

EN

Annex VII

Horizon Europe

Work Programme 2026-2027

7. Digital, Industry and Space

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Introduction

The Work Programme 2026-27 will support digital, industrial and space technologies to address the three core areas of the **Competitiveness Compass** adopted by the European Commission on 29 January 2025: (i) closing the innovation gap through innovative technologies geared towards deployment; (ii) supporting decarbonisation and competitiveness through focused industrial technologies; and (iii) reducing excessive dependencies and increasing security.

Cluster 'Digital, Industry and Space' will serve these goals through substantial R&I investments, often complemented by private investments through partnerships, across different technology readiness levels; and by integrating technological, environmental and social objectives into innovation.

Progress in digital and industrial technologies, including in space, shapes all sectors of the economy and society. These technologies transform the way industry develops, create new products and services, and are central to any sustainable future. Research and innovation to support the green and digital transition, and attain and maintain strategic capacities such Access to Space or Act in Space, are a key to Europe's competitiveness and open strategic autonomy, to industrial sustainability and to setting human-centred standards.

Resilience and technological sovereignty have become renewed priorities for the EU due to the current geopolitical and economic context that exposed vulnerabilities in critical value chains. In this context it is imperative to contribute to the implementation of the **Net-Zero Industry Act** (NZIA) and the **Critical Raw Materials Act** (CRMA); and to reinforce Europe's position in digital technologies, high-performance computing, Artificial Intelligence, robotics, secure communication, virtual worlds, critical Space technologies, advanced and sustainable manufacturing technologies, advanced materials , sustainable raw and the circular economy as applied to industries.

Cluster 4, 'Digital, Industry and Space' aims to shape competitive and trusted technologies for EU leadership in these technologies; to enable production and consumption respecting the boundaries of our planet; and to maximise the benefits for all parts of society in the variety of social, economic and territorial contexts in Europe. It will for example boost Europe leadership and competitiveness on Artificial Intelligence innovation (AI), in line with the Apply AI Strategy, and leading the way on making AI safer and more trustworthy, and on tackling the risks stemming from its misuse. Similarly, it will ease the exploitation of untapped data potential while promoting high standards of data protection.

This cluster will also support the **Clean Industrial Deal**, by driving decarbonisation and circularity in the manufacturing, energy-intensive and construction industries; and by providing the innovative advanced materials and advanced manufacturing technologies that are needed for a net-zero economy. It aims to position the European Union as a technology and industrial leader in clean technologies.

In this Work Programme, a new Destination brings together the research and innovation for a globally competitive European industry through the **twin green and digital transition**, and the availability, development, use and disposal of **chemicals, advanced materials** and **critical raw materials**. Synergies between partnerships towards these closely intertwined goals of the green and digital transitions and resilience are strongly encouraged.

Actions under this cluster will support key enabling technologies that are strategically important for Europe's future, and will deliver on the following six expected impacts in the Strategic Plan, through matching Destinations in this Work Programme (the first two impacts are served by a single Destination):

15. Achieving global leadership in climate-neutral, circular and digitised industrial and digital value chains

16. Achieving technological leadership for Europe's open strategic autonomy in raw materials, chemicals and innovative materials

17. Developing an agile and secure single market and infrastructure for data-services and trustworthy artificial intelligence services

18. Achieving open strategic autonomy in digital and emerging enabling technologies

19. Achieving open strategic autonomy in global space-based infrastructures, services, applications and data

20. Digital and industrial technologies driving human-centric innovation

In addition, several actions are crucial to support our European Economic Security Strategy, notably its 'promote' pillar that focuses on enhancing the Union's competitiveness and industrial base, as well as investing in research and innovation for strategic and dual-use technologies, as permitted by the Horizon Europe regulation.

Where data and their exchange are relevant, proposals should adhere to the FAIR data principles and adopt as appropriate data standards and good practices on data sharing and access.

Eligibility to participate is also subject to the 'Participation of Chinese universities linked to the Ministry of Industry and Information Technology (MIIT)' eligibility condition (see General Annex B of the General Annexes).

Partial randomisation pilot: for two topics in this work programme part, the evaluation process will include a random ranking for a sub-set of proposals, complementing the evaluation by experts. The aim of this pilot is to test the methodology and to assess its potential to address the challenges of rising proposal numbers and the difficulty of distinguishing between proposals of very similar quality.

Please note that the 'Horizontal Activities' work programme part also includes topics relevant to the areas covered in this work programme part

Calls

Call - INDUSTRY

HORIZON-CL4-2026-01

Overview of this call[1]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[2]	Indicative number of projects expected to be funded
		2026		
Opening: 06 Jan 2026 Deadline(s): 21 Apr 2026				
Destination: Leadership in materials and production for Europe				
HORIZON-CL4-2026-01-MAT-PROD-23: Accelerating the discovery and development of chemicals and innovative advanced materials through digitalisation and artificial intelligence (IA) (Innovative Advanced Materials for the EU partnership)	IA	50.00	Around 13.00	4
HORIZON-CL4-2026-01-MAT-PROD-24: Cooperation on innovative advanced materials with Japan (CSA)	CSA	0.80	Around 0.80	1
HORIZON-CL4-2026-01-MAT-PROD-01: Advanced manufacturing for key products (IA) (Made in Europe partnership)	IA	38.00	6.00 to 8.00	6
HORIZON-CL4-2026-01-MAT-PROD-04:	RIA	64.00	5.00 to 8.00	9

[1] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

[2] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Optimise the usage of resources in a circular economy (RIA) (Processes4Planet and Clean Steel partnerships)				
HORIZON-CL4-2026-01-MAT-PROD-05: Circular innovative advanced materials: facilitating the transition from design to markets (RIA) (Innovative Advanced Materials for the EU and Made in Europe partnerships)	RIA	37.00	5.00 to 6.50	7
HORIZON-CL4-2026-01-MAT-PROD-31: Efficient capture / purification / utilisation of CO2 for the production of competitive products (RIA) (Processes4Planet partnership)	RIA	43.80	5.00 to 7.00	7
HORIZON-CL4-2026-01-MAT-PROD-41: Enhancing industry-academia knowledge exchange in Social Sciences and Humanities (SSH) (CSA)	CSA	2.00	Around 1.00	2
HORIZON-CL4-2026-01-MAT-PROD-44: Attracting management talent for capacity building for Technology Infrastructures staff members (CSA)	CSA	2.50	Around 2.50	1
HORIZON-CL4-2026-01-MAT-PROD-45: Pilot access schemes to Technology Infrastructures for European startups, scaleups and innovative SMEs (CSA)	CSA	5.00	1.50 to 2.50	2
HORIZON-CL4-2026-01-MAT-PROD-46: Mapping and service finder for Technology Infrastructures (CSA)	CSA	2.00	Around 2.00	1
HORIZON-CL4-2026-01-MAT-PROD-48: ‘Proof of market’ to improve valorisation and commercialisation of Horizon generated R&I results (IA)	IA	4.00	Around 0.20	20
Raw Materials				
HORIZON-CL4-2026-01-MAT-PROD-11: Innovative technologies and tools for exploration and data modelling of raw materials (RIA)	RIA	18.50	5.00 to 7.00	3
HORIZON-CL4-2026-01-MAT-PROD-12:	RIA	19.00	5.00 to 7.00	3

Technologies for innovative extraction of critical raw materials (RIA)				
HORIZON-CL4-2026-01-MAT-PROD-13: Monitoring of secondary raw materials (CSA)	CSA	4.00	Around 4.00	1
HORIZON-CL4-2026-01-MAT-PROD-14: Improving availability of secondary raw materials through recycling (IA)	IA	28.00	Around 7.50	4
Overall indicative budget		318.60		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - INDUSTRY-two-stage

HORIZON-CL4-2026-02-two-stage

Overview of this call[3]

Proposals are invited against the following Destinations and topic(s):

[3] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

Topics	Type of Action	Budgets (EUR million) 2027	Expected EU contribution per project (EUR million)[4]	Indicative number of projects expected to be funded
Opening: 16 Dec 2025 Deadline(s): 17 Mar 2026 (First Stage), 13 Oct 2026 (Second Stage)				
Destination: Leadership in materials and production for Europe				
HORIZON-CL4-2026-02-MAT-PROD-21-two-stage: Development of safe and sustainable alternatives to substances of concern (IA)	IA	38.00	6.00 to 7.50	6
Destination: Achieving open strategic autonomy in digital and emerging enabling technologies				
HORIZON-CL4-2026-02-DIGITAL-EMERGING-51-two-stage: AI improved advanced manufacturing and production processes in factories (RIA) (Made in Europe and AI, Data and Robotics partnerships)	RIA	30.00	4.00 to 6.00	5
HORIZON-CL4-2026-02-DIGITAL-EMERGING-53-two-stage: Innovative AI methods and technologies for the process industries (RIA) (Processes4Planet and AI, Data and Robotics partnerships)	RIA	30.00	4.00 to 6.00	6
Overall indicative budget		98.00		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and	The criteria are described in General Annex

[4] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

exclusion	C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - INDUSTRY

HORIZON-CL4-2027-01

Overview of this call[5]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[6]	Indicative number of projects expected to be funded
		2027		
Opening: 13 Oct 2026 Deadline(s): 02 Feb 2027				
Destination: Leadership in materials and production for Europe				
HORIZON-CL4-2027-01-MAT-PROD-22: Innovative advanced materials and new production processes – reducing dependencies on Critical and Strategic Raw Materials (IA)	IA	36.00	6.00 to 7.50	6

[5] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

[6] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

(Innovative Advanced Materials for the EU and Processes4Planet partnerships)				
HORIZON-CL4-2027-01-MAT-PROD-02: Advanced manufacturing for key products (IA) (Made in Europe partnership)	IA	36.00	6.00 to 8.00	6
HORIZON-CL4-2027-01-MAT-PROD-03: Factory processes and automation for de- and re-manufacturing (RIA) (Made in Europe partnership)	RIA	36.00	5.00 to 6.50	6
HORIZON-CL4-2027-01-MAT-PROD-06: Circular innovative advanced materials: facilitating the transition from design to markets (RIA) (Innovative Advanced Materials for the EU and Made in Europe partnerships)	RIA	36.00	5.00 to 6.50	7
HORIZON-CL4-2027-01-MAT-PROD-08: Textile circularity through advanced processing and manufacturing technologies and system approaches (IA) (Textiles for the Future partnership)	IA	16.00	4.00 to 6.00	3
HORIZON-CL4-2027-01-MAT-PROD-42: Unlocking the potential of academic intellectual assets for industry, SMEs and startups (CSA)	CSA	2.00	Around 1.00	2
HORIZON-CL4-2027-01-MAT-PROD-47: Pilot access schemes to Technology Infrastructures for European startups, scaleups and innovative SMEs (CSA)	CSA	5.00	1.50 to 2.50	2
HORIZON-CL4-2027-01-MAT-PROD-49: 'Proof of market' to improve valorisation and commercialisation of Horizon generated R&I results (IA)	IA	4.70	Around 0.20	24
HORIZON-CL4-2027-01-MAT-PROD-50: European network for upscaling venture builders' roles in research performing organisations (CSA)	CSA	1.00	Around 1.00	1
Raw Materials				
HORIZON-CL4-2027-01-MAT-PROD-16:	IA	49.00	10.00 to	4

Technologies for innovative processing of raw materials (IA)			12.50	
HORIZON-CL4-2027-01-MAT-PROD-17: Expert network on Critical raw materials (CSA)	CSA	3.00	Around 3.00	1
Overall indicative budget		224.70		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - INDUSTRY-two-stage

HORIZON-CL4-2027-02-two-stage

Overview of this call[7]

Proposals are invited against the following Destinations and topic(s):

Topics	Type	Budgets	Expected	Indicative

[7] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

	of Action	(EUR million) 2027	EU contribution per project (EUR million)[8]	number of projects expected to be funded
Opening: 13 Oct 2026 Deadline(s): 02 Feb 2027 (First Stage), 02 Sep 2027 (Second Stage)				
Destination: Leadership in materials and production for Europe				
HORIZON-CL4-2027-02-MAT-PROD-32-two-stage: Efficient energy input from renewable sources and energy management in the process industries (IA) (Processes4Planet and Innovative Advanced Materials for the EU partnerships)	IA	52.50	7.00 to 9.00	6
Destination: Achieving open strategic autonomy in digital and emerging enabling technologies				
HORIZON-CL4-2027-02-DIGITAL-EMERGING-52-two-stage: New approaches for Human/AI collaboration for the workforce of the future (RIA) (Made in Europe and AI, Data and Robotics partnerships)	RIA	30.00	4.00 to 6.00	5
Overall indicative budget		82.50		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.

