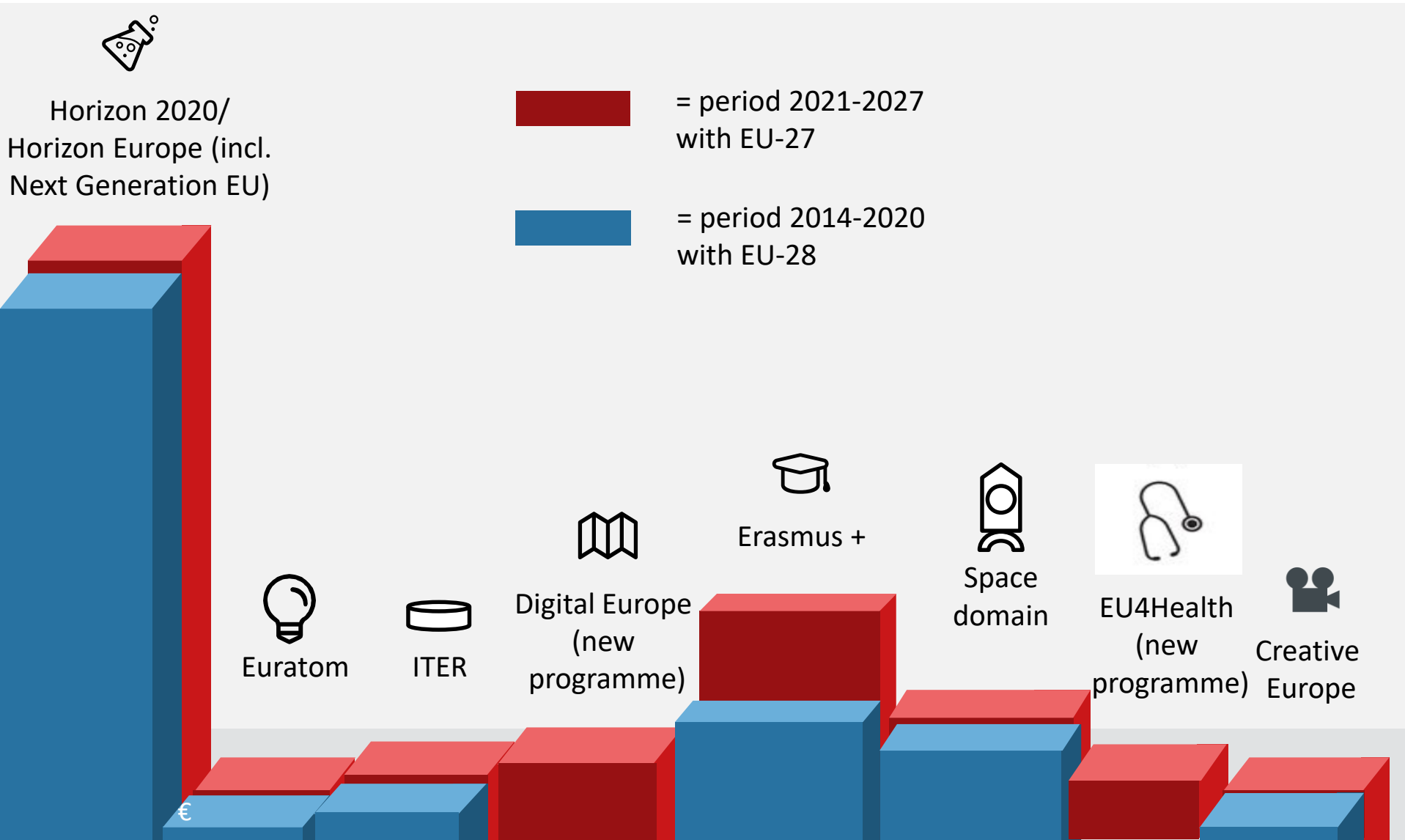# Towards Horizon Europe
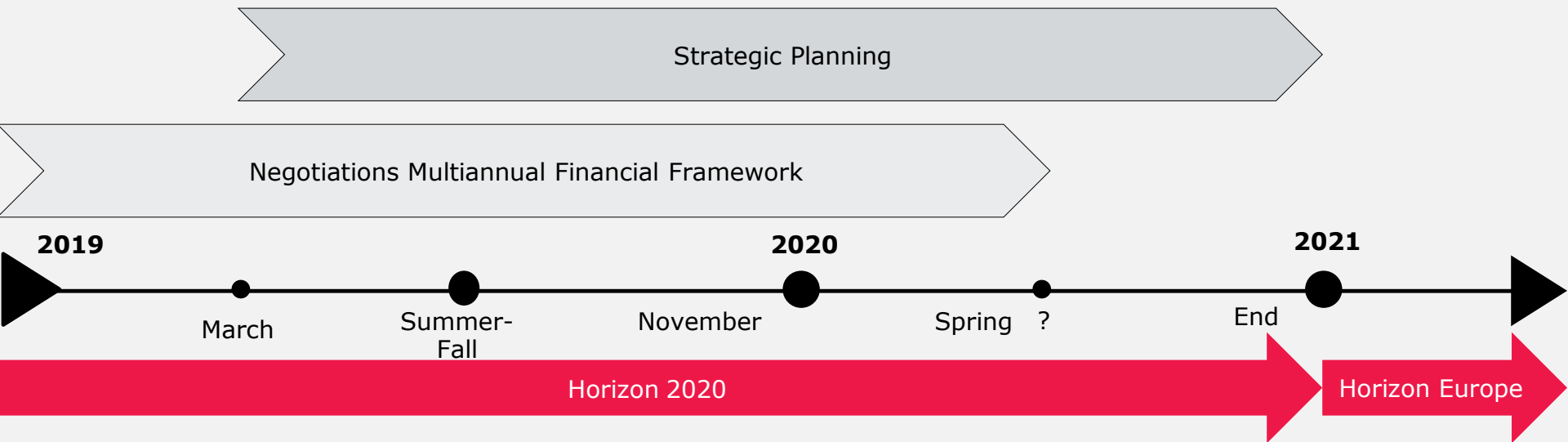
Current and past budget of EU programmes for R&I, education, space, health and culture

Horizon 2020/ Horizon Europe (incl. Next Generation EU)

= period 2021-2027 with EU-27

= period 2014-2020 with EU-28

Euratom

ITER

Digital Europe (new programme)

Erasmus +

Space domain

EU4Health (new programme)

Creative Europe

€

Horizon Europe.

Strategic Planning

Negotiations Multiannual Financial Framework

2019   **2020**   **2021**

March   Summer-Fall   November   Spring ?   End

Horizon 2020

Horizon Europe

Towards Horizon Europe.

19.03. Provisional Agreement on Horizon Europe

New European Parliament and New Commission College

Identification of Missions and Assessment of proposed partnerships

Agreement on Budget

Adoption of Work Programmes

Strategic Planning

Negotiations Multiannual Financial Framework

2019 **2020** **2021**

March Summer-Fall November Autumn End

Horizon 2020

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19.03. Provisional Agreement on Horizon Europe

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Agreement on Budget

Adoption of Work Programmes

Orientations for 2023-24

Pact for R&I

New European Research Area

Knowledge valorisation

Strategic Planning

Negotiations Multiannual Financial Framework

2019   **2020**   **2021**

March   Summer-Fall   November   Autumn   End

Horizon 2020   Horizon Europe

info@uas4europe.eu
www.uas4europe.eu

Facts & Figures

9 member associations

More than 450 UAS

60.000+ research staff

Over 2.000.000 students

Our founding members

Representing all Swiss institutions of higher education, including 7 UAS

swissuniversities

Representing 600+ institutions in over 40 countries within and outside the European Higher Education Area

EURASHE

Representing 150 institutions in eight European countries through national Rectors' Confrences

UASnet | dispersed since 31.12.2019

Representing the 20 Bavarian UAS

Hochschule Bayern

Representing all 21 Austrian UAS

FHK

Our current members

Chairwomanship
June 2021 – May 2022

swissuniversities

swissuniversities

Representing all Swiss institutions of higher education, including 7 UAS

Vice Chair

Vereniging Hogescholen

Vereniging Hogescholen

Representing all 36 public - funded UAS of the Netherlands

EURASHE
European Association of Institutions in Higher Education

EURASHE

Representing over 600 institutions in European Higher Education Area

HOCHSCHULE BAYERN

Hochschule Bayern e.V.

