Horizon Europe First Strategic Plan 2021-2024

Fields marked with * are mandatory.

INTRODUCTION

Horizon Europe, the ninth European Research and Innovation Framework programme (2021-2027), is the key instrument of the Union for supporting research and innovation. It also plays an important role in steering and accelerating Europe's recovery, preparedness and resilience along the twin digital and green transitions. It will strengthen our knowledge base through frontier research, spur breakthrough innovation and support the development and demonstration of innovative solutions, and it will help restore our industrial leadership and strategic autonomy, while helping tackle the coronavirus pandemic and the climate challenges.

The first Horizon Europe Strategic Plan will define the strategic orientations for our research and innovation investments over the period 2021-2024 and will act as a compass to stay on course with the political priorities of the Commission: a climate-neutral and green Europe, fit for the digital age, where the economy works for the people.

This **survey is part of the strategic planning process**, to which the European Parliament, EU Member States, Countries of the European Economic Area (EEA Countries), as well as stakeholders and interested citizens, contribute collectively.

The **objective of this survey** is to receive feedback on the expected impacts to be targeted by research and innovation within Horizon Europe and the contribution of Research and Innovation (R&I) investments to the EU's political priorities. The results of the survey will be used to finalise the Strategic Plan and to precise the impact logic, which will set the direction for to the future Horizon Europe work programmes.

The survey is structured around **six Horizon Europe clusters and their expected impacts**: 1. Health; 2. Culture, Creativity and Inclusive Society; 3. Civil Security for Society; 4. Digital, Industry and Space; 5. Climate, Energy and Mobility; 6. Food, Bioeconomy, Natural Resources, Agriculture and Environment.

You do not have to respond to all six clusters. It should take **about 20 minutes to reply to the questions for each cluster**. The **deadline is Friday, 18 September 2020, 18.00 Brussels time**.

ABOUT YOU

*Have you or your organisation participated in the web-survey "Horizon Europe Co-design 2021-2024" in July 2019?

○ Yes
◉ No

* You or your organisation are mainly active/interested in the following areas of Horizon Europe (please select all that apply):
- ☑ Health (cluster 1)
- ☐ Culture, creativity and inclusive society (cluster 2)
- ☐ Civil security for society (cluster 3)
- ☑ Digital, industry and space (cluster 4)
- ☑ Climate, energy and mobility (cluster 5)
- ☐ Food, bioeconomy, natural resources, agriculture and environment (cluster 6)
- ☐ Widening Participation and Strengthening the European Research Area
- ☐ Pillar I - Excellent Science
- ☐ Pillar III - Innovative Europe
- ☐ Other

* You are responding:
- ○ As an individual
- ○ As a representative of a single organisation
- ◉ As a representative of an 'umbrella' organisation (a group of organisations)

* You are responding:
- ○ As a researcher
- ○ As an entrepreneur
- ○ As an expert in research and innovation
- ○ A citizen
- ◉ Other

* You are representing:
- ○ Yourself
- ○ A university or similar institution
- ○ A research organisation
- ○ A business or an industry
- ◉ An international organisation
- ○ A national public authority
- ○ A regional or local public authority
- ○ A civil society organisation (including non-governmental organisations, community associations, etc.)
- ○ Other

Name of the organisation:
150 character(s) maximum

Alliance for Internet of Things Innovation AISBL (AIOTI)

Your name and last name:
150 character(s) maximum

> Secretary General

* What is your country of residence or establishment?