[8] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - INDUSTRY-FTRI

HORIZON-CL4-2027-06

Overview of this call[9]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[10]	Indicative number of projects expected to be funded
		2027		
Opening: 13 Oct 2026 Deadline(s): 02 Feb 2027				
Destination: Leadership in materials and production for Europe				
HORIZON-CL4-2027-01-MAT-PROD-61: Fast Track to Research and Innovation for breakthroughs in industrial technologies (Research and Innovation Action)	RIA	20.00	0.00 to 2.50	8
HORIZON-CL4-2027-01-MAT-PROD-62: Fast Track to Innovation for breakthroughs in the Chemical Industry Action Plan (Research and Innovation Action)	RIA	13.60	0.00 to 2.50	6

[9] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

[10] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Overall indicative budget		33.60		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - SPACE

HORIZON-CL4-2026-03

Overview of this call[11]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[12]	Indicative number of projects expected to be
		2026		

[11] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

[12] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

				funded
Opening: 10 Mar 2026 Deadline(s): 16 Sep 2026				
Destination: Open Strategic Autonomy in Developing, Deploying and Using Global Space-Based Infrastructure, Services, Applications and Data				
HORIZON-CL4-2026-SPACE-03-11: Reinforcing EU autonomous access to space through EU-based spaceports	IA	22.59	10.00 to 15.00	2
HORIZON-CL4-2026-SPACE-03-31: Digital enablers and building-blocks for Earth Observation and Satellite telecommunication for Space solutions (Space Partnership)	RIA	12.00	3.00 to 6.00	3
HORIZON-CL4-2026-SPACE-03-32: Preparing demonstration missions for Earth Observation and Satellite telecommunication for Space solutions (Space Partnership)	IA	26.00	5.00 to 10.00	4
HORIZON-CL4-2026-SPACE-03-61: Scientific analysis and exploitation of space data	RIA	3.92	1.50 to 2.50	2
HORIZON-CL4-2026-SPACE-03-81: Space critical EEE components for EU non-dependence – Radiation Hard FPGA on 7nm	RIA	12.74	12.00 to 13.00	1
HORIZON-CL4-2026-SPACE-03-82: Space critical EEE components for EU non-dependence – GaN MMICs mm-Wave Foundations (Phase A): Development and Industrialization of Semi-insulating SiC Substrate Capabilities	RIA	6.86	6.00 to 7.00	1
HORIZON-CL4-2026-SPACE-03-85: Critical Facilities Serving Space EEE components for EU non-dependence – High and Very High Energy Irradiation Test Facility Market Deployment	IA	3.92	3.00 to 4.00	1
HORIZON-CL4-2026-SPACE-03-86: Space critical Equipment for EU non-dependence – Space Refuelling Interface	RIA	2.94	2.00 to 3.00	1

Overall indicative budget		90.97		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - SPACE

HORIZON-CL4-2027-03

Overview of this call[13]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[14]	Indicative number of projects expected to be
		2027		

[13] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

[14] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

				funded
Opening: 09 Mar 2027 Deadline(s): 02 Sep 2027				
Destination: Open Strategic Autonomy in Developing, Deploying and Using Global Space-Based Infrastructure, Services, Applications and Data				
HORIZON-CL4-2027-SPACE-03-12: Digital solutions for autonomy for space transportation systems, design and simulation tools - Digital enablers and building blocks (Space Partnership)	IA	5.00	2.00 to 3.00	2
HORIZON-CL4-2027-SPACE-03-21: ISOS4I Pilot Mission Integrated Ground Test and consolidation of space-compatible USI solutions	RIA	3.92	3.50 to 3.92	1
HORIZON-CL4-2027-SPACE-03-33: Digital enablers and building blocks for collaborative Earth Observation and Satellite telecommunications for Space solutions (Space Partnership)	RIA	4.00	1.50 to 3.00	2
HORIZON-CL4-2027-SPACE-03-34: Preparing demonstration missions for collaborative Earth Observation and Satellite telecommunication for Space solutions (Space Partnership)	IA	26.00	5.00 to 10.00	4
HORIZON-CL4-2027-SPACE-03-71: Quantum Space Gravimetry topic	RIA	29.20	14.00 to 15.00	2
Overall indicative budget		68.12		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.

Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - SPACE

HORIZON-CL4-2027-07

Overview of this call[15]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[16]	Indicative number of projects expected to be funded
		2027		
Opening: 07 Oct 2027 Deadline(s): 20 Jan 2028				
Destination: Open Strategic Autonomy in Developing, Deploying and Using Global Space-Based Infrastructure, Services, Applications and Data				
HORIZON-CL4-2027-SPACE-07-83: Space critical EEE components for EU non-dependence	RIA		3.00 to 4.00	2
HORIZON-CL4-2027-SPACE-07-84: Space	RIA		3.00 to 4.00	2

15 The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

16 Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

critical equipment for EU non-dependence				
Overall indicative budget				

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - DIGITAL

HORIZON-CL4-2026-04

Overview of this call[17]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project	Indicative number of projects
		2026		

[17] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

			(EUR million)[18]	expected to be funded
Opening: 15 Jan 2026 Deadline(s): 15 Apr 2026				
Destination: Developing an agile and secure single market and infrastructure for data-services and trustworthy artificial intelligence services				
HORIZON-CL4-2026-04-DATA-02: Open Internet Stack Sovereign Solutions (RIA)	RIA	20.50	7.00 to 10.25	2
HORIZON-CL4-2026-04-DATA-03: Open Internet Stack Support for Scale (CSA)	CSA	4.00	Around 4.00	1
HORIZON-CL4-2026-04-DATA-06: Efficient and compliant access to and use of data (IA) (AI, Data and Robotics partnership)	IA	46.50	11.50 to 23.50	3
Destination: Achieving open strategic autonomy in digital and emerging enabling technologies				
HORIZON-CL4-2026-04-DIGITAL-EMERGING-01: Apply AI: Pilot of the "Science for AI" Pillar of RAISE ("Resource for AI science in Europe") (RIA)	RIA	17.00	Around 17.00	1
HORIZON-CL4-2026-04-DIGITAL-EMERGING-19: Challenge-Driven GenAI4EU Booster in Apply AI prioritised sectors (RIA) (AI/Data/Robotics Partnership)	RIA	45.00	Around 15.00	3
HORIZON-CL4-2026-04-DIGITAL-EMERGING-08: Apply AI: Robotics for Manufacturing: Advancing Core Skills through Technical Challenges (RIA) (Partnership in AI, Data and Robotics)	RIA	18.00	Around 18.00	1
HORIZON-CL4-2026-04-DIGITAL-EMERGING-09: Advanced Local Digital Twins using AI for Early Warning and Preparedness (IA)	IA	6.00	Around 6.00	1
HORIZON-CL4-2026-04-DIGITAL-	CSA		Around	0

[18] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

EMERGING-11: Grand Challenge on Quantum Sensors for Inertial Navigation - CANCELLED			0.00	
HORIZON-CL4-2026-04-DIGITAL-EMERGING-12: Standards for Quantum Technologies – Coordination and Support Action (CSA) - CANCELLED	CSA		Around 0.00	0
HORIZON-CL4-2026-04-DIGITAL-EMERGING-18: Large-Scale Photonic Quantum Computing Platform Technologies (RIA) - CANCELLED	RIA		Around 0.00	0
HORIZON-CL4-2026-04-DIGITAL-EMERGING-14: Networking and Future Photonics Strategy (CSA) (Photonics Partnership)	CSA	3.00	Around 3.00	1
HORIZON-CL4-2026-04-DIGITAL-EMERGING-15: Strengthening the cooperation of semiconductor-intensive EU regions (CSA)	CSA	1.00	Around 1.00	1
HORIZON-CL4-2026-04-DIGITAL-EMERGING-17: Fostering 2-Dimensional Materials (2DM) based emerging and enabling technologies (CSA)	CSA	1.00	Around 1.00	1
Destination: Digital and industrial technologies driving human-centric innovation				
HORIZON-CL4-2026-04-HUMAN-01: Developing and demonstrating core technologies for Virtual Worlds and Web 4.0 (IA) (Virtual worlds Partnership)	IA	30.00	4.00 to 5.00	7
HORIZON-CL4-2026-04-HUMAN-02: Web 4.0 architectural framework and Open Internet Stack applications for virtual worlds (RIA)	RIA	16.80	2.80 to 8.40	3
Overall indicative budget		208.80		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.

Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - DIGITAL

HORIZON-CL4-2027-04

Overview of this call[19]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[20]	Indicative number of projects expected to be funded
		2027		
Opening: 17 Nov 2026 Deadline(s): 18 Mar 2027				
Destination: Developing an agile and secure single market and infrastructure for data-services and trustworthy artificial intelligence services				

19 The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

20 Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

HORIZON-CL4-2027-04-DATA-08: Demand-side 3C pilot demonstrators on converged Telco Edge Cloud Infrastructure (IA)	IA	38.00	Around 19.00	2
HORIZON-CL4-2027-04-DATA-03: New approaches for decentralized, federated and sustainable AI data processing (RIA)	RIA	35.00	Around 17.50	2
HORIZON-CL4-2027-04-DATA-09: Energy efficiency and sustainability of AI data processing in Data Centres (IA)	IA	39.00	9.00 to 10.00	4
Destination: Achieving open strategic autonomy in digital and emerging enabling technologies				
HORIZON-CL4-2027-04-DIGITAL-EMERGING-11: EU Frontier AI Initiative: Developing frontier AI solutions that are safe and computationally efficient within Apply AI (RIA)	RIA	44.00	Around 44.00	1
HORIZON-CL4-2027-04-DIGITAL-EMERGING-04: Apply AI: Challenge-Driven AI Innovation Booster in Apply AI prioritised sectors (RIA) (Partnership in AI, Data and Robotics)	RIA	42.00	Around 14.00	3
HORIZON-CL4-2027-04-DIGITAL-EMERGING-05: Apply AI: AI-Driven Robotics for Industry: Enabling System Integration and Adoption (IA) (Partnership in AI, Data and Robotics)	IA	18.00	Around 18.00	1
HORIZON-CL4-2027-04-DIGITAL-EMERGING-06: International cooperation in AI (IA)	IA	3.00	Around 1.50	2
HORIZON-CL4-2027-04-DIGITAL-EMERGING-10: Horizon scanning and foresight in future enabling digital technologies (CSA)	CSA	4.00	Around 4.00	1
Destination: Digital and industrial technologies driving human-centric innovation				
HORIZON-CL4-2027-04-HUMAN-01: Advanced and Innovative hardware components for Virtual Worlds (RIA) (Virtual	RIA	39.00	4.80 to 5.60	8

Worlds Partnership)				
HORIZON-CL4-2027-04-HUMAN-02: Create a thriving and competitive Virtual Worlds and Web 4.0 ecosystem (CSA) (Virtual Worlds Partnership)	CSA	3.00	Around 3.00	1
HORIZON-CL4-2027-04-HUMAN-07: Facilitate the engagement of European stakeholders in international digital standardisation (CSA)	CSA	7.00	Around 7.00	1
Overall indicative budget		272.00		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - DIGITAL

HORIZON-CL4-2026-05

Overview of this call[21]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[22]	Indicative number of projects expected to be funded
		2026		
Opening: 15 Jan 2026 Deadline(s): 15 Apr 2026				
Raw Materials				
HORIZON-CL4-2026-05-MAT-PROD-25: New or enhanced Innovative Advanced Materials (IAM) enabled sensing functionality (RIA)	RIA	22.50	Around 7.50	3
Destination: Achieving open strategic autonomy in digital and emerging enabling technologies				
HORIZON-CL4-2026-05-DIGITAL-EMERGING-02: Next-Generation AI Agents for Real-World Applications in the Apply AI sectors (RIA) (Partnership in AI, Data and Robotics)	RIA	38.00	Around 19.00	2
HORIZON-CL4-2026-05-DIGITAL-EMERGING-03: Apply AI: Next-Generation Agile and Intelligent Robotics Platforms for Industrial and Service Applications (Partnership in AI, Data and Robotics) (RIA)	RIA	25.00	12.00 to 13.00	2
Overall indicative budget		85.50		

21 The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

22 Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Call - DIGITAL

HORIZON-CL4-2027-05

Overview of this call[23]

Proposals are invited against the following Destinations and topic(s):

Topics	Type of Action	Budgets (EUR million)	Expected EU contribution per project (EUR million)[24]	Indicative number of projects expected to be funded
		2027		
Opening: 17 Nov 2026				

[23] The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.
The Director-General responsible may delay the deadline(s) by up to two months.
All deadlines are at 17.00.00 Brussels local time.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

[24] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Deadline(s): 18 Mar 2027				
Destination: Achieving open strategic autonomy in digital and emerging enabling technologies				
HORIZON-CL4-2027-05-DIGITAL-EMERGING-03: Advanced integrated photonic devices for extended features and ultra-low power consumption (RIA) (Photonics Partnership)	RIA	25.00	3.00 to 5.00	6
Overall indicative budget		25.00		

General conditions relating to this call	
Admissibility conditions	The conditions are described in General Annex A.
Eligibility conditions	The conditions are described in General Annex B.
Financial and operational capacity and exclusion	The criteria are described in General Annex C.
Award criteria	The criteria are described in General Annex D.
Documents	The documents are described in General Annex E.
Procedure	The procedure is described in General Annex F.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G.

