Space R&I Funding beyond 2020: Horizon Europe

ESSC plenary
Nov 2018
London

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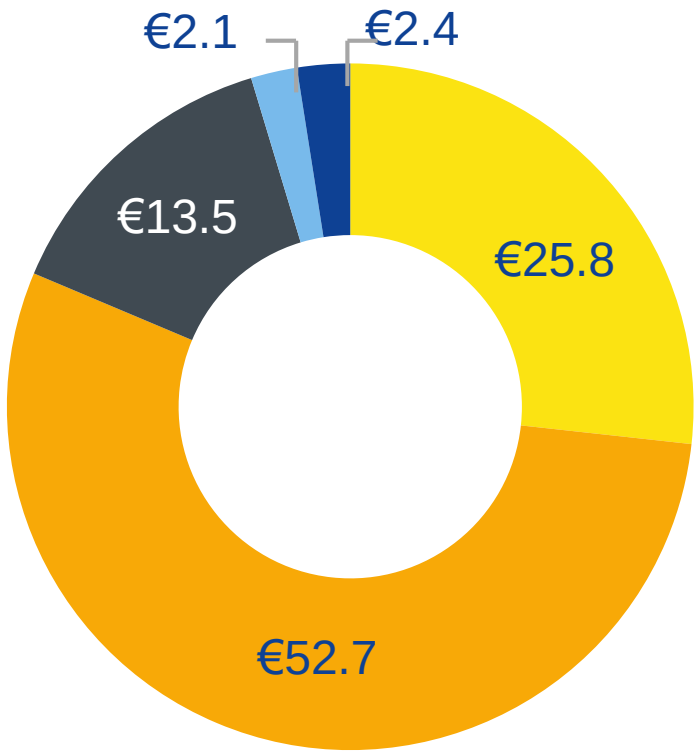
Unit I1 Space policy and research

DG GROW

Horizon Europe

Budget: €100 billion*



€ billion
In current prices

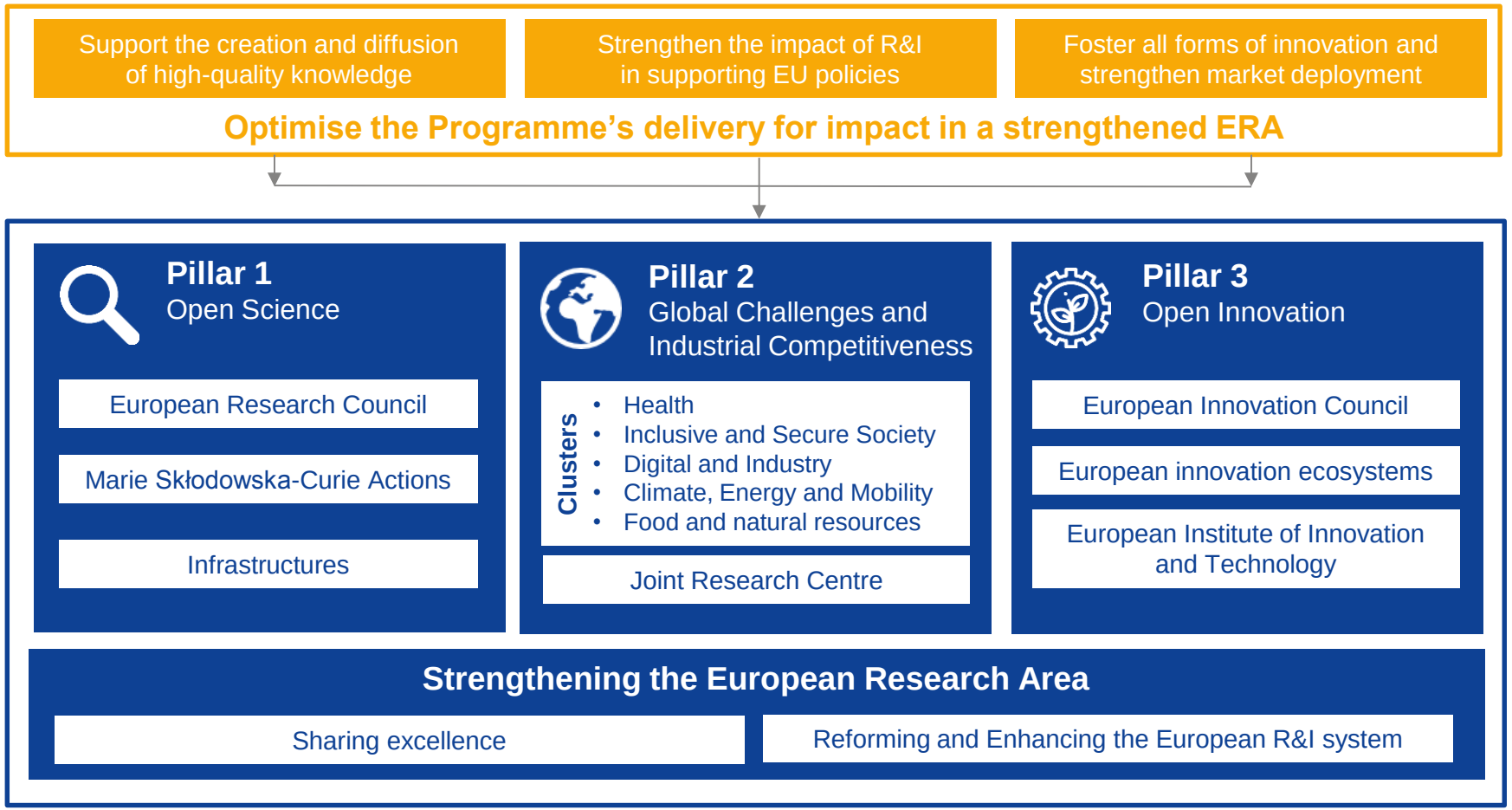
- Open Science
- Global Challenges & Ind. Competitiveness
- Open Innovation
- Strengthening ERA
- Euratom

* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.

European Commission

Structure

Specific objectives of the Programme



Pillar 2
Global Challenges & Industrial Competitiveness:

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

Clusters implemented through usual calls, missions & partnerships	Budget (€ billion)
Health	*€ 7.7*
Inclusive and Secure Societies	***€ 2.8***
Digital and Industry	***€ 15***
Climate, Energy and Mobility	***€ 15***
Food and Natural Resources	***€ 10***
Joint Research Centre supports European policies with independent scientific evidence & technical support throughout the policy cycle	€ 2.2

Digital and Industry

Clusters	Areas of intervention	
Health	* Health throughout the life course * Non-communicable and rare diseases * Tools, technologies and digital solutions for health and care	* Environmental and social health determinants * Infectious diseases * Health care systems
Inclusive and Secure Societies	* Democracy * Social and economic transformations * Protection and Security	* Cultural heritage * Disaster-resilient societies * Cybersecurity
Digital and Industry	* Manufacturing technologies * Advanced materials * Next generation internet * Circular industries * Space	* Key digital technologies * Artificial intelligence and robotics * Advanced computing and Big Data * Low carbon and clean industry
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 transport and mobility * Energy storage
Food and Natural Resources	* Environmental observation * Agriculture, forestry and rural areas * Food systems * Circular systems	* Biodiversity and natural capital * Sea and oceans * Bio-based innovation systems

Intervention Area Space

- **Broad lines**
  - Galileo and EGNOS: innovative applications, global uptake including international partners. Next generation systems
  - Copernicus: innovative applications, global uptake and international partners. Earth observation data techniques. Next generation systems.
  - Space Situational Awareness: robust EU capacity to monitor and forecast state of the space environment e.g. space weather, space debris and near Earth objects
  - Secure Satellite Communications for EU governmental actors: solutions for the widest possible range of governmental users
  - End-to-end Satellite Communications for citizens and businesses: cost-effective, advanced satellite communications to connect assets and people in underserved areas

Intervention Area Space

- **Broad lines (continued)**
  - Non-dependence and sustainability of the supply chain: increased technology readiness levels in satellites and launchers;
  - Space ecosystem:
    - in-orbit validation and demonstration services;
    - space demonstrators e.g., hybrid, smart or reconfigurable satellites, in-orbit manufacturing and assembly, launcher reusability, in-orbit servicing and micro-launchers;
    - breakthrough innovations, and technology transfer, in areas such as recycling, green space, artificial intelligence, robotics, digitisation, cost-efficiency, miniaturisation
  - Space science: exploitation of scientific data delivered by scientific and exploration missions, combined with the development of innovative instruments in an international environment