Representing 20 Bavarian UAS

FH|K
ÖSTERREICHISCHE FACHHOCHSCHUL-KONFERENZ

Fachhochschul-konferenz

Representing all 21 Austrian UAS

DANSKE PROFESSIONS-HØJSKOLER

Danske Professionshøjskoler

Representing all 8 UAS of Denmark

ARENE

ARENE

Representing 24 Finnish UAS

Hochschulallianz für den Mittelstand
Anwendungsorientierte Hochschulen in Deutschland

Hochschulallianz für den Mittelstand

Representing 12 German UAS

BW
HAW Hochschulen für Angewandte Wissenschaften Baden-Württemberg

HAW BW

Representing 24 UAS in the region of Baden-Württemberg

Organisational structure
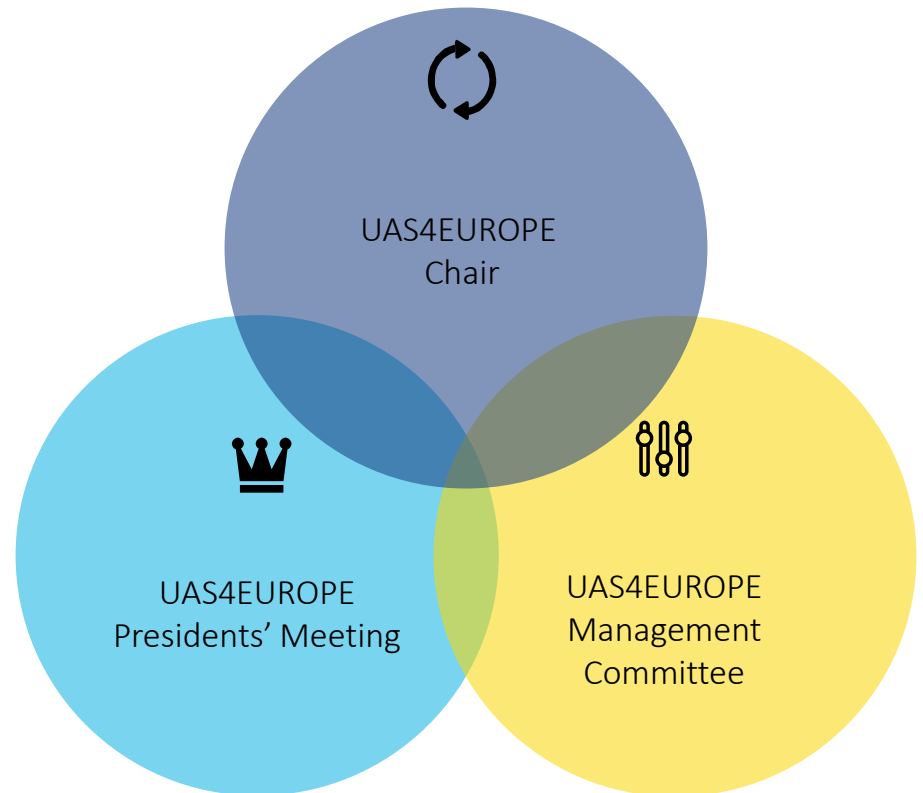
UAS4EUROPE Chair

One of the members' presidents is representing UAS4EUROPE for a period of two years, assisted by a vice chair.
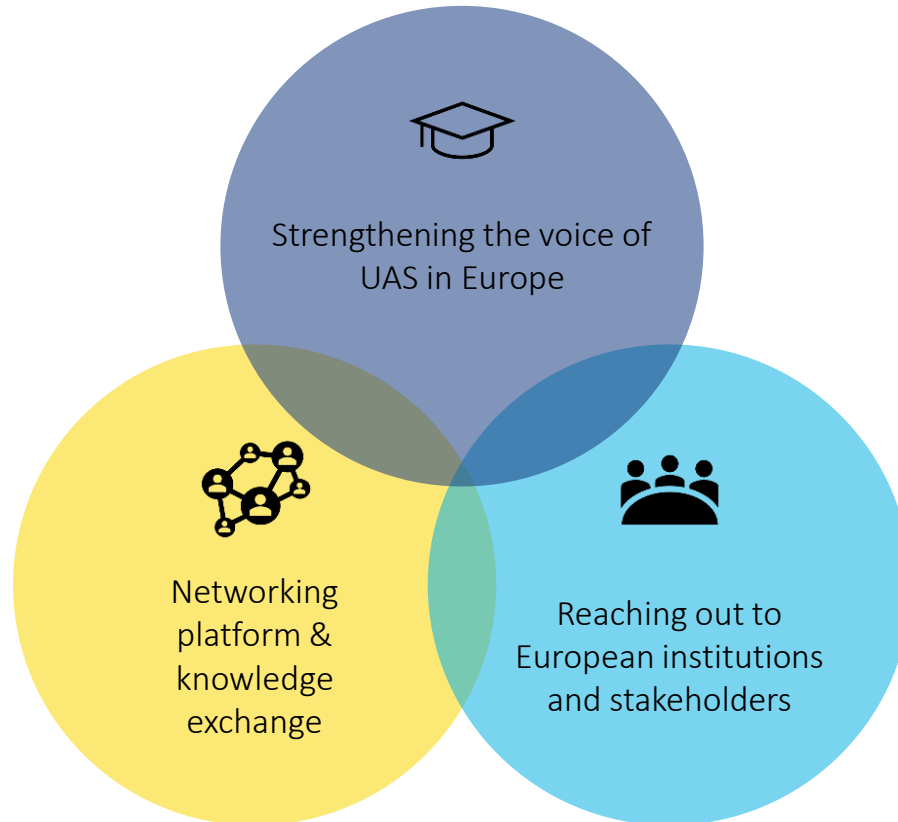
UAS4EUROPE Presidents' Meeting

Meeting of the members' presidents.
Four times per year.
Comparable to a General Assembly, all major decisions are taken by this body.
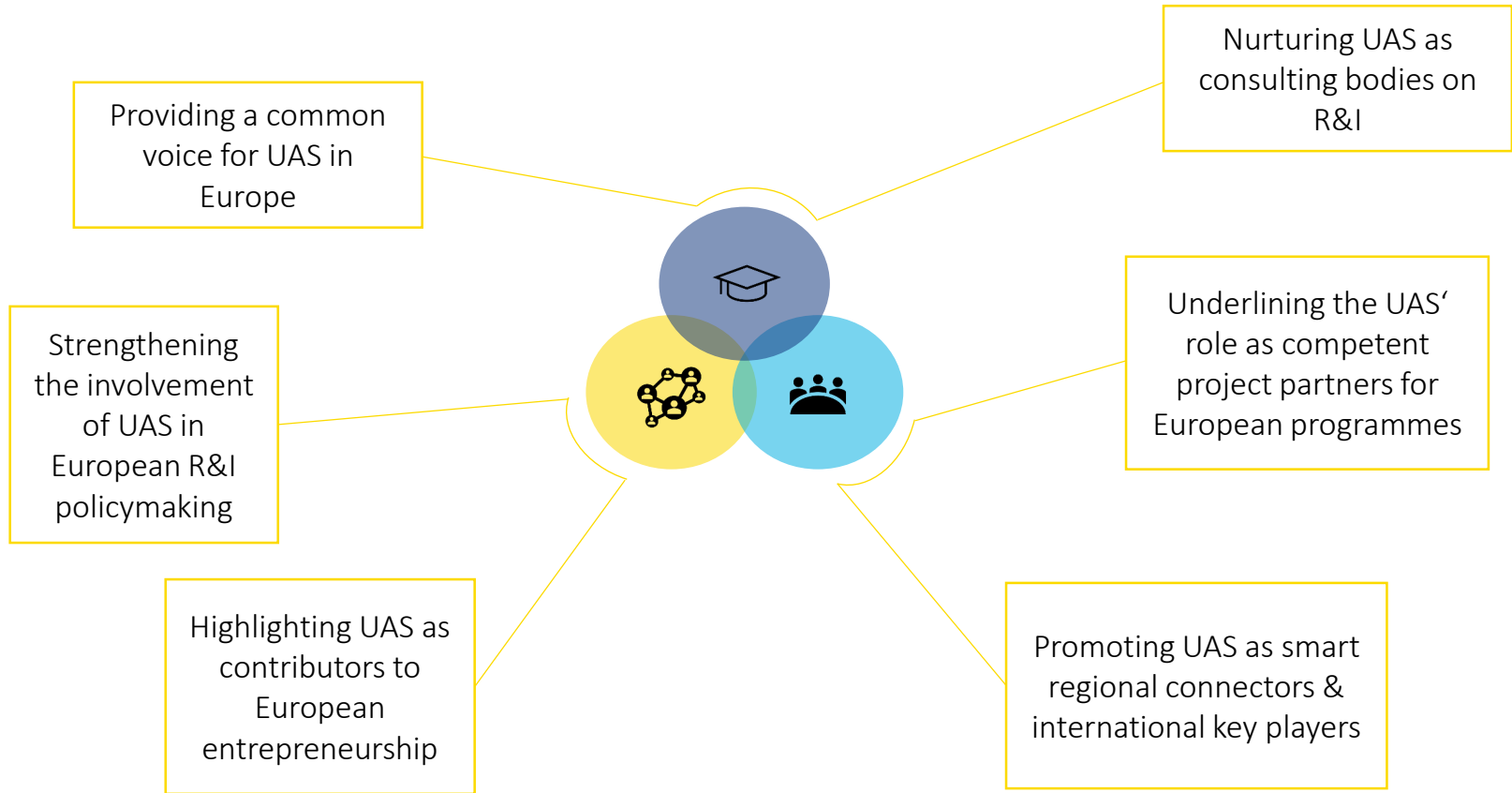
UAS4EUROPE Management Committee

