

HORIZON EUROPE

Framework programme for research and innovation

2021-2027

HORIZON EUROPE



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EURATOM

SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND

*Exclusive focus on
defence research
& development*

Research
actions

Development
actions

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*

Exclusive focus on civil applications



Pillar I
EXCELLENT SCIENCE

European Research Council

Marie Skłodowska-Curie

Research Infrastructures



Pillar II
GLOBAL CHALLENGES &
EUROPEAN INDUSTRIAL
COMPETITIVENESS

Clusters

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

Joint Research Centre

Partnerships & Missions



Pillar III
INNOVATIVE EUROPE

European Innovation
Council

European innovation
ecosystems

European Institute of
Innovation & Technology*

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

Widening participation & spreading excellence

Reforming & Enhancing the European R&I system

Fusion

Fission

Joint
Research
Center

* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

Global Challenges and European Industrial Competitiveness

Global Challenges and European Industrial Competitiveness

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



1. Health



2. Culture,
Creativity and
Inclusive Society



3. Civil Security
for Society



4. Digital, Industry
and Space



5. Climate, Energy
and Mobilty



6. Food, Bioeconomy,
Natural Recources,
Agriculture and
Environment



Joint Research Centre

Digitalisation is everywhere

Being an enabling technology means that it is present in all clusters !!

1. Health – Medical technologies, patient data, AI for health, personalized health care ...
2. Culture, creativity, Inclusive Society – eGovernment, access to cultural heritage, digitization of creative sector
3. Civil security for society – cyber crime, critical infrastructure protection, digitization of rescue services, ...
5. Climate, Energy, Mobility – Smart Energy Grids, Autonomous vehicles, climate observation technologies, ...
6. Food, Bioeconomy, Natural Resources, Agriculture and Environment – Digitisation of agriculture ...

Collaborative research

With whom? Well it depends ...

Involve stakeholders

Involve suppliers/industry

Involve RTOs and Universities

Involve society as such

4. Digital, industry & Space: Cluster aims

- Ensuring the competitive edge and autonomy of EU industry
- Fostering climate-neutral, circular and clean industry
- A major contribution to inclusiveness



Cluster 4 – Destinations

1. Climate neutral, circular, and digitised production
2. Increased autonomy in key strategic value chains for resilient industry
3. World leading data and computing technologies
4. Digital and emerging technologies for competitiveness and fit for the green deal
5. Open Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data
6. A human-centred and ethical development of industrial technologies

Cluster 4 – Call draft dead-lines

Climate neutral, circular, and digitised production 2021

Increased autonomy in key strategic value chains for resilient industry

23 Sep 2021

30 Mar 2022

World leading data and computing technologies

Digital and emerging technologies for competitiveness and fit for the green deal

A human-centred and ethical development of industrial technologies

8 Sep 2021

5 Apr 2022

Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data

7 Sep 2021

6 Sep 2022

Cluster 4 – Partnerships

High Performance Computing
Key Digital Technologies
European Metrology
Smart Networks and Services

- Institutionalised, euroHPC
- Institutionalised, derived from ECSEL
- Institutionalised, derived from EMPIR
- Institutionalised, derived from 5G-PPP

AI, data and robotics
Photonics Europe
Clean Steel - Low Carbon Steelmaking
Made in Europe
Process4Planet
Global competitive space systems

- Co-programmed, derived from euRobotics & BDVA
- Co-programmed, derived from Photonics21
- Co-programmed, derived from ESTEP
- Co-programmed, derived from EFFRA
- Co-programmed, derived from Spire
- Co-programmed

https://ec.europa.eu/info/horizon-europe-next-research-and-innovation-framework-programme/european-partnerships-horizon-europe/candidates-digital-industry-and-space_en

Destination 1 – Climate neutral, circular and digitised production

1. Green, flexible and advanced manufacturing
2. Advanced digital technologies for manufacturing
3. A new way to build, accelerating disruptive change in construction
4. Hubs for circularity, a stepping stone towards climate neutrality and circularity in industry
5. Enabling circularity of resources in the process industries, including waste, water and CO₂/CO
6. Integration of Renewables and Electrification in process industry

Destination 2 – Increased autonomy in key strategic value chains for resilient industry

1. Novel paradigms to establish resilient and circular value chains
2. Raw materials for EU strategic autonomy and successful transition to a climate-neutral and circular economy
3. Green and Sustainable Materials
4. Materials for the benefit of society and the environment and materials for climate neutral Industry
5. Materials and data cross-cutting actions
6. Improving the resilience and preparedness of EU businesses, especially SMEs and Startups

Destinations 3 – World leading data and computing technologies

1. Data sharing in the common European data space
2. Strengthening Europe's data analytics capacity
3. From Cloud to Edge to IoT for European Data

Destinations 4 – Digital and emerging technologies for competitiveness and fit for the green deal

1. Ultra-low power processors
2. European Innovation Leadership in Electronics
3. European Innovation Leadership in Photonics
4. 6G and foundational connectivity technologies
5. Innovation in AI, data and robotics
6. Tomorrow's deployable Robots: efficient, robust, safe, adaptive and trusted
7. European leadership in Emerging Enabling Technologies
8. Flagship on Quantum Technologies: a Paradigm Shift
9. Graphene: Europe in the lead

Destinations 5 – Open Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data

1. Foster competitiveness of space systems
2. Reinforce EU capacity to access and use space
3. Development of applications from the EU space programme components
4. Evolution of space and ground infrastructure for Galileo/EGNOS
5. Evolution of Copernicus services
6. Evolution of services of the EU space programme components Galileo, EGNOS and Copernicus
7. Innovative space capabilities: SSA, GOVSATCOM, Quantum
8. Space entrepreneurship ecosystems (incl. “New Space” and start-ups) and skills
9. Targeted and strategic actions supporting the EU space sector

Destinations 6 – A human-centred and ethical development of digital and industrial technologies

1. Leadership in AI based on trust
2. An Internet of Trust
3. eXtended Reality (XR)
4. Systemic approaches to make the most of the technologies within society and industry

QUESTIONS?

