (*note: these will not in themselves be evaluated but provide context to the evaluation of the principal investigator*)

- Evaluation procedure -> max 44 interviews, new 'A not invited' score
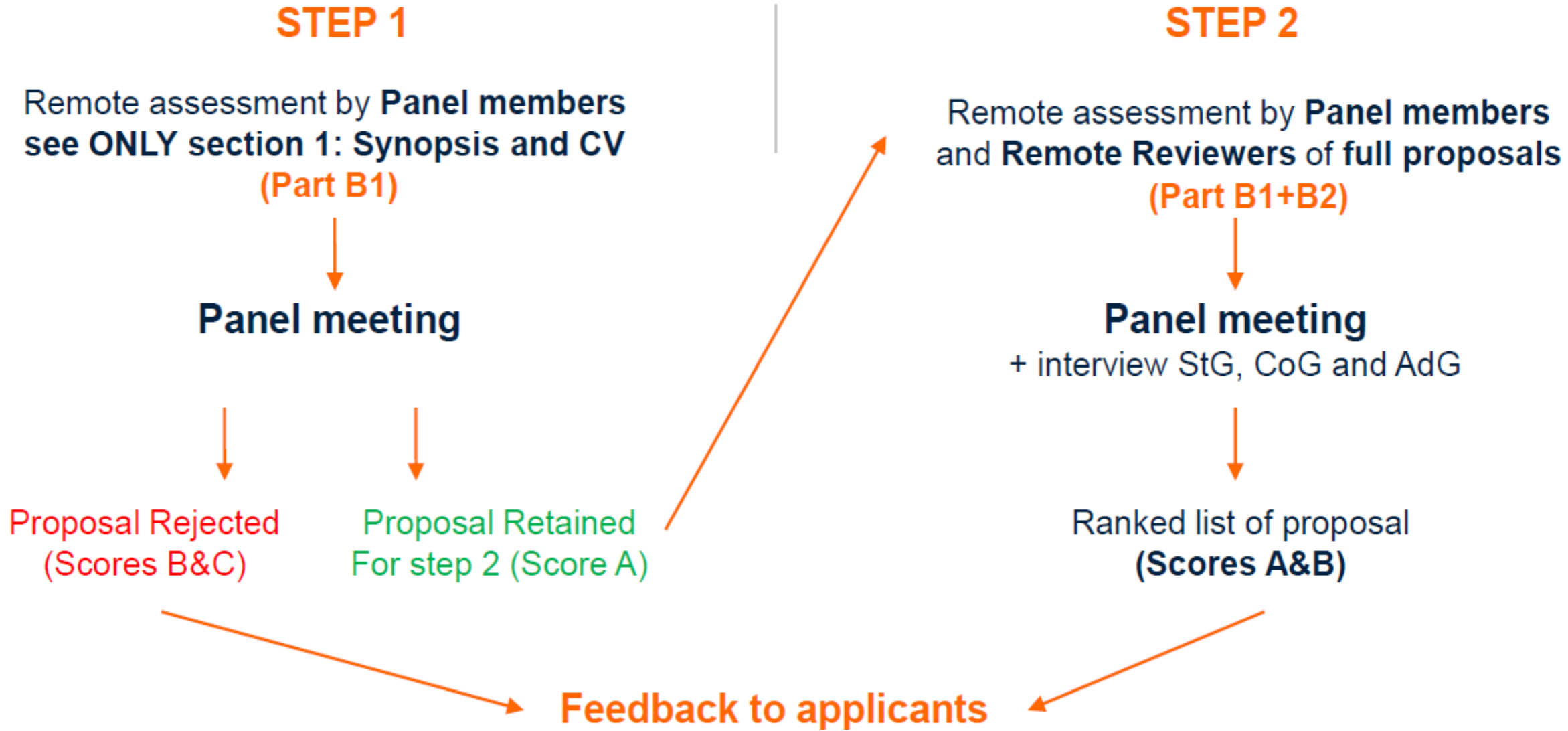- Administrative simplification -> Lump Sum in Advanced Grants

ELIGIBILITY

Eligibility period: Principal Investigator(s) who have successfully defended their first PhD		
Starting Grant	**Consolidator Grant**	**Advanced and Synergy Grant**
> 2 and ≤ 7 years prior to 1 January 2024 Cut-off dates: Successful defence of PhD between 1 January 2017 and 31 December 2021 (inclusive)	> 7 and ≤ 12 years prior to 1 January 2024 Cut-off dates: Successful defence of PhD between 1 January 2012 and 31 December 2016 (inclusive)	No specific criteria

ELIGIBILITY

Minimum percentage of the working time of a Principal Investigator that must be spent	Starting Grant	Consolidator Grant	Advanced Grant	Synergy Grant
On the ERC project	50%	40%	30%	30% for each Principal Investigator
In a Member State or Associated Country[37,38]	50%	50%	50%	50% for each Principal Investigator engaged and hosted by an institution in the EU or Associated Countries

For individuals calls: a single submission but a two-step evaluation

STEP 1

Remote assessment by **Panel members**
see ONLY section 1: Synopsis and CV
(Part B1)

↓

Panel meeting

↓   ↓

Proposal Rejected   Proposal Retained
(Scores B&C)   For step 2 (Score A)

STEP 2

Remote assessment by **Panel members**
and **Remote Reviewers** of **full proposals**
(Part B1+B2)

↓

Panel meeting
+ interview StG, CoG and AdG

↓

Ranked list of proposal
(Scores A&B)

Feedback to applicants

QUESTIONS?