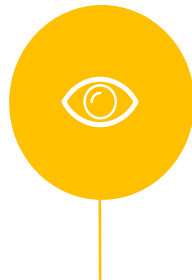One or two persons from each member organisation are carrying out the daily business of UAS4EUROPE.

UAS4EUROPE
Chair

UAS4EUROPE
Presidents' Meeting

UAS4EUROPE
Management
Committee

Our Mission – Promoting the UAS model

Strengthening the voice of UAS in Europe

Networking platform & knowledge exchange

Reaching out to European institutions and stakeholders

Our Goals/Objectives

Nurturing UAS as consulting bodies on R&I

Providing a common voice for UAS in Europe

Strengthening the involvement of UAS in European R&I policymaking

Underlining the UAS' role as competent project partners for European programmes

Highlighting UAS as contributors to European entrepreneurship

Promoting UAS as smart regional connectors & international key players

What We Do

Represent European UAS at EU level

Increase the visibility of UAS on European level

Contribute to shaping European research funding programmes

Inform actors on policy developments on the European level

What is going on at UAS4EUROPE?

Current activities

- Publication of a Position Paper towards the new Communication of the **European Research Area**

- Publication of a Commitment Paper to the **SDGs**

- **Networking Conference** (11 May)

- Exchanges with representatives of the European Commission (**Jean-Eric Paquet**, Director General for R&I & **Jean-David Malo**, EIC Director)

- Regular exchanges with **RTD organisations** (EUA, CESAER, The Guild)

- Discussions about the **Future of UAS4EUROPE**

- Participation in **public consultations** by the European Commission (Horizon Europe, European Research Area, European Innovation Ecosystems)

- **European Innovation Area** Expert Group & High-level event on the EIA (8 October)

Position Paper on „A new European Research Area for Research and Innovation"

UAS4EUROPE published its Position Paper on the Communication for "A new European Research Area for Research and Innovation" on 30 September 2020 with a focus on the following points:

- Institutional transformation of universities
- Inclusiveness
- Symbioses between academia and industry
- Synergies
- Governance
- Openness and international cooperation

Joint Commitment to the UN Sustainable Development Goals (SDGs)

In a joint presidents' statement, UAS4EUROPE pledges to "use its position […] to strengthen the role and visibility of UAS in their commitment to the SDGs".

The statement is complemented by a background paper outlining the **contribution of UAS to the achievement of the SDGs**.

In a next step, UAS4EUROPE will approach its member UAS in the form of a **survey** to find out about existing opportunities and challenges on the ground with regard to the SDGs.

Networking Conference
Impressions
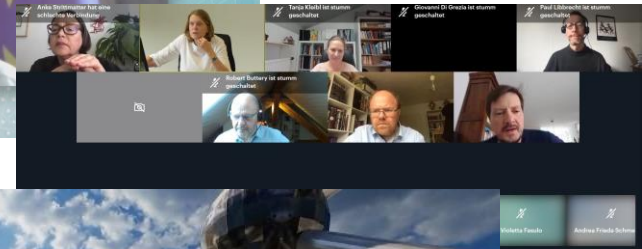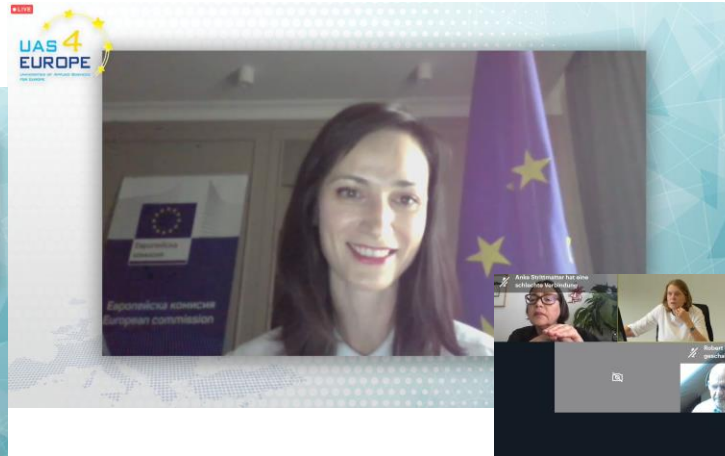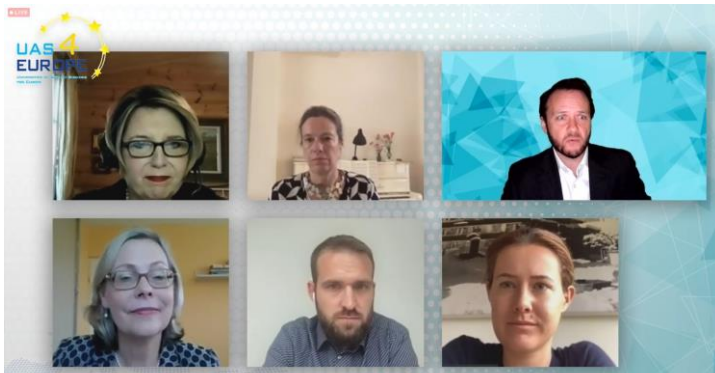
❗ Read our conference report here❗

European Innovation Area

UAS4EUROPE High-Level Event
Realizing the European Innovation Area

Launch of the
UAS4EUROPE Innovation Action Plan for Europe

08 October 2021

More on our event website

Open Science:

- Results shall be published by default in open access journals

- Stronger open data policy

Partnerships & Missions:

- Rationalisation of partnership landscape

- Mission-based approach to increase outreach to citizens

Support for disruptive innovation through all stages including scaling up

- New unified institution for disruptive innovation: European Innovation Council

- Cornerstone equity investments by EIC Fund managed by EIB in addition to grant of up to €2.5m

What is Comitology?

How is a H2020/Europe Work Programme developed?

Who is involved?

How to gain influence?

Article 260 and 261 TFEU and EU Regulation 182/2011

80% of EU legislation (secondary)

"Practical way to make things happen"

Treaty on the Functioning of the European Union

Horizon Europe regulation

Specific Programme Decision of Horizon Europe

ERA

Geen Deal / Just Transition etc.

VdL priorities

Policy Agendas: eg. EIP's, SET Plan, SCAR, etc.

Council and EP

Commission has right of initiative

Prepares draft for approval by memberstates

Consultations

Factfinding

Inspiration

Formal processes:

- Internal discussion in COM

- Discussion with Advisory Groups

- Hearings of European Technology Platforms ETP's

- Public / Stakeholder consultations

EXPERT GROUPS

Informal processes:

- Bilateral contacts

- Conferences, workshops etc.

- Current events

Co-Creation

Co-Design

Structuring input

- Strategic Plan (HE)
- Includes identification of Missions and Partnerships

- Bi-annual Work Programmes

- Clusters
- Missions topics
- Cross-cutting issues???