Destinations

Destination: Leadership in materials and production for Europe

This Destination brings together the research and innovation for a globally competitive European industry through the **twin green and digital transition**, and the availability, development, use, reuse and disposal of **chemicals, advanced materials** and **critical raw materials**.

The Competitiveness Compass announces initiatives that should be served directly by industry-linked activities in Cluster 4, through new, focused R&I activities, but also through the activities supported up to now:

- Clean Industrial Deal adopted in February 2025;
- Critical Raw Materials Act;
- Advanced Materials Communication and future Advanced Materials Act planned for 2026;
- Future Circular Economy Act planned for 2026;
- Steel and Metals Action Plan adopted in March 2025;
- European Chemicals Industry Action Plan adopted in July 2025;
- Industrial action plan for the European automotive sector adopted in March 2025; and
- Strategy on research and technology infrastructures, with regard to technology infrastructures and the valorisation of knowledge.

In order to better translate these policy priorities into actions, to integrate the latest inputs from the partnerships, and to achieve synergies, this Work Programme part adopts a more integrated approach. The headings used under the two industry-focused destinations in previous work programmes, reflecting different partnerships and industrial sectors, are replaced by new headings making strongly interconnected contributions to the corresponding expected impacts in the Strategic Plan 2025-27, on green and digital transition and on autonomy in raw and advanced materials.

The new approach takes into account R&I investments under previous work programmes and intends to introduce more synergies with other pillars (notably the European Innovation Council under Pillar III) as well as with Cluster 5. Topics in this Work Programme increasingly combine the priorities of different partnerships to enable synergies, e.g. with the Investment fund, while continuing to address the particularities of each partnership. The development of new and cross-cutting technologies will help transform existing value chains and create new ones.

In addition to this Work Programme part, Cluster 4 participates in a horizontal **Clean Industrial Deal Call**, aiming to increase the competitiveness and decarbonisation of industry. The initiative will allow Horizon Europe beneficiaries to feed the EU deployment pipeline with R&I solutions close to market uptake and deployment, whilst also supporting the development by 2035 of a new batch of industry-led demonstrators designed for higher market readiness.

In addition to decarbonisation, manufacturing and energy-intensive industries need to embrace the **circular economy** as a key pillar in the design of their value chains. This will be fundamental to their resource efficiency (in terms of materials, energy and water). Particularly important in this context is the upcycling of secondary raw materials and waste; de- and re-manufacturing; and the development of sustainable and resource-efficient industrial processes

This Work Programme continues to promote across the calls the application of Safe and Sustainable by Design approach incorporating early and parallel considerations of innovation design choices on impacts on health, environment, climate and other sustainability parameters as a way of achieving stated policy objectives and fostering quick market uptake.

Where projects are asked to contribute to the development of safe and sustainable products, projects should take into account safety concerns for consumers as well as the organisational health and safety aspects for industrial workers.

Finally, to support **start-ups and scale-ups**, this Work Programme includes support for technology infrastructures and valorisation of knowledge.

Business cases and exploitation strategies for industrialisation:

This section applies only to those topics in this Destination, for which proposals should demonstrate the expected outcomes by including a *business case and exploitation strategy for industrialisation*.

A business case and a credible initial exploitation strategy are essential components in the ultimate success of an industry-based project, as well as its prospects to attract further investments for deployment. They will both be decisive factors under the impact criterion, and proposers are encouraged to use the extended page limit to present a carefully considered business case and exploitation strategy, backed by the management of the companies involved.

The *business case* should demonstrate the expected impact of the proposal in terms of enhanced market opportunities for the participants and deployment in the EU, in the short to medium term. It should describe the targeted market(s); estimated market size in the EU and globally; user and customer needs; and demonstrate that the solutions will match the market and user needs in a cost-effective manner; and describe the expected market position and competitive advantage.

The *exploitation strategy* should identify obstacles, requirements and necessary actions involved in reaching higher TRLs (Technology Readiness Levels), for example: securing the

required investments, including through possible synergies with other programmes; accessing the required skills; matching value chains; enhancing product robustness; securing industrial integrators; and user acceptance.

For TRLs 6 and 7, a credible strategy to achieve future full-scale deployment in the EU is expected, indicating the intentions of the industrial partners after the end of the project.

Where relevant, in the context of **skills**, it is recommended to develop training material to endow workers with the right skillset in order to support the uptake and deployment of new innovative products, services, and processes developed in the different projects. This material should be tested and be scalable, and can potentially be up-scaled through the European Social Fund Plus (ESF+). This will help the European labour force to close the skill gaps in the relevant sectors and occupational groups and improve employment and social levels across the EU and associated countries.

Where projects are asked to contribute to the development of safe and sustainable products, projects should take into account safety concerns for consumers and the organisational health and safety aspects for industrial workers.

For topics in this destination, consortia (if selected for funding) will be called upon to cooperate with the relevant parts of the **Joint Research Centre (JRC)**, in order to inform the next stages of EU technology and innovation policies.

- INnovation Centre for Industrial Transformation and Emissions (INCITE) (https://innovation-centre-for-industrial-transformation.ec.europa.eu/).
- The Energy and Industry Geography Lab: EIGL (https://energy-industry-geolab.jrc.ec.europa.eu/).

Legal entities established in China are not eligible to participate in both Research and Innovation Actions (RIAs) and Innovation Actions (IAs) falling under this destination. For additional information please see "Restrictions on the participation of legal entities established in China" found in General Annex B of the General Annexes.

Sustainable Advanced Materials, Raw Materials and Chemicals

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-02-MAT-PROD-21-two-stage: Development of safe and sustainable alternatives to substances of concern (IA)

Call: INDUSTRY-two-stage	
Specific conditions	
Expected EU contribution per	The Commission estimates that an EU contribution of between EUR 6.00 and 7.50 million would allow these outcomes to be addressed

project	appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 38.00 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: Applicants submitting a proposal for a blind evaluation (see General Annex F) must not disclose their organisation names, acronyms, logos nor names of personnel in the proposal abstract and Part B of their first-stage application (see General Annex E). In order to include a business case and exploitation strategy, as outlined in the introduction to Destination 'Leadership in materials and production for Europe', the page limit in part B of the General Annexes is exceptionally extended by 3 pages (for second-stage proposals).
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The Joint Research Centre (JRC) may participate as member of the consortium selected for funding as a beneficiary with zero funding, or as an associated partner. The JRC will not participate in the preparation and submission of the proposal - see General Annex B.
Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 7 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The first-stage proposals of this topic will be evaluated blindly.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- Make safer and more sustainable alternatives to substances of concern available to the industries offering products with targeted performances and supporting their competitiveness,
- Speeding up the innovation cycle within a value chain important for European industry;

- Enhancing competitiveness of the industries by reducing regulatory and operational costs, while making supply chains more secure;
- Production processes, chemicals, materials and products that are inherently safer and more sustainable for a clean and autonomous economy; and
- Demonstrating how the safe and sustainable by design (SSbD) chemicals and materials framework can guide innovation and encourage innovators to minimise the use of substances of concern, reducing negative impacts on human health, climate and ecosystems.

Scope: The focus of this topic is on alternatives for the substitution of substances of concern (SoCs) as defined in the Ecodesign for Sustainable Product regulation[25]. The design and development of these alternatives should lead to an innovation cycle covering their (re)design, development, production processes, and integration into products in manufacturing.

The scope includes necessary developments of related processes and technologies to ensure alignment with and integration in industrial manufacturing facilitating uptake of the develop alternatives. If relevant, challenges for the adaption of existing production lines should be identified and solutions proposed.

Proposals should develop new chemical substances, innovative advanced materials or technologies to replace existing SoCs in one of the following areas: energy, mobility, construction, electronics, technical textiles as well as medical devices.

Proposals should demonstrate that the proposed alternative has a clear use case, market and potential to grow. The substitution barriers for the selected applications should be identified and effective mechanisms to maximise substitution within the targeted value chains proposed.

Proposals should demonstrate that SSbD framework[26] will be applied throughout the innovation process, showing that safety and sustainability principles are actively integrated and influence decision-making in a transparent and traceable way, and ensure that the data generated within the proposal may be shared with the Common Data Platform for Chemicals. The new alternatives to be developed should meet the technical functions required in the specific applications while aligning their innovation process decision making with such framework.

Proposals are encouraged to cooperate with relevant projects and should contribute to and cooperate with the EU Innovation and Substitution Hub(s). Proposals should allocate the necessary resources to the proposed activities.

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25 REGULATION (EU) 2024/1781 establishing a framework for the setting of ecodesign requirements for sustainable products, Article 2: definitions, recital 27

26 See documents defining the SSbD framework and criteria on: https://ec.europa.eu/info/research-and-innovation/research-area/industrial-research-and-innovation/key-enabling-technologies/advanced-materials-and-chemicals_en

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

Proposals could consider involving the European Commission's Joint Research Centre (JRC), whose contribution could add value to the operationalisation of the SSbD framework.

HORIZON-CL4-2027-01-MAT-PROD-22: Innovative advanced materials and new production processes – reducing dependencies on Critical and Strategic Raw Materials (IA) (Innovative Advanced Materials for the EU and Processes4Planet partnerships)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 6.00 and 7.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 36.00 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit is exceptionally extended by 3 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: To increase EU resilience in raw materials supply chains and thus reduce the serious risk to the Union's strategic assets, economic and societal interests, autonomy and security associated with the current EU reliance on a few third countries for critical raw materials, by increasing sustainable and responsible sourcing of primary and secondary raw materials necessary to enable the green and digital transition and in alignment with the objectives of the Critical Raw Materials Act[27], participation in this topic is limited to legal entities established in Member States, associated countries, OECD countries, African Union Member States, MERCOSUR, CARIFORUM, Andean Community and

[27] Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

	countries with which the EU has concluded strategic partnerships on raw materials[28] as well as trade agreements (or association/economic partnership or equivalent agreements, including the new Clean Trade and Investment Partnerships) containing raw materials cooperation provisions (i.e. Energy and Raw materials chapters)[29]. The choice of these countries was made taking into consideration the development of strategic international partnerships on raw materials and avoidance of reinforcing existing over-dependencies, as well as the importance of involving partners committed to pursuing open trade in such materials. Proposals including legal entities which are not established in the countries that fall under the criteria above will be ineligible. For the duly justified and exceptional reasons listed above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or a non-eligible country entity, shall not participate in the action.
Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 7 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- Reducing dependencies of critical and strategic raw materials through partial or total substitution by safe and sustainable innovative advanced materials and/or via more efficient use of critical and strategic raw materials in production processes;
- Speeding up the innovation cycle within value chain(s) important for European industry;
- Enhancing competitiveness of the industries and operational costs, while making supply chains more secure;
- New or improved production processes, innovative advanced materials and products that are safer and more sustainable, supporting a clean and autonomous economy; and

[28] https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

[29] https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/negotiations-and-agreements_en

- Demonstrating how the safe and sustainable by design (SSbD) chemicals and materials framework can guide innovation.

Scope: The focus of this topic is on alternatives for the substitution or more efficient use of critical and strategic raw materials[30]. The design and development of innovative advanced materials (IAMs) and processes should lead to an innovation cycle covering the (re)design of materials and production processes, and the integration of IAMs into products.

Proposals should develop IAMs or process technologies to replace or reduce the use of critical and strategic raw materials in strategic areas and sectors such as energy, mobility, construction, electronics, medical devices or chemical industries.

Proposals should address one or several of the following approaches:

- Design, development and production with targets on performance, safety and sustainability of IAMs substituting or making a more efficient use of critical and strategic raw materials.

- Innovative industrial processes for the reduction of the use of critical and strategic raw materials focussed on optimizing process safety, sustainability, flexibility, scalability, cost-efficiency.

- Co-development strategies for IAMs and industrial processes. These strategies should demonstrate the value of co-development through specific use cases while maintaining broad relevance across various materials and process types.