Timeline

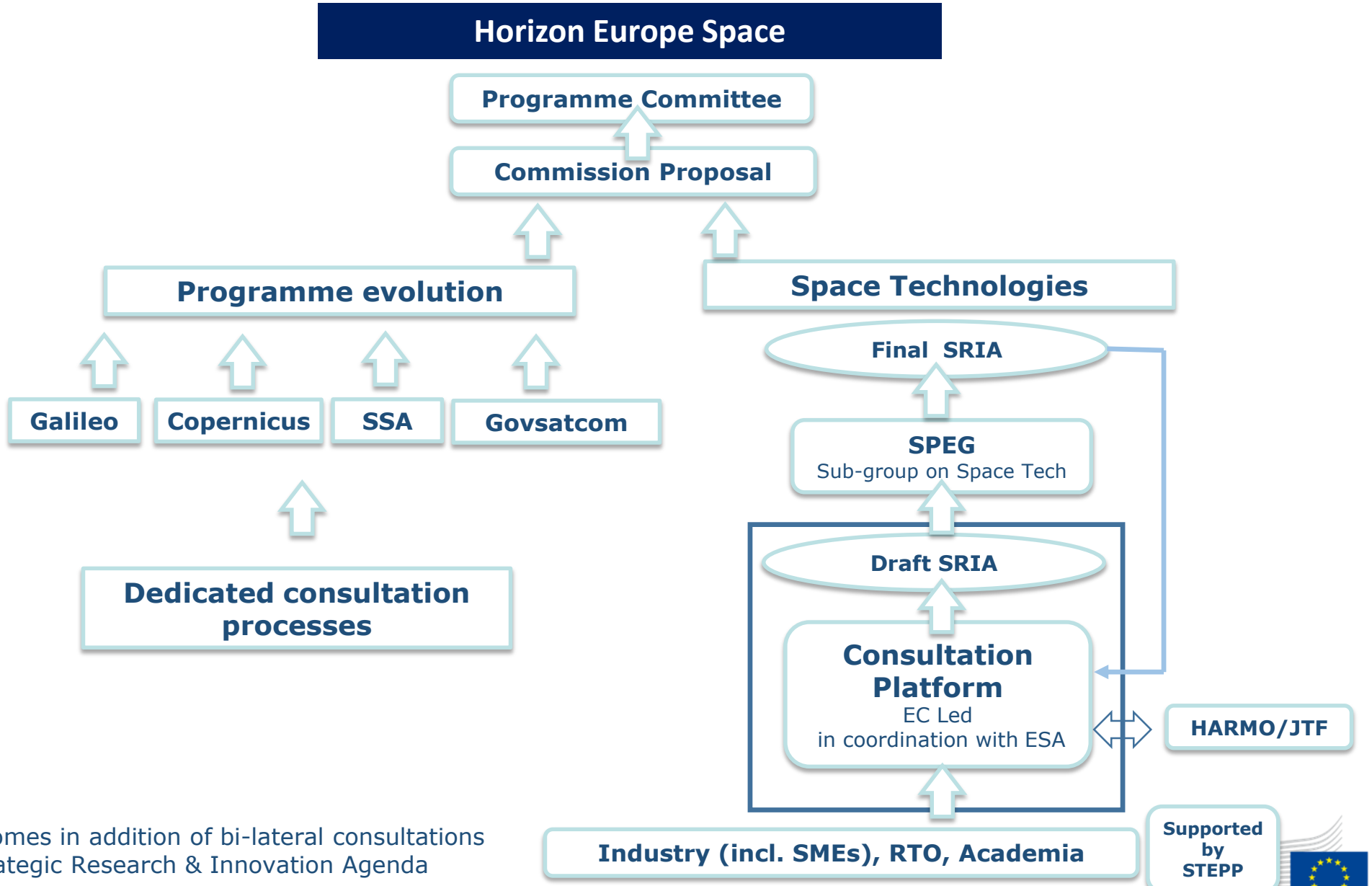
Ongoing — Parliament and Council negotiations on Union budget 2021-2027, including budget for Horizon Europe