Scoping paper

Pre-draft

Non-paper

Orientation paper

Issues paper

Destinations orientation...

Work programmes under comitology rules

Commission must seek opinion of Member States on WP's

Post-Lisbon rules have limited MS' power in PC's

COM discusses scoping paper with MS

Typically 3-4 meetings with MS and associated countries

Associated countries are observers with right to speak in PC's

COM must seek opinion of MS

Traditionally consensus sought, but now always

If no consensus:

Voting amongst MS

Possible outcomes:

1. Positive Opinion – COM must adopt draft

2. No Opinion – COM can adopt draft or renegotiate

3. Negative Opinion – Com cannot procede – either submit new proposal or send to conciliation committee
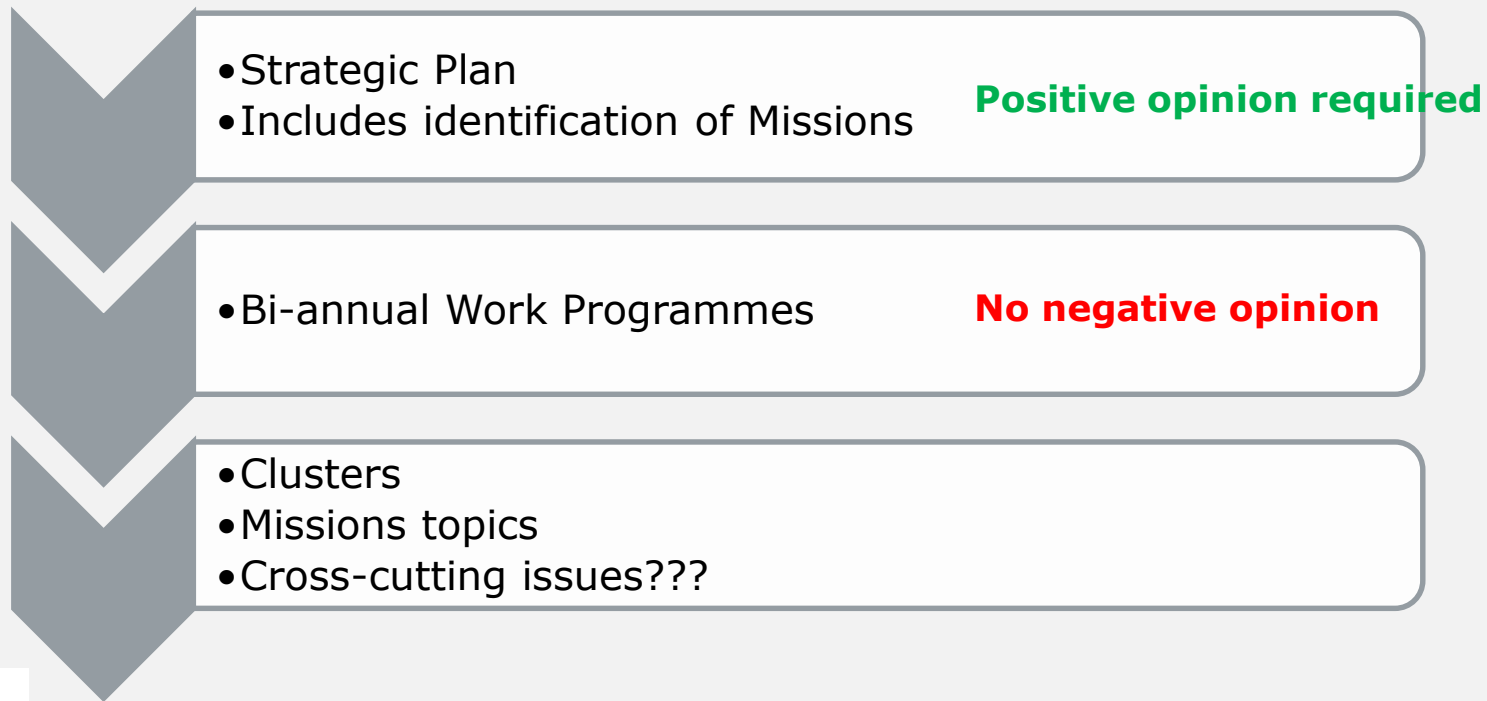
Qualified Majority required for opinion!

- Strategic Plan
- Includes identification of Missions   **Positive opinion required**

- Bi-annual Work Programmes   **No negative opinion**

- Clusters
- Missions topics
- Cross-cutting issues???

Adoption in College of Commissioners

Publication in Official Journal

And on the funding portal
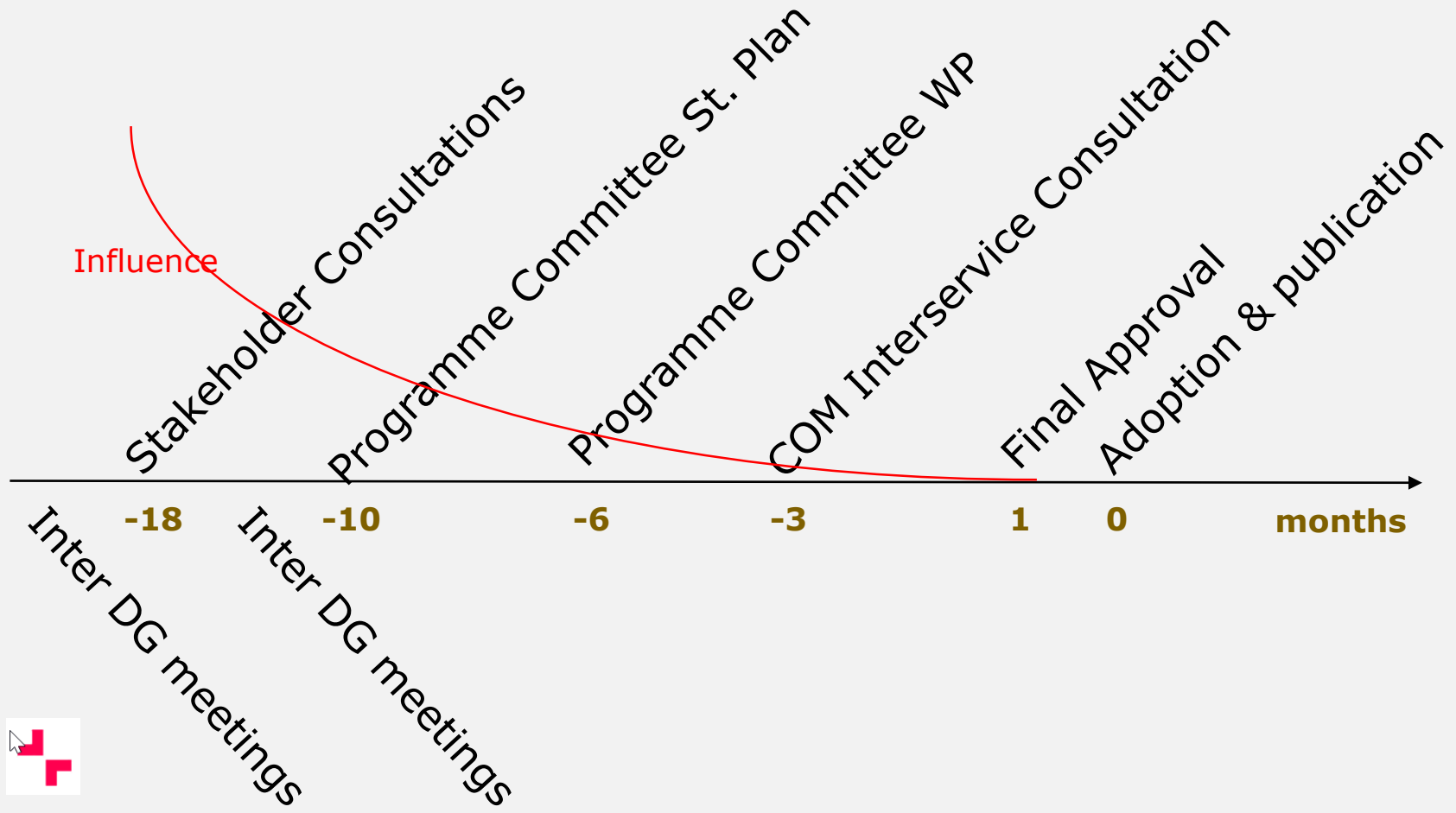
Horizon Europe (2021-2027).