Proposals should demonstrate clear use case(s), market and potential to grow. The substitution barriers for the selected applications should be identified and a driving mechanism for a maximal substitution in the targeted value chains proposed.

The scope includes necessary adaptations of related processes and technologies to ensure alignment with and integration in industrial manufacturing in order to facilitate the uptake of the developed solutions. If relevant, challenges for the adaption of existing production lines should be identified and solutions proposed.

Proposals should demonstrate that SSbD framework [31] will be applied throughout the innovation process, showing that safety and sustainability principles are actively integrated and influence decision-making in a transparent and traceable way, and ensure that the data generated within the proposal may be shared with the Common Data Platform for Chemicals. The new alternatives to be developed should meet the technical functions required in the specific applications while aligning their innovation process decision making with such framework.

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30 https://rmis.jrc.ec.europa.eu/eu-critical-raw-materials; as well as Annex I and II of the

31 See documents defining the SSbD framework on: https://ec.europa.eu/info/research-and-innovation/research-area/industrial-research-and-innovation/key-enabling-technologies/advanced-materials-and-chemicals_en

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

Proposals are encouraged to cooperate with relevant projects. Where relevant, proposals should actively contribute to and cooperate with the EU Innovation and Substitution Hub(s)[32]. Proposals should allocate the necessary resources to the proposed activities

This topic implements the co-programmed European partnerships Innovative Advanced Materials for the EU (IAM4EU) and Processes4Planet.

HORIZON-CL4-2026-01-MAT-PROD-23: Accelerating the discovery and development of chemicals and innovative advanced materials through digitalisation and artificial intelligence (IA) (Innovative Advanced Materials for the EU partnership)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 13.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 50.00 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit in part B of the General Annexes is exceptionally extended by 3 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In line with the "*restriction on control in innovation actions in critical technology areas*" delineated in General Annex B of the General Annexes, entities established in an eligible country but which are directly or indirectly controlled by China or by a legal entity established in China are not eligible to participate in the action. The Joint Research Centre (JRC) may participate as member of the consortium selected for funding as a beneficiary with zero funding, or as an associated partner. The JRC will not participate in the preparation and submission of the proposal - see General Annex B.

[32] European Chemicals Industry Action Plan - European Commission

Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 7 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- Accelerating the discovery and development process for innovative advanced materials and chemicals through digital tools developed in Europe;
- Innovation workflows which include design of experiment and/or design of simulation
- Supporting the operationalisation of the SSbD framework;
- Making a step change in the risk assessment of chemicals and advanced materials in Europe.

Scope: Proposals should accelerate the pathway to market of new substances (chemicals or advanced materials) with superior or novel functionalities. This can be achieved with novel tools or proofs of concept using digital methods to accelerate development of new materials and demonstration of their properties. Where possible this should explore collaboration with other initiatives such as the Materials Commons for Europe or DIGIPASS, contributing data, modelling, digital tools applicable to the design, development, production, manufacturing, use and end of life phases, which connect to repeatable workflows. These workflows and tools may include the use of artificial intelligence as well as self-driving labs and their interconnection and design of experiment/design of simulation methods. They should also drive innovation in risk assessment, new test methods and support and facilitate the operationalisation and use of the SSbD framework[33]. Projects should include demonstrators which help to validate the materials development in realistic conditions.

By doing so, new innovative advanced materials (IAMs) with superior or novel functionalities and alternatives to substances of concern should be developed more rapidly in Europe. In addition, digital feedback loops ranging from requirements and information from production processes and scale-up, to manufacturing and integration into products, should be developed to accelerate market uptake. Innovative digital tools to speed up risk assessment and thereby market access of chemicals and advanced materials may also be addressed.

Interoperable workflows based on shared standards and dedicated ontologies, in particular through collaboration with the Materials Commons for Europe, should help to reduce the cost

[33] See documents defining the SSbD framework on: https://ec.europa.eu/info/research-and-innovation/research-area/industrial-research-and-innovation/key-enabling-technologies/advanced-materials-and-chemicals_en

of the digital transition for industry with respect to circularity and safe and sustainable by design, e.g. by reducing the risk for adopters and vendors, and through modular tools that can be extended to new application domains without a major redesign. Tools should foster workflows in that ensure high-quality, well-structured and documented primary FAIR data and FAIR digital tools and workflows, enabling the re-use and/or streamlining of large data sets, facilitating academic and industrial collaborations and integrating AI and other digital technologies. Synergies with the SSbD toolboxes can also be foreseen including the adaptation and validation[34] of the test methods for advanced materials. Proposals could also facilitate the generation of relevant data and where relevant sharing of data with the Common Data Platform for Chemicals. Where relevant, proposals should actively contribute to and cooperate with the EU Innovation and Substitution Hub(s). Proposals should allocate the necessary resources to the proposed activities.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

Proposals could consider the involvement of the European Commission's Joint Research Centre (JRC), whose contribution could consist of added value to the operationalisation of the SSbD framework.

This topic implements the co-programmed European Partnership Innovative Advanced Materials for the EU (IAM4EU).

HORIZON-CL4-2026-01-MAT-PROD-24: Cooperation on innovative advanced materials with Japan (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 0.80 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 0.80 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

[34] In this context, validation refers to the requirement that test methods included in any SSbD toolbox must be sufficiently reliable and robust for innovators to use them.

	Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [35].

Expected Outcome:

- Cooperation with Japan in the field of innovative advanced materials is strengthened.

Scope: Advanced materials are an important factor for the competitiveness of Japanese and European industries and are a crucial building block for strengthening resilience and open strategic autonomy, including through international collaboration. Against this background, the European Commission and the Japanese Ministry of Science, Technology and Innovation Policy, have in April 2024 announced the launch of the EU-Japan Enhanced Dialogue[36] on Advanced Materials. This builds on the success of EU-Japan collaboration in R&I in material sciences. It aims to create a platform for sharing information on policy developments and exploring the opportunities to pursue collaborative research in the areas of mutual interest.

As part of the EU-Japan Enhanced Dialogue on Advanced Materials and taking into account the Communication on Advanced Materials for Industrial Leadership[37], the purpose of this action is to enable European researchers in innovative advanced materials from Member States and Associated Countries to make research visits to related Japanese institutions. Proposals should aim to provide travel grants strengthening collaboration in relevant ongoing research activities in Europe on the topic of advanced materials with applications to either mobility, energy, construction, electronics or medical devices. Proposals should ensure a wide geographical coverage of the grants in Member States and Associated Countries. They should aim at visits to research groups at Japanese organisations with complementary activities for up to one month duration. Such travel grants should build on collaborations with Japanese organisations that are willing to receive such a visits. Proposals can either support the initiation of new collaborations, or existing collaborations.

Fast-tracking Circularity

Proposals are invited against the following topic(s):

35 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

36 https://www.eeas.europa.eu/delegations/japan/eu-and-japan-launch-enhanced-dialogue-advanced-materials_en?s=169

37 https://ec.europa.eu/commission/presscorner/detail/en/ip_24_1121

HORIZON-CL4-2026-01-MAT-PROD-01: Advanced manufacturing for key products (IA) (Made in Europe partnership)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 6.00 and 8.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 38.00 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit in part B of the General Annexes is exceptionally extended by 3 pages.
Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 7 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering also the automotive industry, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked with focus on the automotive industry, provided that the applications attain all thresholds.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- Advanced manufacturing technology and machinery becomes available in Europe for the manufacturing of key and high-performance products;
- Where relevant, production becomes increasingly circular through the reuse of secondary raw materials; and/or innovative advanced materials are incorporated in manufactured products, leading to better performance and quality;

- Resource efficiency in terms of materials and energy is increased significantly; and
- Circularity, productivity and competitiveness are increased, and hence resilience of European industry is enhanced.

Scope: This topic addresses technologies and machinery for advanced manufacturing, focusing on manufacturing excellence and on increasing circularity, including through the better use of innovative advanced materials and secondary raw materials. The focus is on key manufactured components and products that are competitive and have enhanced performance, and contribute to Europe's technological leadership in manufacturing, but which are at risk of being lost to Europe or rely on raw materials or parts whose supply is mostly coming from outside Europe.

Proposals should develop technologies and machinery to enable the manufacturing of these components with a minimal use of critical raw materials [reference to overall targets] or imported materials. This includes an increased use of secondary raw materials or biobased materials or revalorised components.

Where appropriate to enhance performance and quality, proposals should target the use of innovative advanced materials (such as lightweight, functionalised or self-healing materials). In this case, the development of the advanced materials should not be the main focus of proposals, nevertheless the necessary steps to adapt such innovative advanced materials to the needs of the manufacturing application should be included. These can include digital twins for materials as well as SSbD-design steps.

Examples of advanced manufacturing technologies and machinery include, but are not restricted to:

- Innovative additive manufacturing;
- Hybrid manufacturing (additive, subtractive);
- Photonics;
- Advanced joining technologies;
- Polymer composite manufacturing;
- Advanced technologies for surface treatment and structuring, to tailor surface properties for specific applications;
- Manufacturing of components with lightweight materials; and
- In-line testing.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

The portfolio approach will be used, to ensure that at least one proposal focusing on the automotive industry is funded. However, *the production of batteries is not within the scope of this topic*.[38]

International cooperation is encouraged, especially with Japan or Taiwan.

This topic implements the co-programmed European Partnership Made in Europe.

HORIZON-CL4-2027-01-MAT-PROD-02: Advanced manufacturing for key products (IA) (Made in Europe partnership)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 6.00 and 8.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 36.00 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit is exceptionally extended by 3 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In line with the "*restriction on control in innovation actions in critical technology areas*" delineated in General Annex B of the General Annexes, entities established in an eligible country but which are directly or indirectly controlled by China or by a legal entity established in China are not eligible to participate in the action.
Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 7 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action,

[38] The production of batteries (including for automotive use) is addressed by topic HORIZON-CL5-2026-05-D2-03: Integrated Production and Product Development for Next-Generation Lithium-based Batteries for Mobility.

	object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- Advanced manufacturing technology and machinery becomes available in Europe for the manufacturing of key and high-performance products;
- Where relevant, production becomes increasingly circular through the reuse of secondary raw materials; and/or innovative advanced materials are incorporated in manufactured products, leading to better performance and quality;
- Resource efficiency in terms of materials and energy is increased significantly; and
- Circularity, productivity and competitiveness are increased, and hence resilience of European industry is enhanced.

Scope: This topic addresses technologies and machinery for advanced manufacturing, focusing on manufacturing excellence and on increasing circularity, including through the better use of innovative advanced materials and secondary raw materials. The focus is on key manufactured components and products that are competitive and have enhanced performance, and contribute to Europe's technological leadership in manufacturing, but which are at risk of being lost to Europe or rely on raw materials or parts whose supply is mostly coming from outside Europe.

Proposals should develop technologies and machinery to enable the manufacturing of these components with a minimal use of critical raw materials [reference to overall targets] or imported materials. This includes an increased use of secondary raw materials or biobased materials or revalorised components.

Where appropriate to enhance performance and quality, proposals should target the use of innovative advanced materials (such as lightweight, functionalised or self-healing materials). In this case, the development of the advanced materials should not be the main focus of proposals, nevertheless the necessary steps to adapt such innovative advanced materials to the needs of the manufacturing application should be included. These can include digital twins for materials as well as SSbD-design steps.

Examples of advanced manufacturing technologies and machinery include, but are not restricted to:

- Innovative additive manufacturing;
- Hybrid manufacturing (additive, subtractive);
- Photonics;
- Advanced joining technologies;

- Polymer composite manufacturing;
- Advanced technologies for surface treatment and structuring, to tailor surface properties for specific applications;
- Manufacturing of components with lightweight materials; and
- In-line testing.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

Applications in the automotive industry may be considered. However, *the production of batteries is not within the scope of this topic*.[39]

International cooperation is encouraged, especially with Japan or Taiwan.

This topic implements the co-programmed European Partnership Made in Europe.

HORIZON-CL4-2027-01-MAT-PROD-03: Factory processes and automation for de- and re-manufacturing (RIA) (Made in Europe partnership)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 6.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 36.00 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit is exceptionally extended by 3 pages.
Technology Readiness Level	Activities are expected to start at TRL 4-5 and achieve TRL 6 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant	The rules are described in General Annex G. The following exceptions

[39] The production of batteries (including for automotive use) is addressed by topic HORIZON-CL5-2026-05-D2-03: Integrated Production and Product Development for Next-Generation Lithium-based Batteries for Mobility.

Agreements	apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [40].