> BE - Belgium

* Please select the option that best describes your interest in European research and innovation programmes:

○ I/my organisation is currently participating in at least one project funded by a European Union research and innovation framework programme

○ I/my organisation has proposed and/or participated in project(s) funded by a European Union research and innovation framework programme in the past, but I am/it is not participating in a running projects at this moment

○ I/my organisation has not yet proposed or participated in projects funded by European Union research and innovation framework programmes, but would be interested to do so

◉ I/my organisation currently does not intend to propose and/or participate in projects funded by European Union research and innovation framework programmes, but I may be interested in the results of the projects/programme

* P u b l i c a t i o n   p r i v a c y   s e t t i n g s

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous:

○ **Anonymous**: Only your type of respondent, country of origin and contribution will be published. All other personal details (name, organisation name and size, transparency register number) will not be published

◉ **Public**: Your personal details (name, organisation name and size, transparency register number, country of origin) will be published with your contribution

Please have a look at our Privacy Statement.

Privacy_statement_RTD_consultations.pdf

EXPECTED IMPACTS AND R&I CONTRIBUTION

This section aims at validating the targeted impacts and the role of R&I to reach the impact for the four years covered by the Strategic Plan, as developed with stakeholders during the Strategic Planning Process. This survey builds upon last year's survey and aims at making final revisions.

* You would like to provide your views on the following Horizon Europe clusters:

at least 1 choice(s)

☐ Cluster 1 : Health

☐ Cluster 2 : Culture, Creativity and Inclusive Society

☐ Cluster 3 : Civil Security for Society

☑ Cluster 4. Digital, Industry and Space

☐ Cluster 5. Climate, Energy and Mobility

☐ Cluster 6. Food, Bioeconomy, Natural Resources, Agriculture and Environment

CLUSTER 4: Digital, Industry and Space

Impact 1: Global leadership in clean and climate-neutral industrial value chains, circular economy and climate-neutral digital systems and infrastructures

Short description of the impact: Global leadership in clean and climate-neutral industrial value chains, circular economy and climate-neutral digital systems and infrastructures (networks, data centres), through innovative production and manufacturing processes and their digitisation, new business models, sustainable-by-design advanced materials and technologies enabling the switch to decarbonisation in all major emitting industrial sectors, including green digital technologies

R&I contribution: The pressing need to tackle a number of sustainability challenges, notably climate change, creates opportunities supporting economies, industries and the environment while also reducing dependencies by shortening and diversifying supply chains. New technologies, including digital technologies will enable industry to reduce energy consumption, decarbonise production processes, and protect the environment. A more agile and more circular economy will make Europe less dependent on external imports, boosting its resilience.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	○	●	○	○	○
R&I will play an important role to reach this impact	●	○	○	○	○
The text describes well the role of R&I and the ambition of the impact	○	●	○	○	○

2. Would you like to share an original idea or wording suggestion on this impact?
500 character(s) maximum

> To meet ambitious goals of the European strategies, the EU need to deploy enabling technologies like ICT (including 5G and beyond), edge & cloud computing, HPC, AI, IoT, DLT. More diversified edge computing solutions are urgently needed in the European market to ensure resilience in the post Covid-19 period. This include development of digital skills of the European work force as one of the crucial elements.

Impact 2: Globally attractive, secure and dynamic data-agile economy

Short description of the impact: Globally attractive, secure and dynamic data-agile economy by developing and enabling the uptake of the next-generation computing and data technologies and infrastructures (including space infrastructure and data), enabling the European single market for data with

the corresponding data spaces and a trustworthy artificial intelligence ecosystem.

R&I contribution: Data becomes the new fuel of the economy and a key asset to address Europe's societal challenges. It will reshape the way we produce, consume and live. It is the basis for many new products and services, driving productivity and resource efficiency gains across all sectors of the economy. Currently, a small number of Big Tech firms hold a large part of the world's data. But as the volume of data produced in the world is growing rapidly, enormous opportunities lie ahead. In order to release its potential, Europe has to find its way and develop the data technologies for sharing, re-using processing, combining, modelling and analysing large amounts of data, while preserving high privacy, security, safety and ethical standards.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	○	●	○	○	○
R&I will play an important role to reach this impact	●	○	○	○	○
The text describes well the role of R&I and the ambition of the impact	○	●	○	○	○

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

Impact 3: Industrial leadership and increased autonomy in key strategic value chains with security of supply in raw materials

Short description of the impact: Industrial leadership and increased autonomy in key strategic value chains with security of supply in raw materials, achieved through breakthrough technologies in areas of industrial alliances, dynamic industrial innovation ecosystems and advanced solutions for substitution, resource and energy efficiency, effective reuse and recycling and clean primary production of raw materials, including critical raw materials.