Pillar I	Pillar II	Pillar III
Excellent Science €25.8 bn	**Global Challenges and European Industrial Competitiveness** €52.7 bn	**Innovative Europe** €13.5 bn

Pillar I
- **European Research Council** €16.6 bn
- **Marie Skłodowska-Curie Actions** €6.8 bn
- **Research Infra-structures** €2.4 bn

Pillar II
- Civil Security for Society
- Culture, Creativity and Inclusive Society
- Digital, Industry and Space
- Health
- Climate, Energy and Mobility
- Food, Bioeconomy, Natural Resources, Agriculture and Environment
- Joint Research Centre

Pillar III
- **European Innovation Council** €10 bn
- **European Institute of Innovation and Technology** €3 bn
- **European Innovation Ecosystems** €0.5 bn

Widening Participation and Strengthening the European Research Area

Widening Participation and Spreading Excellence at least 3.3%	Reforming and Enhancing the European R&I-System €0.4 bn

Excellent Science.
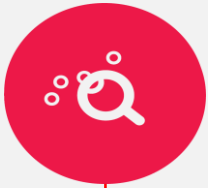
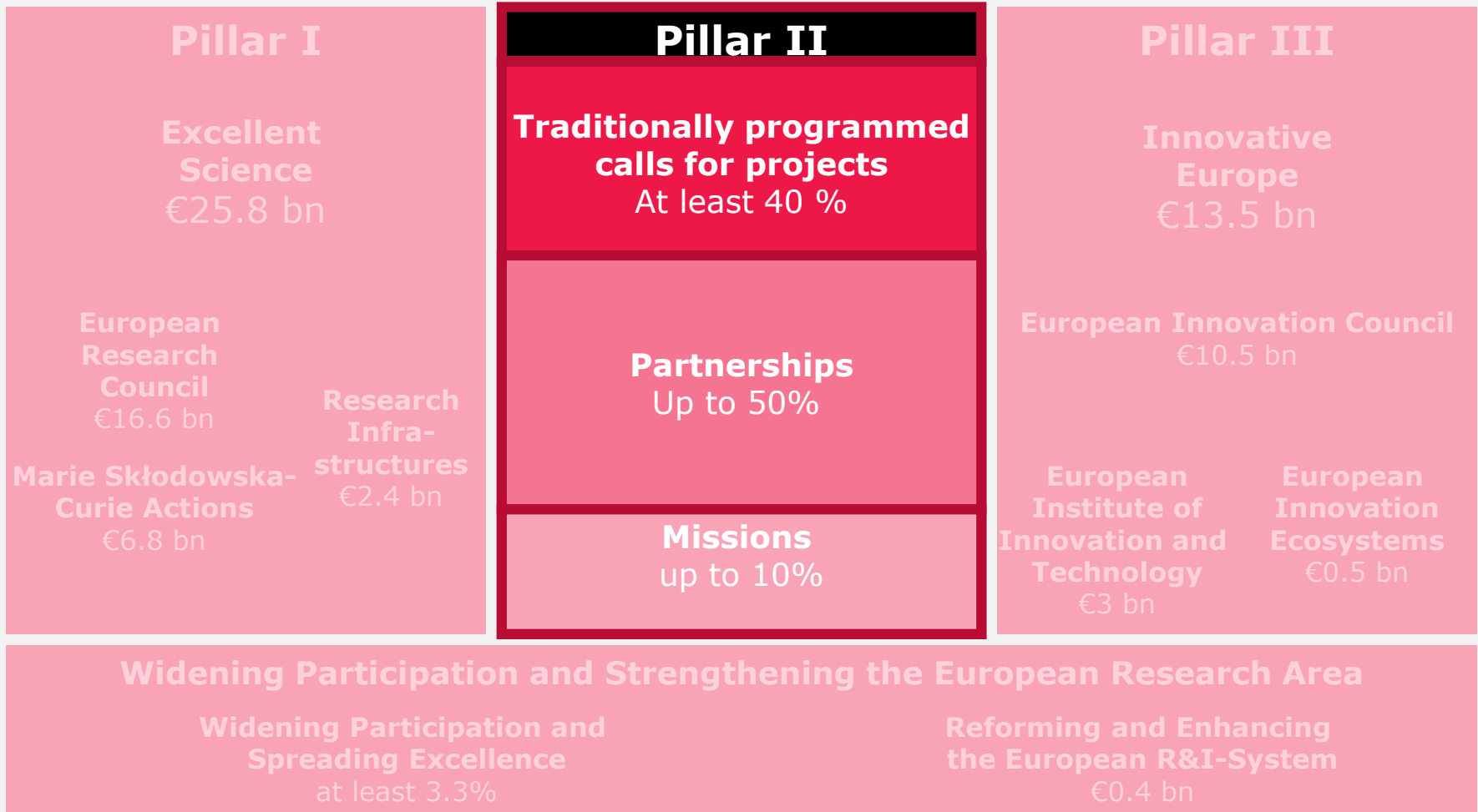**European Research Council**

Marie Skłodowska-Curie Actions (MSCA)

Research Infrastructures

Horizon Europe (2021-2027) Budget Division.

Pillar I

Excellent Science
€25.8 bn

European Research Council
€16.6 bn

Research Infra-structures
€2.4 bn

Marie Skłodowska-Curie Actions
€6.8 bn

Pillar II

Traditionally programmed calls for projects
At least 40 %

Partnerships
Up to 50%

Missions
up to 10%

Pillar III

Innovative Europe
€13.5 bn

European Innovation Council
€10.5 bn

European Institute of Innovation and Technology
€3 bn

European Innovation Ecosystems
€0.5 bn

Widening Participation and Strengthening the European Research Area

Widening Participation and Spreading Excellence
at least 3.3%

Reforming and Enhancing the European R&I-System
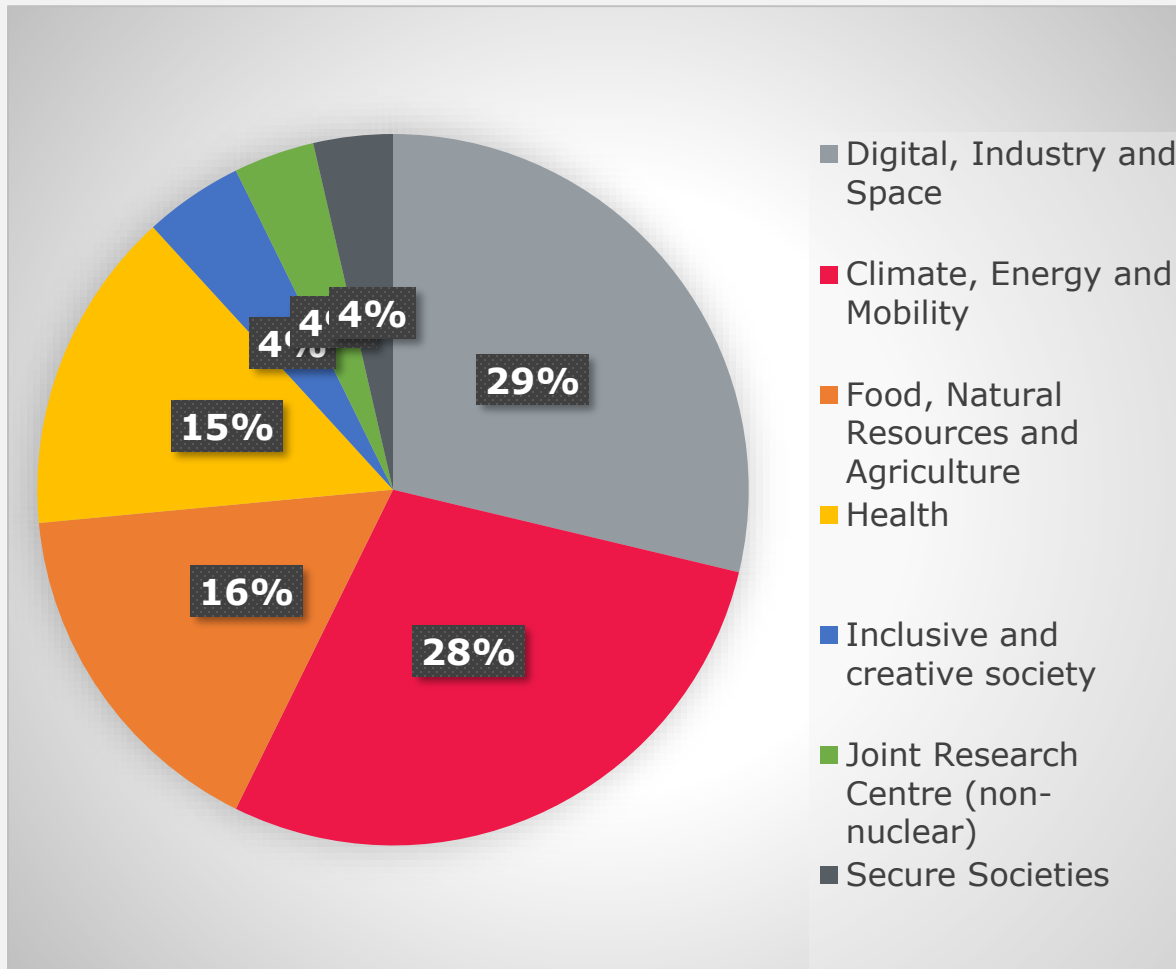€0.4 bn