Expected Outcome:

- A viable industrial ecosystem for circularity in manufacturing industries emerges, enhancing both circularity and resilience;
- De-manufacturing technologies and practices become available, making decisive contributions to a European remanufacturing industry and market;
- Functions of products are retained, reused, upgraded or adapted through de-manufacturing and re-manufacturing; and
- Skills, standards and safety measures relevant to remanufacturing are developed.

Scope: Proposals should focus on developing de-manufacturing and re-manufacturing technologies at the factory level, addressing at least three of the following:

- Technologies to efficiently analyse part condition and support predictive maintenance, including for re-manufactured parts or components of lower value, e.g. by combining multimodal sensor data, AI and human inputs;
- AI and robotic-assisted technologies, e.g. innovative end-effectors, to de-manufacture products and components, including handling, sorting and extended logistics;
- Model-based systems, to allow de-manufacturing and re-manufacturing operators to use CAD data and digital twins related to the original parts (and contribute to the development of a digital ecosystem);
- Solutions allowing local (on-site) repair or re-manufacturing of high-added value components (applied to e.g. wind turbines, aircraft and vessels); and
- Solutions to plan the sequence of operations based on the characteristics of the incoming products to be re-manufactured.

[40] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination. Depending on the approaches to be pursued, these should consider the best solutions to enhance adoption, for example coupling manufacturing with de-/re- manufacturing plants, product and component value, risk mitigation for variable de-/re-manufacturing flows.

This topic implements the co-programmed European Partnership Made in Europe.

HORIZON-CL4-2026-01-MAT-PROD-04: Optimise the usage of resources in a circular economy (RIA) (Processes4Planet and Clean Steel partnerships)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 8.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 64.00 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit in part B of the General Annexes is exceptionally extended by 3 pages.
Technology Readiness Level	Activities are expected to start at TRL 4-5 and achieve TRL 6 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering also support for the steel sector, grants will be awarded to applications not only in order of ranking but at least also to two proposals that are the highest ranked that focus on the recovery of iron-containing residuals / waste / by-products using low-CO2 processes; provided that the applications attain all thresholds.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results,

	as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [41].

Expected Outcome: Projects are expected to contribute to one or more of the following outcomes:

- Material recycling and upcycling are significantly enhanced compared to the state of the art through technology development along the value chain and integrated value chain optimisation, leading to reduced GHG and air pollutant emissions;
- Through the recycling of (iron-containing or other) production waste / residuals / by-products or optimisation of the recovery of critical / strategic raw materials or ferroalloys, the EU's dependencies on imports from single or very limited numbers of country suppliers are reduced, and the yields of recycling of production-waste / by-products are increased;
- The usage of raw materials, fresh water and energy is minimised, and ecosystem and habitat degradation avoided;
- The impact of impurities in materials produced for special applications of strategic importance for European environmental, social and governance (ESG)[42] sustainability is reduced by either minimising their amount or by modification of impurity-material-structure, morphology, and properties;
- Cost efficient use of resources is reached with minimal energy usage and optimized use of labour.

Scope: The topic aims to optimise the efficiency of materials, water and energy use by recycling and upcycling of side streams from production and end-of-use waste, to become more competitive, safe and sustainable. Material production becomes less dependent on imports and / or use of non-renewable materials by improving recovery along the value chain, developing and upscaling low-CO2 processes to recover materials, including to replace current efficient but CO2-intensive recycling.

41 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

42 Environmental, social and governance (ESG) ratings: Council and Parliament reach agreement - Consilium

The continuity and high resource demand for materials and energy of industrial processes need dependable availability of resources. The attainment of this target requires moving away from primary, often expensive, and rare resources, by the re-integration and valorisation of secondary resources (end-of-use waste) and industrial side-streams into the process industries as feedstock. Priority should be given to streams that contain critical and insufficiently available raw materials, and to streams with a large carbon footprint or a large required energy input for their production.

The development of technologies should encompass the entire value chain from the collection, dismantling, sorting and separation of waste to the processing of the streams and the production of new high-quality materials. The demonstration of the innovative, efficient, and economically viable technologies is required, considering a scale and conditions that can give reliable indications on the real-world economic potential. Minimizing the intake of energy and water should be considered.

Proposals under this topic are expected to address at least 3 of the following points:

- Increase the share of sustainable feed streams of the process industries from end-of-use waste and/or foster circular material flows in house and/or across sites of iron-containing and other residuals / waste / by-products, avoiding incineration or disposal, including the development / upscaling of low CO2 processes with reduced negative impact on air quality;
- Improve product designs including by-products for easier re-cycling and upcycling;
- Enhance existing technologies for a more efficient residual / waste / by-products collection, sorting, classification, characterisation, treatment, processing and re-use. This can include development / improvement of end-of-life recycling processes targeting waste, scrap, dust and sludges for possible use for high-performance high-reliability products;
- Recover relevant secondary raw materials, including critical ones, and target maximum process efficiency;
- Reduce the usage of scarce and critical raw materials in the production processes, while at the same time preserving ecosystem and reducing pressures on biodiversity that would be caused by extraction;
- Reduce the number of manufacturing stages by shortening of production processes, leading to a reduction in the energy consumption; and/or consider approaches/technologies for optimising efficiency in terms of water use.
- Understand the effect of specific contaminants on the properties of materials produced from secondary feedstock and develop technologies for their removal if needed, also in view of the need for pre-treatment and secondary manufacturing steps.

- Where relevant, include analytical techniques for micro- and/or nano-characterisation of materials to gain the necessary knowledge to influence processes and allow dedicated modelling.

Showcase improved performance, scalability and cost efficiency of the proposed solution through at least one case at laboratory level pilot scale. Digitalisation should be included when effective, but it must not be targeted independently from the development and validation of the necessary process technologies.

The re-integration of side streams in the production cycle can take place within one sector or across sectors (industrial symbiosis). Impacts of regulations must be considered and proposals for their modification and/or enhancement should be suggested where required.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

This topic implements the co-programmed European Partnerships Processes4Planet and Clean Steel.

HORIZON-CL4-2026-01-MAT-PROD-05: Circular innovative advanced materials: facilitating the transition from design to markets (RIA) (Innovative Advanced Materials for the EU and Made in Europe partnerships)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 6.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 37.00 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit in part B of the General Annexes is exceptionally extended by 3 pages.
Technology Readiness Level	Activities are expected to start at TRL 4-5 and achieve TRL 6 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply:

	To ensure a balanced portfolio covering strategic value chains, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked from each of the following areas: (i) mobility and (ii) medical devices; provided that the applications attain all thresholds.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [43].

Expected Outcome:

- Innovative advanced materials designed for circularity are adopted in products faster, through accelerated production and technology uptake;
- Business models become available to enhance the use of circular innovative advanced materials in strategic value chains; and
- Resource efficiency (materials and energy) is increased significantly through a focus on circular advanced materials.
- Quality standards, harmonisation and regulatory requirements are addressed facilitating simplified market transition.

Scope: The focus of this topic is on enabling circularity and resilient supply networks through R&I in advanced materials, in particular recyclable polymers and composites, magnets and metal (alloys) for additive manufacturing, and on accelerating their pathway to market. Proposals should develop new innovative advanced materials (IAMs) with superior or novel functionalities designed for circularity. The scope includes necessary developments of related processes and technologies to ensure integration in industrial manufacturing facilitating uptake of the developed solutions. Proposals should also develop circular business models considering the cost of changes needed along the life cycle of these new materials to facilitate their uptake.

[43] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

The scope covers the full innovation cycle from the design for circularity and functional integration (new materials designs), development and scaleup (including scalable recovery, recycling and valorisation at end of life), to demonstration of industrial uptake and integration into products. The transformative potential of the developed solutions is to be showcased by demonstrators and industrial use cases. Projects should also explore possibilities to transfer developed solutions to other applications or sectors.

The SSbD framework [44] should guide the innovation process towards safer and more sustainable chemicals and advanced materials. Where relevant data generated within the proposal may be shared with the Common Data Platform for Chemicals. The new alternatives to be developed should meet the technical functions required in the specific applications while aligning their innovation process decision making with such framework.

Best use of digital tools and FAIR data, including AI and data-driven approaches throughout the innovation process should support the circular transition for industry and circular product design. This includes sharing FAIR and interoperable data and tools across supply networks and value chains, to foster circularity, including data needed for materials and component development, production and circular product design. Proposals should adhere to the FAIR data principles and adopt wherever relevant, data standards and data sharing/access good practices.

The approach should foster collaboration among stakeholders along the innovation chain and industrial value networks to accelerate the development and adoption of new circular solutions.

Projects should build on, or seek collaboration with, existing projects in EU Member States and Associated Countries and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms, in particular with the Materials Commons for Europe.

Proposals should support strategic value chains in the fields of mobility and medical devices. The portfolio approach will be used to fund at least one proposal from each of these two areas. Proposers should declare in their proposal the main application area of their proposal (i.e. mobility or medical devices).

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

This topic implements the co-programmed European Partnerships Innovative Advanced Materials for the EU (IAM4EU) and Made in Europe (MiE).

[44] See documents defining the SSbD framework and criteria on: https://ec.europa.eu/info/research-and-innovation/research-area/industrial-research-and-innovation/key-enabling-technologies/advanced-materials-and-chemicals_en

HORIZON-CL4-2027-01-MAT-PROD-06: Circular innovative advanced materials: facilitating the transition from design to markets (RIA) (Innovative Advanced Materials for the EU and Made in Europe partnerships)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 6.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 36.00 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit is exceptionally extended by 3 pages.
Technology Readiness Level	Activities are expected to start at TRL 4-5 and achieve TRL 6 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering strategic value chains, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked from each of the following areas: (i) energy and (ii) construction; provided that the applications attain all thresholds.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the

	Research and Training Programme of the European Atomic Energy Community (2021-2025) [45].

Expected Outcome:

- Innovative advanced materials designed for circularity are adopted in products faster, through accelerated production and technology uptake;
- Business models become available to enhance the use of circular advanced materials in strategic value chains; and
- Resource efficiency (materials and energy) is increased significantly through a focus on circular advanced materials.
- Quality standards, harmonisation and regulatory requirements are addressed facilitating simplified market transition.

Scope: The focus of this topic is on enabling circularity and resilient supply networks through R&I in advanced materials, in particular recyclable polymers and composites, magnets and metal (alloys) for additive manufacturing, and on accelerating their pathway to market. Proposals should develop new innovative advanced materials (IAMs) with superior or novel functionalities designed for circularity. The scope includes necessary developments of related processes and technologies to ensure integration in industrial manufacturing facilitating uptake of the developed solutions. Proposals should also develop circular business models considering the cost of changes needed along the life cycle of these new materials to facilitate their uptake.

The scope covers the full innovation cycle from the design for circularity and functional integration (new materials designs), development and scaleup (including scalable recovery, recycling and valorisation at end of life), to demonstration of industrial uptake and integration into products. The transformative potential of the developed solutions is to be showcased by demonstrators and industrial use cases. Projects should also explore possibilities to transfer developed solutions to other applications or sectors.

The SSbD framework [46] should guide the innovation process towards safer and more sustainable chemicals and advanced materials. Where relevant data generated within the proposal may be shared with the Common Data Platform for Chemicals. The new alternatives to be developed should meet the technical functions required in the specific applications while aligning their innovation process decision making with such framework.

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45 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

46 See documents defining the SSbD framework and criteria on: https://ec.europa.eu/info/research-and-innovation/research-area/industrial-research-and-innovation/key-enabling-technologies/advanced-materials-and-chemicals_en

Best use of digital tools and FAIR data, including AI and data-driven approaches throughout the innovation process should support the circular transition for industry and circular product design. This includes sharing FAIR and interoperable data and tools across supply networks and value chains, to foster circularity, including data needed for materials and component development, production and circular product design.

The approach should foster collaboration among stakeholders along the innovation chain and industrial value networks to accelerate the development and adoption of new circular solutions.

Projects should build on, or seek collaboration with, existing projects in EU Member States and Associated Countries and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms, in particular with the Materials Commons for Europe.

Proposals should support strategic value chains in the fields of energy and construction. The portfolio approach will be used to fund at least one proposal from each of these two. Proposers should declare in their proposal the main application area of their proposal (i.e., energy or construction).

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

This topic implements the co-programmed European Partnerships Innovative Advanced Materials for the EU (IAM4EU) and Made in Europe (MiE).

HORIZON-CL4-2027-01-MAT-PROD-08: Textile circularity through advanced processing and manufacturing technologies and system approaches (IA) (Textiles for the Future partnership)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 4.00 and 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 16.00 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit is exceptionally

	extended by 3 pages.
Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 6-7 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 150 000. This derogation is justified by the fact that the actions to be carried out by third parties (SMEs) towards the expected outcome of the uptake of business models and system approaches, will be incorporating cost-intensive technologies to process textile-to-textile recycled materials. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [47].