From 7 June — Parliament and Council negotiations on the basis of the Commission proposal for Horizon Europe

2nd half 2018/2019 — Strategic planning to prepare first work programmes under Horizon Europe, including co-design of missions and setting up of partnerships

1 January 2021 — Envisaged start of Horizon Europe

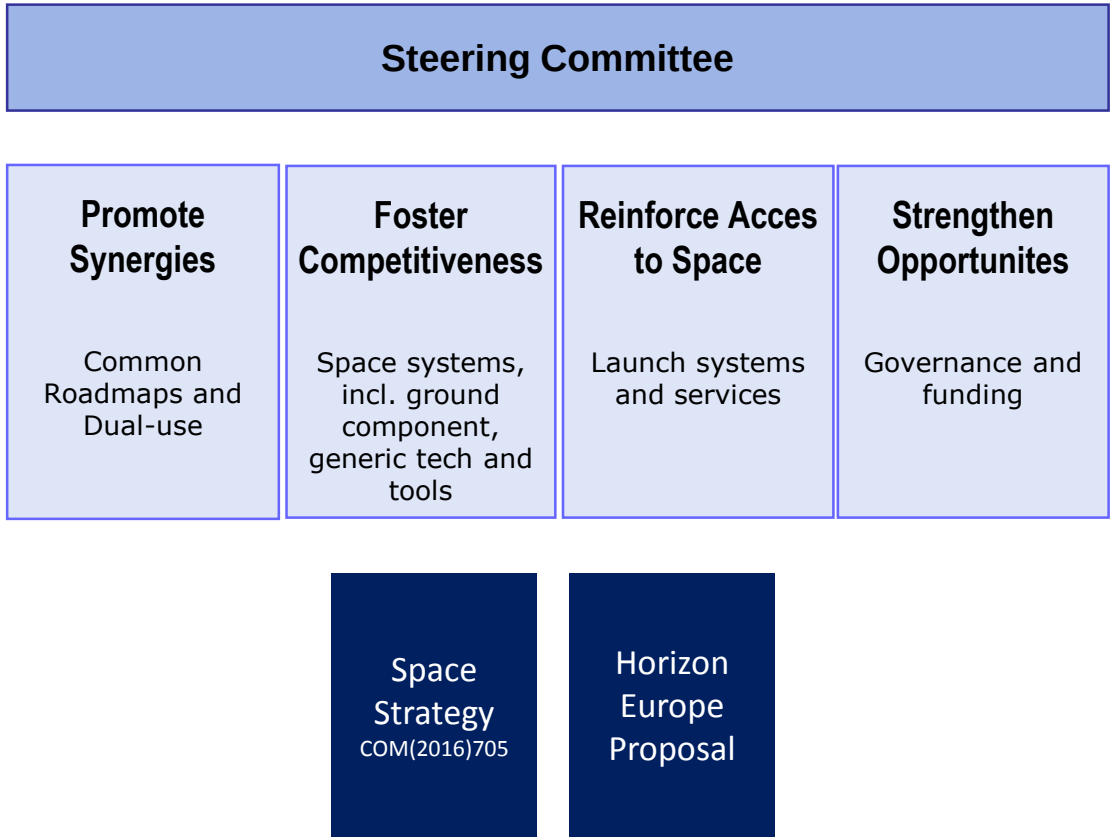
Schematic of the consultation process



This process comes in addition of bi-lateral consultations
SRIA: Strategic Research & Innovation Agenda

European Commission

Structure of the Platform



Foster Competitiveness

Example draft Table of Contents

3.1 Specific Challenges and objectives

3.2 Future Commercial Telecom Mission*

3.3 Future Commercial Earth Observation Mission*

3.4 Future space mission and ecosystems: on-orbit operations, space services, and new approaches

3.5 Enabling technology development (cross-missions, space and ground)

- Maturation
- Breakthrough technologies
- New industrial processes and production tools

3.6 Contribution to Space Science and uptake of space data (data exploitation, scientific instrumentation, contribution to scientific missions)

(*Mission: space and ground systems, payloads)

New approach to European Partnerships

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

Co-funded

Based on a joint programme agreed by partners; commitment of partners for financial and in-kind contributions & financial contribution by Horizon Europe

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