Global Challenges & European Industrial Competitiveness

Clusters	Areas of Intervention (Implemented through usual calls, missions & partnerships)
Health	Health throughout the life course; Environmental and social health determinants; Non-communicable and rare diseases; Infectious diseases, including poverty-related and neglected diseases; Tools, technologies and digital solutions for health and care, including personalised medicine; Health care systems.
Culture, creativity and inclusive society	Democracy and governance; Culture, cultural heritage and creativity; Social and economic transformations.
Civil Security for Society	Disaster-resilient societies; Protection and security; Cybersecurity.
Digital, Industry and Space	Manufacturing technologies; Key digital technologies, including quantum technologies; Emerging enabling technologies; Advanced materials; Artificial intelligence and robotics; Next generation internet; Advanced computing and Big Data; Circular industries; Low carbon and clean industries; Space, including earth observation.
Climate, Energy and Mobility	Climate science and solutions; Energy supply; Energy systems and grids; Buildings and industrial facilities in energy transition; Communities and cities; Industrial competitiveness in transport; clean, safe and accessible transport and mobility; Smart mobility; Energy storage.
Food, Bioeconomy, Natural Resources, Agriculture and Environment	Environmental observation; Biodiversity and natural resources; Agriculture, forestry and rural areas; Seas, oceans and inland waters; Food systems; Bio-based innovation systems in the EU bioeconomy; Circular systems.
Joint Research Centre	support to the functioning of the internal market and the economic governance of the Union; support to Member States with implementation of legislation and development of smart specialisation strategies; analytical tools and methods for policy making; knowledge management; knowledge and technology transfer; support to science for policy platforms.

Pie chart legend:
- Digital, Industry and Space — 29%
- Climate, Energy and Mobility — 28%
- Food, Natural Resources and Agriculture — 16%
- Health — 15%
- Inclusive and creative society — 4%
- Joint Research Centre (non-nuclear) — 4%
- Secure Societies — 4%

SwissCore
Contact Office for European Research
Innovation and Education

R&I Missions ▶ **Connecting to citizens:** Missions will relate EU's research and innovation to society and citizens' needs, with strong visibility and impact

A mission will consist of a portfolio of actions intended to achieve a bold and inspirational as well as measurable goal within a set timeframe, with impact for science and technology, society and citizens that goes beyond individual actions.

Horizon Europe proposal defines mission characteristics and criteria

Specific missions will be co-designed with Member States, stakeholders and citizens and programmed within the Global Challenges and Industrial Competitiveness pillar (drawing on inputs from other pillars)

🐦 @SwissCore

1. Adaptation to Climate Change including Societal Transformation

2. Cancer

3. Healthy Oceans, Seas, Coastal and Inland Waters

4. Climate-Neutral and Smart Cities

5. Soil Health and Food

- **Mission boards**: 15 prominent experts charged with the proposition of concrete candidate missions until end 2019 (members announced on 30 July).

- **Mission assemblies:** up to 30 experts per area to support the work of the mission boards, support citizens engagement work and receive targeted questions. One meeting with mission boards in January 2020.

- **Experts from member states:** nominated by Shadow Programme Committee Strategic Configuration, 1 expert per country per mission area (involvement of member states and decision making on proposed missions with European Commission)

Implementation and Synergies

- **Coordination with national programmes, regional programmes**

  - CSAs within each mission area to elaborate coordination

  - CSAs cross-cutting to look at mission governance overall

  - Work packages on sharing best practices, coordinating with authorities and engaging stakeholders

- Conclusion in 2023: How to implement governance.

New generation of objective-driven and more ambitious partnerships in support of agreed EU policy objectives

Key features

- **Simple architecture and toolbox**
- **Coherent life-cycle approach**
- **Strategic orientation**

Co-programmed
Based on Memoranda of Understanding/ contractual arrangements; implemented independently by the partners and by Horizon Europe through open calls

Co-funded
Based on a single joint programme agreed by partners; commitment of partners for financial and in-kind contributions & financial contribution by HEU, can go beyond HEU funds

Institutionalised
Based on long-term dimension and need for high integration; partnerships based on Articles 185 / 187 of TFEU and the EIT-Regulation supported by Horizon Europe

Health Innovations

Key digital and enabling technologies

Metrology

EU air traffic, aviation and rail

Areas for possible institutionalised partnerships (Art. 185/7)

Sustainable bio-based solutions

Hydrogen and sustainable energy storage

Clean and connected mobility

Innovative SMEs
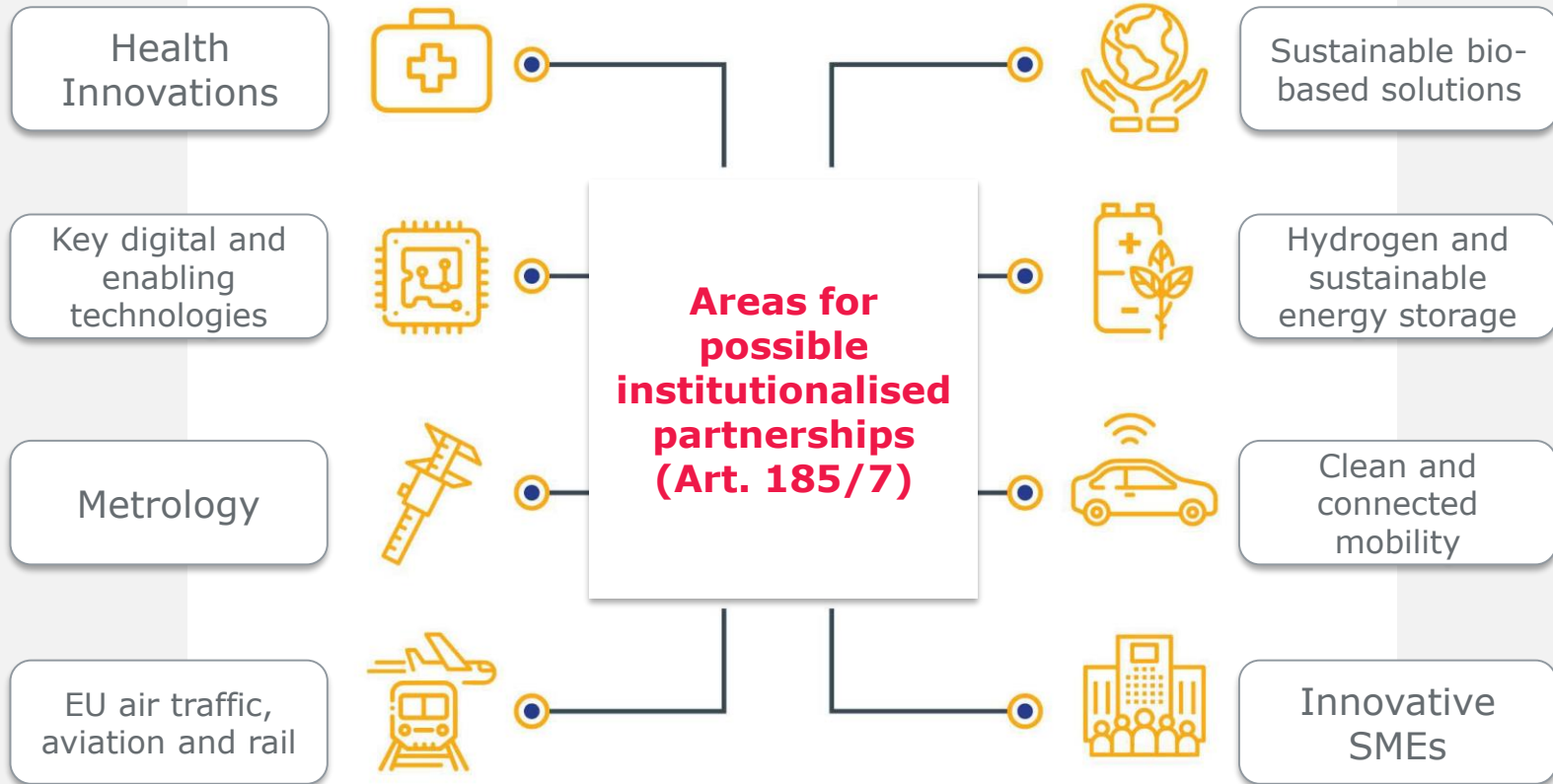
Horizon Europe (2021-2027).