Expected Outcome:

- Increased economically viable and functionally equivalent renewable material and sustainable chemical solutions used in large scale textile applications, including apparel, home and technical textiles;
- A realistic pathway for an absolute reduction of the use of virgin fossil-based materials and chemicals used to produce textile products for the EU market by 2035, contributing to enhance the preservation of human health, biodiversity and ecosystems, whether aquatic or terrestrial ecosystem preservation and emission reduction;
- Uptake of business models and system approaches that allow for the scale up of sustainable textile material and chemical alternatives as competitive alternatives to conventional approaches.

Scope: Innovative renewable textile fibres and sustainable chemical solutions today face almost insurmountable cost disadvantages compared to extremely cost-competitive and

[47] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

industrially entrenched fibres and chemicals based on virgin fossil resources. To allow for the scale up of the use of innovative renewable materials and sustainable chemicals by the textile industry, improved processability of materials, suitable processing technology, deeper technical knowledge and smart phase-in approaches such as material blending or drop-in solutions are required. Specific emphasis must be placed on resulting final product quality, their durability and functionality to avoid negative user/consumer perception of products made with renewable materials and sustainable chemicals. As not all cost and quality challenges may be immediately overcome by technological innovation, accompanying business models and systems approaches are needed to enable equitable cost and risk sharing among all involved stakeholders in the textile value chain.

Attributes such as recyclability, recycled material content, and resource efficiency as well as reduced carbon and environmental footprint are expected to be part of the textile-specific requirements under the Ecodesign for Sustainable Products Regulation.

Proposals should specifically address:

- Innovative processing technologies to facilitate the efficient use of recycled, regenerated and bio-based fibres as well as sustainable processing and functionalising chemicals across all major stages of the textile manufacturing value chain, such as spinning, weaving, knitting, dyeing or finishing;

- Quantification of biodiversity outcomes associated to new processes by using existing Monitoring, Reporting and Validation (MRV) methodologies, adapting and testing them if needed;

- Characterisation, quality assurance and mitigation strategies for the most common processing and functionality challenges and limitations of the sustainable materials and chemicals targeted;

- Development of best practices and training materials targeted at designers, manufacturers, brands, end of life managers and end users, working with the targeted materials and chemicals;

- Strategies and tools to practically implement collective risk sharing and smart scaling approaches.

Proposals should actively involve suppliers of renewable materials and sustainable chemicals, brands, commercial end users and developers/manufacturers of relevant processing technology and industrial partners with the capacity to commercially scale up production with the targeted materials and chemicals. The involvement of partners beyond the manufacturing supply chain, such as product designers, brands, commercial end users and end of life managers including collectors, sorters, recyclers and remanufacturers is particularly encouraged. Proposals should carry out research and innovation to develop missing elements and achieve the necessary integration, including economic viability. Hence, synergies with, or

using results from, other projects may be appropriate. *The mere integration of existing technologies or processes is outside the scope of this topic*.

Proposals should provide between 10% and 25% of the EU contribution through financial support to third parties (FSTP), in order to maximise the number of SMEs involved in small-scale innovation projects. FSTP funding can be provided only to SME participants, while the active participation of larger companies in such innovation projects in encouraged. The involvement of start-ups is also specifically encouraged.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

This topic implements the co-programmed European Partnership Textiles for the Future.

Disruptive technologies for carbon capture and clean energy use

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-01-MAT-PROD-31: Efficient capture / purification / utilisation of CO2 for the production of competitive products (RIA) (Processes4Planet partnership)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 7.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 43.80 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit in part B of the General Annexes is exceptionally extended by 3 pages.
Technology Readiness Level	Activities are expected to start at TRL 4-5 and achieve TRL 6 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results,

	as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [48].

Expected Outcome: Projects are expected to contribute to the following outcomes:

- Achieve a significant reduction in the production costs of CO2-based products, making them competitive with conventionally produced alternatives. This involves optimising the integration of CO2 capture, purification, and conversion processes.
- Demonstrate processes that minimize energy consumption during the entire conversion process, leveraging advances in process integration that can shift equilibria and the use of renewable electricity and available heat sources.
- Contribute to the reduction of carbon emissions by enabling the sustainable use of CO2, supporting circular economy principles through the valorisation of CO2, possibly aligned with CCS.

Scope: There are only a few products that can be competitively produced from CO2. Increased opportunities for CCU from process industry emissions require the development of a larger portfolio of potential CO2-derived products. The higher cost of CO2-based products compared to conventional production routes is mostly driven by the high energy demand arising from the thermodynamic constraints of CO2. The smart integration of CO2 capture, purification and conversion can enable process optimisation with reduced energy consumption as well as reduced capital expenditure. Additionally, innovative processes can overcome the inherent equilibrium limitations of CCU production. The development of new integrated processes can be an opportunity to optimise the use of electricity, make use of available heat sources and relevant infrastructures and thus accelerate the development of CO2 valorisation.

Proposals under this topic are expected to address several of the following points:

- Develop new methodologies, processes and technologies for the smart integration of CO2 capture, purification, and conversion, focusing on reducing energy demand, capital expenditure and possible integration with CCS infrastructure requirements.

[48] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- Incorporate renewable energy sources (including the fluctuation of energy availability) and innovative energy management strategies to enhance the sustainability and cost-effectiveness of the CO2 valorisation processes.
- Identify and integrate available heat sources and existing infrastructures to enhance process efficiency and reduce operational costs.
- Address the constraints related to CO2 conversion processes, employing innovative approaches to maximize yield and process efficiency, for example by overcoming low equilibrium yields.
- Conduct comprehensive lifecycle and economic assessments to ensure that the proposed solutions are viable, sustainable, and economically attractive.

Conversion of CO2 to methanol and fuels is considered outside the scope of this topic.

Showcase improved performance, scalability and cost efficiency of the proposed solution through at least one case at laboratory level pilot scale.

The inclusion of a **GHG avoidance methodology**[49] **is recommended** and should provide detailed descriptions of baselines and projected emissions reduction.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination, underlining how the proposal will serve the purpose to boost industrial decarbonisation technologies supply chain in Europe. Proposals should consider representative real industrial sites demonstrating the solutions at least in open-loop computations. This should be done in parallel to the actual operation of the plants with validation of the benefits by simulations with accurate models. Experiments involving real industrial sites are encouraged. Societal- and environmental impact as well as implications for the workplace (including skills and organisational change) should be outlined.

This topic implements the co-programmed European partnership Processes4Planet.

HORIZON-CL4-2027-02-MAT-PROD-32-two-stage: Efficient energy input from renewable sources and energy management in the process industries (IA) (Processes4Planet and Innovative Advanced Materials for the EU partnerships)

Call: INDUSTRY-two-stage	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 7.00 and 9.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and

[49] That could follow Innovation Fund methodology: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2021/call-annex_c_innovfund-lsc-2021_en.pdf

	selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 52.50 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: Applicants submitting a proposal for a blind evaluation (see General Annex F) must not disclose their organisation names, acronyms, logos nor names of personnel in the proposal abstract and Part B of their first-stage application (see General Annex E). In order to include a business case and exploitation strategy, as outlined in the introduction to Destination 'Leadership in materials and production for Europe', the page limit is exceptionally extended by 3 pages (for second-stage proposals).
Technology Readiness Level	Activities are expected to start at TRL 4-5 and achieve TRL 6-7 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The first-stage proposals of this topic will be evaluated blindly.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [50].

Expected Outcome:

- A significant decarbonisation of processes (measured by the reduction of GHG emissions from the overall system) with broad applicability and economic viability.
- Facilitation of the transition from fossil-based energy inputs for:

[50] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

  - o low/medium thermal energy demands by introducing renewable-based alternatives and heat upgrading.

  - o High-temperature processes, by innovative technologies for electrified and hybrid high-temperature processes, high temperature energy storage.

- Clean energy usage is given a boost through innovative advanced materials, system concepts and technologies for energy integration and energy storage, supporting resilience against energy supply variations

- Combination of significant energy savings and integrated management of energy systems and production processes

Scope: Most processes in the process industries require significant energy inputs which currently lead to substantial GHG (greenhouse gas) emissions by the process industries. The reduction of the CO2 footprint can be achieved by several measures, e.g. electrification or use of other renewable sources of energy, lowering of the energy demand, increasing energy efficiency, and energy integration. This topic aims to lead to significant steps in reducing the CO2 footprint by technological innovations, at least by 20%.

A key problem in the use of renewable energy sources is their fluctuation over time. Projects should take this into account and develop solutions that aim for energy efficiency and include novel storage technologies of relevance to the process industries. Pure demand-side management by production schedules adapted to the supply of electricity from renewable sources is not within the scope of the call.

In situations where full electrification is not feasible or competitive in the foreseeable future, sustainable hybrid solutions play a crucial role. These solutions enhance flexibility, allowing industries to manage the variability in the availability of affordable renewable electricity, which is expected to fluctuate significantly in the medium term. E.g., preheating processes can utilize fossil-free energy sources such as solar heat, geothermal heat, heat pumps, resistive or induction heating, and electric boilers. This initial stage can be followed by further heating using fossil-based methods initially, and later transitioning to renewable-based combustion processes to achieve the required process temperatures.

To enhance resilience, the capture, storage, and management of energy flows should be tailored to the needs of the process industry. This may include research and innovation in safe and sustainable innovative advanced materials for (latent or sensible) energy storage, e.g. phase change materials and heat storage via chemical energy carriers beyond E-fuels.

Proposals under this topic should address several of the following:

- Advancements in the use of energy from renewable sources in production processes with improved energy efficiency.

- Integrated energy systems with novel storage elements to enable a smooth operation of the plants despite variations in the availability of energy from renewable sources.

- Solutions for low/medium temperature (100 - 500 °C) energy inputs in energy intensive industries including hybrid solutions and a progressive reduction of the use of fossil carriers of energy.

- Solutions for high temperature (> 500 °C) energy inputs in energy intensive industries, including high temperature electricity driven processes, and high temperature energy storage.

- Application of high-performance insulation materials and new innovative advanced materials that can improve heat capture, storage, and retrieval, particularly for scalable high-temperature applications. Such materials should minimize the use of critical raw material, enabling effective recycling.

Projects should include demonstrations at pilot scale, preferably in real industrial environments, to validate the proposed technologies and processes under real-world industrial conditions

Proposals related to innovative advanced materials development should address the most relevant gaps to focus on in the frame from materials design to technology deployment and ensure adequate feedback loops between different steps to drive forward innovative solutions which can be easily deployed. Scalability and requirements from application/industry need to be considered early on in the innovation process.

The inclusion of a **GHG avoidance methodology**[51] **is recommended** and should provide detailed descriptions of baselines and projected emissions reduction.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination, underlining how the proposal will serve the purpose to boost industrial decarbonisation technologies supply chain in Europe. As project output an elaborated exploitation plan should be developed, including preliminary plans for scalability, commercialisation and deployment (feasibility study, business plan and financial model) indicating possible private and public funding sources (e.g. Innovation Fund, InvestEU and cohesion policy funds). Societal- and environmental impact as well as implications for the workplace (including skills and organisational change) should be outlined.

This topic implements the co-programmed European partnerships Processes4Planet and Innovative Advanced Materials for the EU.

Technology infrastructure, knowledge valorisation and support for scaleups and startups

Proposals are invited against the following topic(s):

[51] That could follow Innovation Fund methodology: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/innovfund/wp-call/2021/call-annex_c_innovfund-lsc-2021_en.pdf

HORIZON-CL4-2026-01-MAT-PROD-41: Enhancing industry-academia knowledge exchange in Social Sciences and Humanities (SSH) (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 1.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 2.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [52].

Expected Outcome:

- Increased innovation capabilities for industry by harnessing the potential of Social Sciences and Humanities, including the Arts, to provide effective solutions to companies' research and innovation challenges and organisational development.
- Improved strategies to bring new products and technologies to the industry environment and ultimately to the market.
- By facilitating industry exposure, SSH researchers' better understanding of industry needs and opportunities for collaboration.

Scope: This action aims to leverage the strengths of social sciences, humanities and arts (SSH) to address companies' specific needs, fostering a dynamic and productive industry-academia co-creation for knowledge valorisation. This action will implement SSH–industry

[52] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

co-creation (for example hackathons, team-based approaches, targeted mentorship and exchange programmes etc) focussing on specific challenges from industry and SMEs including, but not limited to understanding the socio-technical implications of new technologies and innovations, broadening the perspectives of companies' strategic actions, creating a deeper understanding of customer needs, legal requirements and pathways to the market, strengthening the integration of social, economic and cultural inequality considerations into industry practices and innovation processes, developing new ideas and innovations and contributing to organisational development, sustainability and long-term profitability.