R&I contribution: Access to primary and secondary raw materials, in particular critical raw materials, will remain a vital prerequisite for both Europe's strategic security and a successful transition to a climate-neutral and circular economy. Europe must accelerate the maturity level of key digital and enabling technologies and support their adoption in industrial value-chains and strategic sectors such as automotive, industrial manufacturing, energy intensive industries, energy sectors, aerospace, defence and security, and healthcare.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	○	●	○	○	○
R&I will play an important role to reach this impact	●	○	○	○	○
The text describes well the role of R&I and the ambition of the impact	○	●	○	○	○

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

Impact 4: Sovereignty in digital technologies and in future emerging enabling technologies

Short description of the impact: Sovereignty in digital technologies and in future emerging enabling technologies by strengthening European capacities in key parts of digital and future supply chains, allowing agile responses to urgent needs, and by investing in early discovery and industrial uptake of new technologies.

R&I contribution: Despite a still strong presence in digital vertical markets (such as business software) and industrial applications (like sensor and control, car electronics, manufacturing and telecom equipment), Europe increasingly depends on other regions for its key digital capacities such as digital components, computing systems, data infrastructure and web platforms. At the same time, progress in data analytics and Artificial Intelligence, the deployment of faster networks (5G and beyond), new computing and data processing paradigms such as edge computing and quantum computing, as well as the increased demand for security and trust as fundamental prerequisites for digital solutions, present enormous opportunities for European industry to reinforce and regain leadership across the digital supply chain. Where relevant, security and trust will be fostered through open source solution, for both software and hardware. It is also indispensable to be first-movers in strategic areas such as quantum computing and graphene, and to establish early European leadership in emerging enabling technologies.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	○	●	○	○	○
R&I will play an important role to reach this impact	●	○	○	○	○

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The text describes well the role of R&I and the ambition of the impact	○	●	○	○	○

2. Would you like to share an original idea or wording suggestion on this impact?

500 character(s) maximum

Impact 5: Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data

Short description of the impact:
Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data, by reinforcing the EU's independent capacity to access space, and securing the autonomy of supply for critical technologies and equipment.

R&I contribution: Europe enjoys access to its own world-leading space and ground infrastructure, services and applications for navigation and Earth observation, supporting a range of EU and global policies and enabled by a competitive industrial sector active in development of new satellites and launch systems as well as in space science and exploration. However, technological development and markets move rapidly while important export destinations remain, to a large extent, captive markets supported by civil and military institutional demand. Europe must thus mobilise to remain competitive, to secure its future independent access to space and ability to operate securely in space, and to reduce its dependence on non-EU suppliers of technologies and services while at the same time prepare for a future space ecosystem of increasingly autonomous AI-enabled and flexible spacecraft and an increasingly congested space environment. In addition, it should foster EU competitiveness, respond to user needs for Earth environment monitoring, global Positioning Navigation and Timing (PNT), communication and security. Europe shall make the most of the synergies of its Space and Digital programmes, for example to increase the exploitation of the vast quantities of data collected by Copernicus, through HPC and AI enabled infrastructures.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	○	○	○	●	○
R&I will play an important role to reach this impact	○	○	○	●	○
The text describes well the role of R&I and the ambition of the impact	○	○	○	●	○

2. Would you like to share an original idea or wording suggestion on this impact?

> The Galileo Global Navigation Satellite System demonstrates the strong sovereign capabilities of Europe to achieve technological independence. Europe should embrace an opportunity to strengthen its technological capabilities and create a competitive market with appropriate regulatory measures that support long-term innovation.