Pillar I

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€25.8 bn

European Research Council
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Marie Skłodowska-Curie Actions
€6.8 bn

Research Infra-structures
€2.4 bn

Pillar II

Global Challenges and European Industrial Competitiveness
€52.7 bn

Civil Security for Society

Culture, Creativity and Inclusive Society

Digital, Industry and Space

Joint Research Centre

Health

Climate, Energy and Mobility

Food, Bioeconomy, Natural Resources, Agriculture and Environment

Pillar III

Innovative Europe
€13.5 bn

European Innovation Council
€10.5 bn

European Institute of Innovation and Technology
€3 bn

European Innovation Ecosystems
€0.5 bn

Widening Participation and Strengthening the European Research Area

Widening Participation and Spreading Excellence
at least 3.3%

Reforming and Enhancing the European R&I-System
€0.4 bn
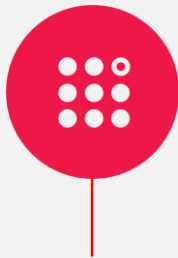
Innovative Europe.

European Innovation Council (EIC)
- **The Pathfinder**: Funding for early stage development (both monobeneficiary and consortia)
- **The Accelerator**: grants and equity for scale-ups (mono-beneficiary)
- Additional activities of the EIC (fellowships, prizes)

European Innovation Ecosystems
- EIC Forum of innovation agencies
- Co-fund activities
- Eureka Eurostars
- Sharing best practices
- Citizen and gender science
- Supporting international cooperation
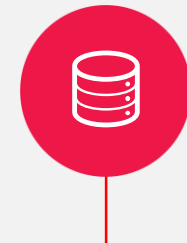
EIT
- Sustainable innovation ecosystems across Europe
- Entrepreneurial and innovation skills in a LLL perspective and the entrepreneurial transformation of EU universities
- New solutions to the market
- New additional KICs including one on cultural and creative industries (due to start 2022)

The Pathfinder: **€3bn**

- Supporting researchers, innovators and innovative companies with ideas relating to future and emerging breakthrough technologies
- From proof of concept to prototypes for technology validation
- Programme managers
- Business acceleration services
- Transition activities

The Accelerator: €7bn

- Grants and Equity funding for scaling up disruptive innovation
- From TRL 6 to 9
- Grant-only funding will be available (€3bn earmarked)
- Equity-only funding will be available for companies who have already received grants (eg. SME instrument)
- Candidates for equity will undergo "market test" to crowd in private capital.

Swiss success stories in the current pilot of the European Innovation Council:

2018: Swiss companies constitute 93 of the 1350 beneficiaries of SME instrument phase 1
(€ 50'000 award for feasibility study)

- **6.8% of total SME phase 1 beneficiaries**

2018: Swiss companies constitute 2 of the 5 EU Innovation Radar prize winners

2019: Swiss companies constitute 9 Of 137 final interviewees of SME instrument phase 2
(late stage development grants €500k - € 2.5 m) in February and 12 of 174 finalists in May.

- **6.9% of total SME phase 2 and growing
  (interview stage)**

The Accelerator: €7bn

- Grants and Equity funding for scaling up disruptive innovation
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- Equity-only funding will be available for companies who have already received grants (eg. SME instrument)
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# The Digital Europe Programme (DEP)

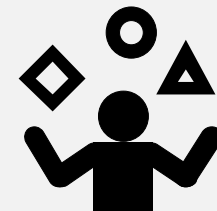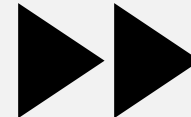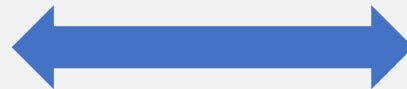# General Objective of the Programme:

- "To support the digital transformation of industry and to foster better exploitation of the industrial potential of policies of innovation, research and technological development, for the benefit of businesses and citizens all over the Union, structured into five specific objectives"
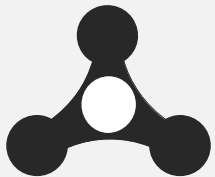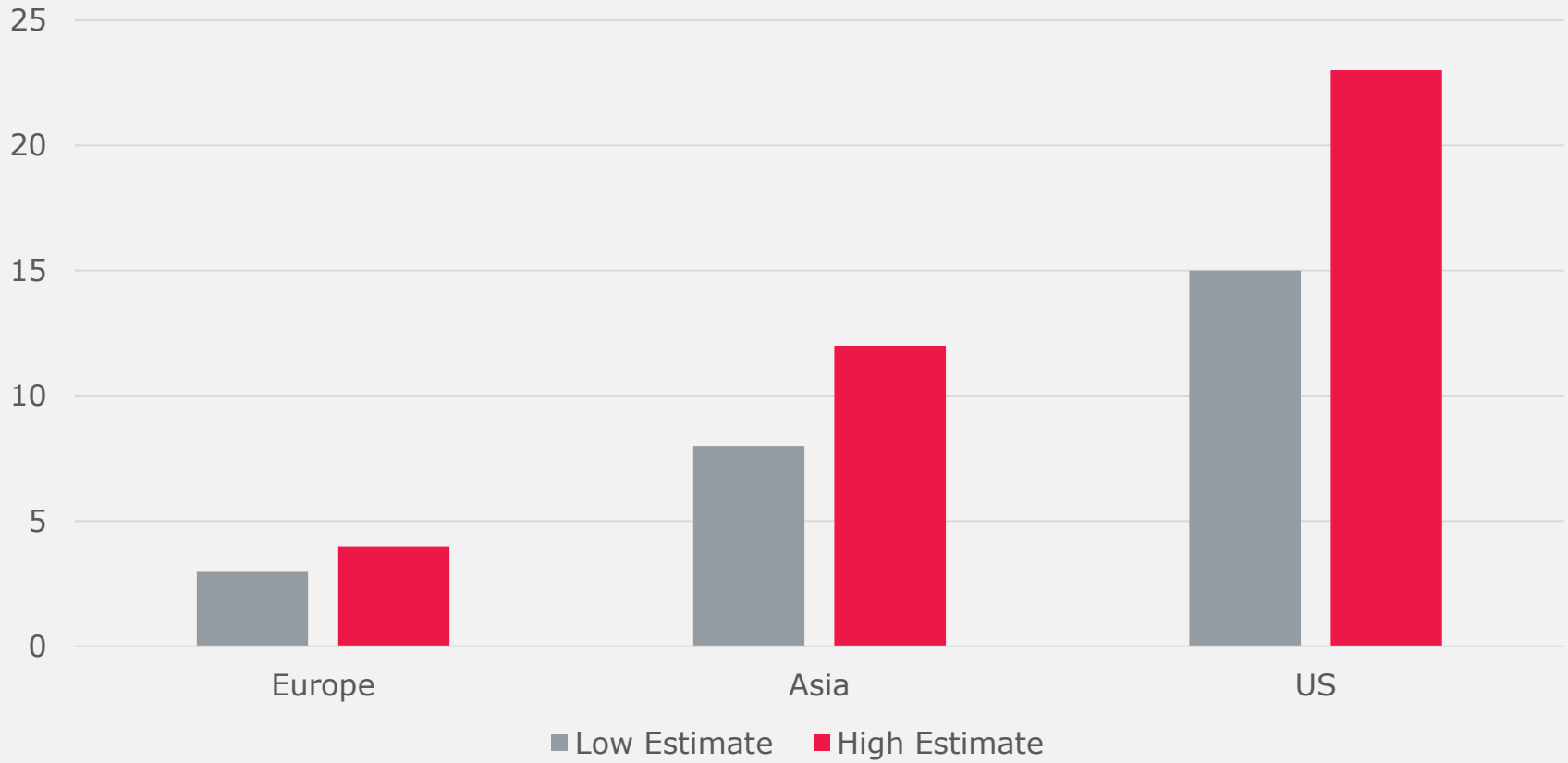
CEF

Horizon 2020
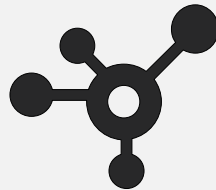
Current Programming Gap

One among top 10 priorities, 30 legislative initiatives since 2015

- Facilitate access for consumers and businesses to digital goods and services;

- Create a level playing field across Europe to create the right framework conditions to stimulate innovation;

- Maximise the growth potential of the digital economy.