The action will cover the following activities:

- Developing a methodology for understanding how various needs from industry, SMEs and customers can be addressed by knowledge exchanges with SSH researchers and students.
- Service to industry and SMEs including spinoffs and startups to support solving company challenges with international teams of SSH researchers and students.
- A study to tackle the key questions concerning the technical and conceptual feasibility of Industry-Academia knowledge exchange with SSH to improve innovation management and organisational development.

HORIZON-CL4-2027-01-MAT-PROD-42: Unlocking the potential of academic intellectual assets for industry, SMEs and startups (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 1.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 2.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions

	under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [53].

Expected Outcome:

- Enhanced valorisation of intellectual assets, including dormant patents, from universities and public research organisations to support the adoption of green and digital technologies by industry, SMEs and start-ups/spinoffs.
- Development of entrepreneurial skills and increased involvement of students, researchers, and innovators in the valorisation of research results.
- Uptake of effective models and tools to facilitate valorisation of unused IP and intellectual assets and access by startups, SMEs, and innovative companies to this untapped knowledge in public research organisations.

Scope: Aligned with the European Union's policy priorities, this action will contribute to overcoming the innovation paradox by maximising the impact of public spending in R&I through improved knowledge valorisation practices, and facilitating the uptake of green and digital technologies by start-ups, spinoffs, and innovative SMEs. By unlocking the untapped potential of intellectual assets within universities and public research organisations, and leveraging the creativity of students, researchers, and innovators, the action seeks to improve value creation opportunities deriving from these assets and bolster the competitiveness of European industry.

The action should explore strategies and implement pilots for actively involving students and researchers (including those in social sciences and humanities) in valorising academic IP and intellectual assets. These should include hackathons, workshops and larger-scale “summer camp” programmes, and foresee the involvement of interested industry partners than can be potential adopters.

The action should also identify and test models and tools for easier IP access and utilisation by startups and SMEs. These should cover innovative licensing and other valorisation approaches, especially tackling the issue of unused academic patents, as well as the use of AI to manage and valorise research results and IP.

Proposals submitted under this topic should consider how to exploit synergies with other EU-funded projects covering intellectual assets management, entrepreneurship, and AI for knowledge valorisation. They should also pay particular attention to reducing the gender gap

[53] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under ‘Simplified costs decisions’ or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

and promoting diversity in knowledge valorisation, and include dedicated measures to foster gender balance and inclusiveness in this field.

HORIZON-CL4-2027-01-MAT-PROD-61: Fast Track to Research and Innovation for breakthroughs in industrial technologies (Research and Innovation Action)

Call: INDUSTRY-FTRI	
Specific conditions	
Expected EU contribution per project	Up to EUR 2.50 million.
Indicative budget	The total indicative budget for the topic is EUR 20.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: consortia may include a maximum of 6 independent eligible entities as participants.
Procedure	The procedure is described in General Annex F. The following exceptions apply: Indicative timetable for evaluation and grant agreement signature will be: • Information on the outcome of the evaluation: Maximum 4 months from the final date for submission; and • Indicative date for the signing of grant agreements: Maximum 6 months from the final date for submission. To allow a faster access to funds for small collaborative consortia, grants under this topic will be funded under a Fast Track to Research and Innovation Procedure (FTRI).
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- Proposals should describe a credible pathway from their project results and outcomes towards the expected impact of this Destination;
- Proposals should enable open-ended breakthrough innovations in industrial technologies, feeding the pipeline of knowledge.

Scope: This is an open topic, intended to cover breakthrough innovations, up to TRL 4, within the scope of the Strategic Research and Innovation Agendas (SRIAs) of the partnerships Made in Europe, Process4Planet, Clean Steel, Innovative Advanced Materials for the EU (IAM4EU) and Textiles for the Future.[54] Proposals should carefully describe their expected contribution to one or more of the R&I objectives of the respective SRIA.

HORIZON-CL4-2027-01-MAT-PROD-62: Fast Track to Innovation for breakthroughs in the Chemical Industry Action Plan (Research and Innovation Action)

Call: INDUSTRY-FTRI	
Specific conditions	
Expected EU contribution per project	Up to EUR 2.50 million.
Indicative budget	The total indicative budget for the topic is EUR 13.60 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The following additional eligibility criteria apply: consortia may include a maximum of 6 independent eligible entities as participants.
Procedure	The procedure is described in General Annex F. The following exceptions apply: Indicative timetable for evaluation and grant agreement signature will be: • Information on the outcome of the evaluation: Maximum 4 months from the final date for submission; and • Indicative date for the signing of grant agreements: Maximum 6 months from the final date for submission. To allow a faster access to funds for small collaborative consortia, grants under this topic will be funded under a Fast Track to

[54] https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe/digital-industry-and-space_en

	Research and Innovation Procedure (FTRI).
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- Proposals should describe a credible pathway from their project results and outcomes towards the expected impact of this Destination;
- Enable the acceleration of the market uptake of groundbreaking innovations in the decarbonisation of the chemical industries as well as alternatives to substances of concern.

Scope: This open topic aims to speed up the adoption of new, groundbreaking innovations (starting TRL 4) as part of the Chemical Industry Action Plan, in the areas of decarbonisation of energy intensive industries, circular economy or breakthrough production technologies; as well as development of alternatives (new chemical substances, advanced materials or technologies) to substances of concern. Application of the SSbD Framework should be considered as appropriate.

HORIZON-CL4-2026-01-MAT-PROD-44: Attracting management talent for capacity building for Technology Infrastructures staff members (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 2.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 2.50 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the

	Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [55].

Expected Outcome: Proposals should demonstrate the following expected outcomes:

- Sound understanding of the competences and skills needs of Technology Infrastructures related to effective management and providing services to industry in all member states;
- Improved and structure the training of Technology Infrastructures staff members with improved sector-agnostic competencies;
- Increased and improved collaboration between Research and Technology Infrastructures, leading to exchange of best practices in management and capacity building in Technology Infrastructures, and peer learning;
- Better uptake of technology infrastructure services by industry, including startups and scaleups, innovators and researchers;
- Improved coherence, visibility and accessibility of technology infrastructures facilities and services;
- Improved business and governance models of Technology Infrastructures.

Scope: A combination of factors including rapid technological advancements, inefficient strategic planning, skills gaps, and budget limitations can create sub-optimal technology infrastructure management. Proposals are expected to develop and provide schemes to attract management talent (including but not limited to organisational sciences) to technology infrastructures in EU member states. These management talent schemes should be aimed at attracting talents that will study the technology infrastructures needs, in terms of competencies, skills, organizations, and business models, to deliver more efficiently their services to industry, especially to SMEs, startups and scaleups. Based on this sound understanding of Technology Infrastructures needs, the attracted management talents are expected to both develop and provide advice to Technology Infrastructures senior management and trainings to their staff members aimed at increasing their capacity to develop and provide services to industry. The developed trainings should be sector-agnostic, open-source, accessible remotely, easy to update, and take stock of other existing similar initiatives and experiences in Research and Technology Infrastructures.

[55] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Proposals should propose ways to enhance skills and career profiles of technical staff working in technology infrastructures to address evolving needs such as research security, data management, quality assurance, etc., as well as further professionalising the training of managerial and leadership staff in technology infrastructures. They should help also to promote entrepreneurial skills for technology infrastructures staff in training curricula to fully capture the potential of technology infrastructures as centres of deep-tech innovation ecosystem.

Furthermore, proposals should aim to enhance transnational and multisite collaboration among Technology Infrastructures fostering the building of technology infrastructures ecosystems, the sharing of experience, resources, and best practices in management and capacity building, staff exchange and networking. These collaborations could lay the foundations of a future framework to facilitate coordination of technology infrastructures policy and priority setting at EU level as well as exchange of experience and good practices. Proposals may also benefit, especially for communication and dissemination activities, from sharing best practices and taking stock of what other relevant projects are developing in the field of Technology Infrastructures. Existing specific best management practices and European frameworks in the technology fields considered by the proposals have to be taken into account.

HORIZON-CL4-2026-01-MAT-PROD-45: Pilot access schemes to Technology Infrastructures for European startups, scaleups and innovative SMEs (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 1.50 and 2.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 5.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy

	Community (2021-2025) [56].

Expected Outcome: Proposals should demonstrate the following expected outcomes:

- A sound understanding of the specific needs of industrial users (including but not limited to innovative SMEs, startups and scaleups) for Technology infrastructure services in specific priority areas including but not limited to advanced materials, clean energy, or health and biotechnology;
- Increased opportunities for industrial users for development, testing, up-scaling and deployment of new technologies via the use of services offered by Technology Infrastructures;
- Strengthened innovation and technology development capacity of European SMEs, startups and scaleups via improved access to Technology Infrastructures;
- Attractiveness and effectiveness of the developed access schemes for broadening the range of Technology Infrastructures users, especially for startups and scaleups, including with transnational access.

Scope: Startups, scaleups and other innovative SMEs require access to state-of-the-art research and technology facilities, equipment and expertise to test, upscale, validate new products and technologies, shortening the time-to-market and increasing the chances for a successful commercialisation. Access mechanisms to Technology Infrastructures as well as access contracts and collaboration or service provision agreements are often complex, while the costs of using such infrastructures can significantly surpass the financial capacities of growing innovative companies.

The action will develop and test pilot multi-site access schemes for startups, scaleups and other innovative SMEs, involving a critical mass of Technology Infrastructures operators and users in priority areas (including but not limited to advanced materials, clean energy, or health and biotechnology). It should build on existing initiatives with already developed single access points to a comprehensive set of facilities and services in a selected technology area, like for example Open Innovation Test Beds or other integrated networks, that allow for a quick deployment of a common access scheme.

The action should include setting-up a pilot centrally managed and funded access programme, allowing companies quick access to the needed services, with simplified and standardised access conditions applicable across the EU, to be coordinated and in line with the work on the envisaged European Charter of access for industrial users to research and technology infrastructures. While the focus shall be the provision of access and support services to

[56] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

companies, the action can also include enhancing the accessibility and usability of technology infrastructure services to ensure that they meet the evolving needs of users.

The action should aim at significant broadening of the user base of the technology infrastructures to address the needs of startups and scaleups that do not have access to such facilities in their local ecosystems. To this end, proposals should include the development and implementation of activities to increase the visibility and promote and demonstrate the uptake of technology infrastructures services provided to users across the EU.

Furthermore, proposals should aim to enhance transnational and multisite collaboration among Technology Infrastructures fostering the building of technology infrastructures ecosystems, the sharing of experience, resources, and best practices in management, service offer, staff exchange and networking. Proposals may also benefit, especially for communication and dissemination activities, from sharing best practices and taking stock of what other relevant projects are developing in the field of Technology Infrastructures.

HORIZON-CL4-2026-01-MAT-PROD-46: Mapping and service finder for Technology Infrastructures (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 2.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 2.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [57].

[57] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link:

Expected Outcome:

- Improved visibility and access to technology infrastructures via an interactive portal (open source, free to access, easy to update) of technology infrastructures across Europe;
- Improved understanding of the European landscape of technology infrastructures, including existing facilities and their services supporting the development of strategic technologies by industrial users;
- Boosted innovation and market potential by providing an interactive portal where industrial users, especially SMEs, startups and scaleups, can search and find services relevant for their innovation and product development.

Scope: For many innovative startups, finding and accessing highly specific research and technology infrastructures services is a major hurdle. Information about the available services is limited, especially on infrastructures located beyond their local ecosystems.

Proposals are expected to create an inventory of existing and ongoing mapping of technology infrastructure and technology infrastructure services in Europe and to consolidate the knowledge into an interactive portal that will serve as technology infrastructure service finder.

Furthermore, based on this inventory and other existing evidence-gathering and policy analysis, the proposals should use a comprehensive taxonomy of the technology infrastructures landscape. The portal, in line with regional smart specializations and existing ecosystems, should help assess which new technology infrastructure needs to be built to ensure long-term Europe's competitiveness and sovereignty.

Proposals should set out to establish an interactive portal including an interactive finder for technology infrastructure services in the EU. The finder should be aligned with other ongoing activities such as EIB TechEU, EIB Advisory services and other relevant tools identified during the inventory stage. The interactive finder should facilitate the cooperation between technology infrastructure operators with industry (including SMEs, startups and scaleups) and other relevant stakeholders and propose services from a demand driven perspective. It should lead to increased opportunities for startups and scaleups for development, testing, up-scaling and deployment of new technologies.