Impact 6: A human-centred and ethical development of digital and industrial technologies

Short description of the impact: A human-centred and ethical development of digital and industrial technologies, through a two-way engagement in the development of technologies, empowering end-users and workers, and supporting social innovation.

R&I contribution: As Europe takes the lead in the green and digital transition, workers, regions, and societies are faced with extremely fast transformations, and will be differently affected by these changes. The COVID-19 crisis illustrated to strengthen resilience which entails a human-centred and ethical dimension. The rapid adoption of new technologies offers an immense potential for improved standards of living, safer mobility, better healthcare, new jobs, or the personalisation of public services. At the same time, it presents risks such as skills mismatches, digital divides, user lock-in, or serious breaches of security or privacy. Developments in industry, in digital and enabling technologies should enhance trust and reflect values such as the rule of law, cooperation, inclusiveness and respect for the environment. They have the potential to enhance social inclusion, can inform up-skilling training programmes and ensure a two-way engagement with society with regard to developing technologies.

1. Based on the description above, to what extent do you agree with the following statements:

	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree
The expected impact is clear	○	●	○	○	○
R&I will play an important role to reach this impact	●	○	○	○	○
The text describes well the role of R&I and the ambition of the impact	○	●	○	○	○

2. Would you like to share an original idea or wording suggestion on this impact?

Do you have any other comments regarding the expected impacts of this Cluster?

Development of digital and industrial technologies in Europe can be achieved in cooperation of the EU and the international partners who are active and investing in Europe, in particular in the research and innovation infrastructure. All organisations that fulfills such criteria and rules of the EU research programmes should be considered as potential partner and has the same obligations and rights of participating in EU funded research and innovation activities and projects. Europe should strengthen its technological capabilities and create a competitive business environment with proportionate, light-touch regulatory measures that drive long-term, global competitiveness.
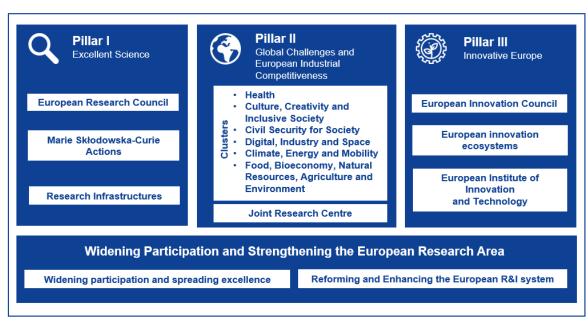
CLUSTER 4 - COHERENCE AND SYNERGIES

Coherence and synergies with other parts of the Framework Programme or with other EU p r o g r a m m e s

In order to maximise the impact of research and innovation on society, environment and economy at large and to contribute to the achievement of the Union's objectives, Union funding programmes must be coherent and work in synergy. Synergies and coherence are based on complementarity between programme design and objectives, as well as financing rules and processes at implementation level.

The Strategic Planning process, and the ensuing implementation process, must ensure the alignment of priorities of the different parts of Horizon Europe and between Horizon Europe and other EU funding programmes, ensuring coherent funding options at different stages of the research and innovation cycle. This includes facilitating the deployment of research results and innovative solutions developed in Horizon Europe (or previous Framework Programmes) with the support of other Union funding programmes.

The following questions seek your views on the priorities for coherence and synergies between this cluster of Horizon Europe and other parts of the Horizon Europe, and other EU funding programmes.

Horizon Europe Structure

Pillar I
Excellent Science

- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

Pillar II
Global Challenges and European Industrial Competitiveness

Clusters
- 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 III
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

Missions shall be programmed within the **Pillar II**, 'Global Challenges and European Industrial Competitiveness ', but may also benefit from actions carried out within other parts of the Programme as well as complementary actions carried out under other Union funding programmes.