Investment in AI (2016).

Bar chart showing AI investment (2016) by region with Low Estimate and High Estimate:
- Europe: Low Estimate 3, High Estimate 4
- Asia: Low Estimate 8, High Estimate 12
- US: Low Estimate 15, High Estimate 23

Legend: Low Estimate (grey), High Estimate (red)

>35% of top-cited publications

pioneering in fields like AI, 5G

digital divide across the EU

striking investment gap

low uptake of digital technologies in public sector

low private investment in R&D (especially in ICT sector)

low digitisation of companies
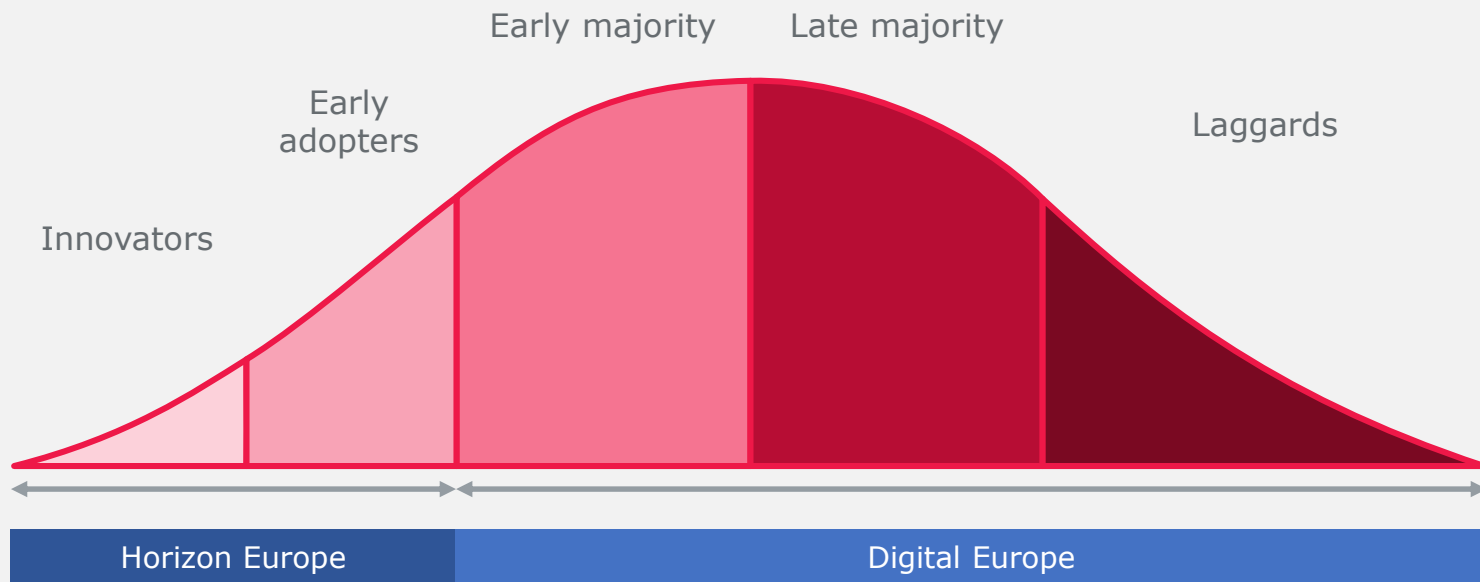
pronounced skills gap

The five specific objectives.

10 01

Specific Objective 5
Deployment, Best Use of Digital Capacities and Interoperability

Specific Objective 1
High Performance Computing

Specific Objective 2
Artificial Intelligence

Specific Objective 3
Cybersecurity

Specific Objective 4
Advanced Digital Skills

Capacity building

Horizon Europe

Digital Europe

Horizon Europe focuses on innovative SMEs developing new products

Digital Europe should foster wide uptake of digital technologies

High Performance Computing (HPC)
•Institutionalised Partnership (CH to be a member)
•Building up supercomputing infrastructure

€2.7 bn

Artificial Intelligence (AI)
•Direct management (mainly joint procurement & grants)
•Data resources and libraries, large experimentation facilities

€2.5 bn

Cybersecurity
•Institutionalised Partnership (only EU states)
•Advanced cybersecurity equipment and data infrastructure

€2.0 bn

Advanced Digital Skills
•Digital Innovation Hubs
•HPC, AI, Cybersecurity, Big Data, Distributed ledger, Robotics

€0.7 bn

Deployment, best use of digital capacities and interoperability
•Digital Innovation Hubs; digitisation of administration and industry

€1.3 bn

Digital Europe: Level of ambition

High Performance Computing

- Two exascale machines by 2022-2023
- One post-exascale machine by 2027
- Hybrid HPC-Quantum infrastructure by 2027

Cybersecurity

- By 2022: at least one cybersecurity competence centre per Member State
- By 2025: encryption techniques that can resist quantum computing

Advanced Digital Skills

- Increase ICT specialist employment from 8.2 million in 2016 to at least 12.3 million in 2027
- Increase growth rate of ICT specialists from 3.3% (2007-2016) to 4.3% (2016-2027) p.a.

Digital Innovation Hubs

- 270 Hubs across the EU
- 90 experiments per hub
- Reaching ~42000 SMEs

Modernisation of Public Administration

- By 2030: 450 million citizens and 24 million SMEs benefit from 'once only principle' for their administrative information

Digital Health

- By 2022: 1 million of sequenced genomes
- By 2027: 450 million citizens have access to health records and 100 million citizens have digital tools and services to improve the management of their health condition
- Data from 10 million citizens available for new discoveries

Currently:

- Digital Skills and Jobs Coalition under New Skills Agenda for Europe

- Skills divide and lack of highly-trained professionals (1 million vacancies)

- First pilot actions (Digital Opportunity Traineeship)

Under DEP

- Long-term trainings (Master's, PhD)

- On-the-job trainings and traineeships

- Short-term trainings and courses

Currently:

- Low uptake of digital technologies in European industry and administrations

- Digitising European Industry Initiative

- Tallinn Summit in 2017, defining priorities and declaration on e-Government

Under DEP

- Two rather separate parts:

  – digitising the public sector and areas of public interest

  – digitising industry

- European Digital Innovation Hubs (supported by grants) playing a key role in implementation

Digital Innovation Hubs.

28 National HPC Competence Centres 28 National Coordination Centres for Cybersecurity 4-8 AI Reference Sites	250+ European Digital Innovation Hubs
Specialised in their topic	Generalists in their topic with a strong outreach to SMEs
Providing products/services that can be further disseminated by the DIH	Helping SMEs to apply the products/services according to the needs of the SME
Disseminating latest knowledge to DIHs through regular "train the trainer" programmes	Going back to the specialist centres if they are not able to help the SME

Thank you.

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Widening Participation and Strengthening the European Research Area.

Widening Participation and Spreading Excellence
- Teaming
- Twinning
- ERA Chairs
- Excellence Initiatives
- COST

Reforming and enhancing the European R&I system
- Strengthening the evidence base for research and innovation policy
- Transition towards Open Science
- Support to national R&I policy reform
- Supporting the modernisation of universities in ERA
- Supporting the effective international cooperation with third countries
- Foresight
- EU R&I programme implementation
- Scientific input to other policies