Horizon Europe Missions are an integral part of the Horizon Europe framework programme. Missions are programmed under Horizon Europe Pillar II. Missions implementation will go beyond research and innovation. Missions will benefit from actions carried out within other parts of the Programme as well as complementary actions carried out at national level and under other Union funding programmes. Each selected mission will be a mandate to solve a pressing challenge in society within a certain timeframe and budget. More information on Missions is available on the Missions website.

1. In your view, how important is coherence between this cluster and other clusters or elements of Horizon Europe Pillar II?

	Very important	Important	Neutral	Not important	Not important at all
Pillar II – Cluster 1 'Health'	◉	○	○	○	○
Pillar II – Cluster 2 'Culture, Creativity and Inclusive Society'	○	○	○	○	○
Pillar II – Cluster 3 'Civil Security for Society'	○	○	○	○	○
Pillar II – Cluster 5 'Climate, Energy and Mobility'	◉	○	○	○	○
Pillar II – Cluster 6 'Food, Bioeconomy, Natural Resources, Agriculture and Environment'	○	○	○	○	○
Mission Area 'Cancer'	○	○	○	○	○
Mission Area 'Adaptation to climate change including societal transformation'	◉	○	○	○	○
Mission Area 'Healthy oceans, seas coastal and inland waters'	○	○	○	○	○
Mission Area 'Climate-neutral and smart cities'	◉	○	○	○	○
Mission Area 'Soil health and food'	○	○	○	○	○

2. In your view, how important is coherence between this cluster and the other parts of Horizon Europe?

	Very important	Important	Neutral	Not important	Not important at all
Pillar I – Excellent Science: European Research Council	○	○	○	○	○
Pillar I - Excellent Science: Marie-Skłodowska Curie Actions	○	○	○	○	○

Pillar I – Research Infrastructures	●	○	○	○	○
Pillar III - Innovative Europe: European Innovation Council	○	○	○	○	○
Pillar III - Innovative Europe: European Innovation Ecosystems	●	○	○	○	○
Pillar III - Innovative Europe: European Institute of Innovation and Technology	●	○	○	○	○
Widening participation and spreading excellence	●	○	○	○	○
Reforming and enhancing the European R&I system	●	○	○	○	○

3. In your view, how important are synergies between this cluster and the following other EU funding programmes?

	Very important	Important	Neutral	Not important	Not important at all
Connecting Europe Facility (CEF)	●	○	○	○	○
InvestEU	●	○	○	○	○
European Social Fund Plus (ESF+)	○	○	○	○	○
European Regional Development Fund (ERDF)	●	○	○	○	○
Neighbourhood, Development and International Cooperation	○	○	○	○	○
Internal Security Fund (ISF)	○	○	○	○	○
Creative Europe	○	○	○	○	○
European Space Programme	○	○	○	○	○
Digital Europe Programme (DEP)	○	○	○	○	○
Single Market Programme	●	○	○	○	○
European Maritime and Fisheries Fund (EMFF)	○	○	○	○	○
Innovation Fund under the Emission Trading Scheme (the 'Innovation Fund')	○	○	○	○	○
Euratom Research and Training Programme	○	○	○	○	○
Programme for Environment and Climate Action (LIFE)	○	○	○	○	○

Other [Note: A field for comments opens at the end of the list, when you select the level of importance]	○	○	○	○	○
European Agricultural Fund for Rural Development (EAFRD)	◉	○	○	○	○
European Agricultural Guarantee Fund (EAGF)	○	○	○	○	○
European Defence Fund	○	○	○	○	○
Erasmus Programme	○	○	○	○	○
Border Management and Visa Instrument (BMVI) as part of the Integrated Border Management Fund	○	○	○	○	○

4. Do you have any other comments or suggestions regarding the expected potential of coherence or synergies with Horizon Europe?

1500 character(s) maximum

Contact

[Contact Form](#)