The developed platform should be based on open-sources technologies, allowing interoperability with parallel initiatives and self-sustainability on long-term, and propose a suitable opensource application interface (API) or develop an open-source API that will allow flow of information between technology infrastructure service providers. The CSA could support the maintenance of the platform for at least 5 years.

Proposals should include also communication actions aimed at increasing the visibility and uptake of the finder and of technology infrastructures across the EU as well as activities to

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https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

facilitate dialogue and networking among stakeholders. This should include promoting the uptake of the platform.

Furthermore, the proposal should develop a model to make the platform self-sustainable on the long-term, through, but not only limited to, proper governance, financing and other relevant aspects.

Proposals should also aim at enhancing transnational and multisite collaboration among Technology Infrastructures and their users, fostering the building of technology infrastructures ecosystems, the sharing of experience, resources, best practices service development and service offer, feedback from users, staff exchange and networking. Proposals may also benefit, especially for communication and dissemination activities, from sharing best practices and taking stock of what other relevant projects are developing in the field of Technology Infrastructures.

HORIZON-CL4-2027-01-MAT-PROD-47: Pilot access schemes to Technology Infrastructures for European startups, scaleups and innovative SMEs (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 1.50 and 2.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 5.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [58].

[58] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Expected Outcome: Proposals should demonstrate the following expected outcomes:

- A sound understanding of the specific needs of industrial users (including but not limited to innovative SMEs, startups and scaleups) for Technology infrastructure services in specific priority areas including but not limited to advanced materials, clean energy, or health and biotechnology;
- Increased opportunities for industrial users for development, testing, up-scaling and deployment of new technologies via the use of services offered by Technology Infrastructures;
- Strengthened innovation and technology development capacity of European SMEs, startups and scaleups via improved access to Technology Infrastructures;
- Attractiveness and effectiveness of the developed access schemes for broadening the range of Technology Infrastructures users, especially for startups and scaleups, including with transnational access.

Scope: Startups, scaleups and other innovative SMEs require access to state-of-the-art research and technology facilities, equipment and expertise to test, upscale, validate new products and technologies, shortening the time-to-market and increasing the chances for a successful commercialisation. Access mechanisms to Technology Infrastructures as well as access contracts and collaboration or service provision agreements are often complex, while the costs of using such infrastructures can significantly surpass the financial capacities of growing innovative companies.

The action will develop and test pilot multi-site access schemes for startups, scaleups and other innovative SMEs, involving a critical mass of Technology Infrastructures operators and users in priority areas (including but not limited to advanced materials, clean energy, or health and biotechnology). It should build on existing initiatives with already developed single access points to a comprehensive set of facilities and services in a selected technology area, like for example Open Innovation Test Beds or other integrated networks, that allow for a quick deployment of a common access scheme.

The action should include setting-up a pilot centrally managed and funded access programme, allowing companies quick access to the needed services, with simplified and standardised access conditions applicable across the EU, to be coordinated and in line with the work on the envisaged European Charter of access for industrial users to research and technology infrastructures. While the focus shall be the provision of access and support services to companies, the action can also include enhancing the accessibility and usability of technology infrastructure services to ensure that they meet the evolving needs of users.

The action should aim at significant broadening of the user base of the technology infrastructures to address the needs of startups and scaleups that do not have access to such facilities in their local ecosystems. To this end, proposals should include the development and

implementation of activities to increase the visibility and promote and demonstrate the uptake of technology infrastructures services provided to users across the EU.

Furthermore, proposals should aim to enhance transnational and multisite collaboration among Technology Infrastructures fostering the building of technology infrastructures ecosystems, the sharing of experience, resources, and best practices in management, service offer, staff exchange and networking. Proposals may also benefit, especially for communication and dissemination activities, from sharing best practices and taking stock of what other relevant projects are developing in the field of Technology Infrastructures.

HORIZON-CL4-2026-01-MAT-PROD-48: 'Proof of market' to improve valorisation and commercialisation of Horizon generated R&I results (IA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 0.20 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In line with the "*restriction on control in innovation actions in critical technology areas*" delineated in General Annex B of the General Annexes, entities established in an eligible country but which are directly or indirectly controlled by China or by a legal entity established in China are not eligible to participate in the action.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- The commercial potential of Horizon research results is explored;
- Results of Horizon projects are valorised, by ensuring a pathway to commercialisation; and

- Startups and SMEs become involved in valorisation.

Scope: The EU must do better in translating the knowledge generated by the Framework Programme into innovations with economic and societal value.

The objective of this action is to provide financial support ('Proof of market') to small consortia (i.e. spin-offs, startups, SMEs) to explore the exploitation potential, in the EU, of achieved results from ongoing or completed projects funded under Cluster 4 'Digital, Industry and Space' or its predecessor activities under the Leadership in enabling and industrial technologies (LEIT)[59] part of Horizon 2020.

The consortia do not necessarily have to be made of former or current beneficiaries but should own or have access to the knowledge assets of projects, including intellectual property, where relevant.

Proposals should envisage valorisation activities, such as:

- demonstrating a technology (e.g. testing);
- defining a commercialisation process;
- undertaking:
    - a market and competitiveness analysis;
    - a technology assessment and/or certification;
    - a verification of innovation potential;
- assessing potential "end users" of the expected innovation;
- testing, piloting with users or potential customers;
- complying with regulatory compliance and standards;
- consolidating IP rights.

Proposals should address achieved results from ongoing or completed Research and Innovation Actions and Innovation Actions (RIA/IA) funded directly under the work programmes of Horizon Europe Cluster 4 'Digital, Industry and Space' or its predecessor activities under the Leadership in enabling and industrial technologies (LEIT) part of Horizon 2020.

Applicants can be owners of the achieved results from previous projects or new participants. Proposals should include at least one of the following:

[59] Information and communication technologies, Nanotechnologies, Advanced materials, Advanced manufacturing and processing, Biotechnology and Space.

- Confirmation that at least one of the applicants of the current proposal is the owner or holder of the relevant knowledge assets including Intellectual Property Rights (IPR) and possesses the necessary rights to commercialise the results for the entire duration of the proposed project, or

- Commitment letter from the owner(s) of the relevant result(s) confirming the owner(s)' willingness to negotiate fair, reasonable, and non-discriminatory access to the results, including IPR where relevant, for the purpose of future commercial exploitation.

The proposal should specify the grant number and acronym of the project(s) which generated the results.

Proposals should present a clear vision of the intended pathway to market. Hence, the participation of a business partner should be envisaged.

HORIZON-CL4-2027-01-MAT-PROD-49: 'Proof of market' to improve valorisation and commercialisation of Horizon generated R&I results (IA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 0.20 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.70 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: Given the scope of this topic, the page limit is exceptionally reduced to 10 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In line with the "*restriction on control in innovation actions in critical technology areas*" delineated in General Annex B of the General Annexes, entities established in an eligible country but which are directly or indirectly controlled by China or by a legal entity established in China are not eligible to participate in the action.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action,

	object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.
Evaluation Procedure	The procedure is described in General Annex F. The following exceptions apply: This topic will be subject to a 'partial randomisation' selection. The evaluation committee will be composed partially of representatives of EU institutions in order to conduct the random ranking. For proposals meeting the quality thresholds, the procedure under points 1, 2, 3 or 4 below will apply depending on their score. Proposals with the same score will be subject to the same procedure. Starting from proposals with the highest score : (1) The highest scored proposals with a cumulative total requested EU contribution **as close as possible to** EUR 2.35 million, and not less than EUR 1.55 million, will be ranked based on score and invited to the next stage 'grant preparation'[60]. (2) Ranking in random order will apply to proposals not allocated under point 1 with subsequent highest scores for a cumulative total requested EU contribution **as close as possible to two times** the remaining indicative budget (i.e. indicative budget not assigned to proposals under point 1) **if the overall difference of scores between these proposals is 0.5 or less.** Based on this ranking, standard procedures apply for invitation to 'grant preparation', placing on the reserve list, or rejection. The randomisation must be transparent, and the integrity of the process must be ensured and documented. (3) **If the overall difference of scores between proposals under point 2 exceeds 0.5**, points 1 and 2 above do not apply. In this case, the highest scored proposals with a cumulative total requested EU contribution up to EUR 4.70 million will be ranked based on score and invited to the next stage 'grant preparation'[61].

[60] If the budget assigned to proposals under point 1 exceeds EUR 4.70 million, the remaining budget is zero and point 2 does not apply. In this case, the proposals identified under point 1 with the lowest equal score will be ranked in random order as described under point
Based on this ranking, standard procedures apply for invitation to 'grant preparation', placing on the reserve list, or rejection.

[61] If the budget assigned to proposals under point 3 exceeds EUR 4.70 million, the proposals identified under point 3 with the lowest equal score will be ranked in random order as described under point 2.

	(4) Proposals not allocated under points 1, 2, or 3 will be rejected due to lack of available budget[62].

Expected Outcome:

- The commercial potential of Horizon research results is explored;
- Results of Horizon projects are valorised, by ensuring a pathway to commercialisation; and
- Startups and SMEs become involved in valorisation.

Scope: The EU must do better in translating the knowledge generated by the Framework Programme into innovations with economic and societal value.

The objective of this action is to provide financial support ('Proof of market') to small consortia (i.e. spin-offs, startups, SMEs) to explore the exploitation potential, in the EU, of achieved results from ongoing or completed projects funded under Cluster 4 'Digital, Industry and Space' or its predecessor activities under the Leadership in enabling and industrial technologies (LEIT)[63] part of Horizon 2020.

The consortia do not necessarily have to be made of former or current beneficiaries but should own or have access to the knowledge assets of projects, including intellectual property, where relevant.

Proposals should envisage valorisation activities, such as:

- demonstrating a technology (e.g. testing);
- defining a commercialisation process;
- undertaking:
    - a market and competitiveness analysis;
    - a technology assessment and/or certification;
    - a verification of innovation potential;
- assessing potential "end users" of the expected innovation;
- testing, piloting with users or potential customers;

Based on this ranking, standard procedures apply for invitation to 'grant preparation', placing on the reserve list, or rejection.

62 Should the ranking of proposals falling under points 1, 2 or 3 result in an insufficient number of proposals on the reserve list, it may be complemented with proposals falling under point 4 ranked in accordance with the rules described in General Annex G.

63 Information and communication technologies, Nanotechnologies, Advanced materials, Advanced manufacturing and processing, Biotechnology and Space.

- complying with regulatory compliance and standards;
- consolidating IP rights.

Proposals should address achieved results from ongoing or completed Research and Innovation Actions and Innovation Actions (RIA/IA) funded directly under Cluster 4 'Digital, Industry and Space' or its predecessor activities under the Leadership in enabling and industrial technologies (LEIT) part of Horizon 2020.

Applicants can be owners of the achieved results from previous projects or new participants. Proposals should include at least one of the following:

- Confirmation that at least one of the applicants of the current proposal is the owner or holder of the relevant knowledge assets including Intellectual Property Rights (IPR) and possesses the necessary rights to commercialise the results for the entire duration of the proposed project, or
- Commitment letter from the owner(s) of the relevant result(s) confirming the owner(s)' willingness to negotiate fair, reasonable, and non-discriminatory access to the results, including IPR where relevant, for the purpose of future commercial exploitation.

The proposal should specify the grant number and acronym of the project(s) which generated the results.

Proposals should present a clear vision of the intended pathway to market. Hence, the participation of a business partner should be envisaged.

HORIZON-CL4-2027-01-MAT-PROD-50: European network for upscaling venture builders' roles in research performing organisations (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 1.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 1.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for

	Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [64].

Expected Outcome: Projects are expected to contribute to the following outcomes:

- Raised awareness of venture builders' roles as part of the ecosystem of startup support in research performing organisations, including universities, Research and Technology Organisations and research and technology infrastructures;
- Upscaling or establishment of venture builders' roles in research performing organisations; and
- Enhanced capacity for sharing resources supporting venture building, exchanging best practices and developing skills needed for successful venture building undertakings in research performing organisations, leading to increased commercialisation of research results (from lab to market).

Scope: A variety of organisations across Europe support start up and spin off creation, including incubators, accelerators, innovation hubs, science parks and others. Within this ecosystem, venture builders emerge as playing a double role: on the one hand in building the start-up, drawing on innovative ideas and new technologies at very early stage and bringing together the founding team to create the start up; and on the other hand in providing the support needed to enable the start up to launch and grow in the market.

This action will support research performing organisations, such as universities, Research and Technology Organisations, and research and technology infrastructures, to upscale venture building functions and create venture builders' roles of different types, depending on the their needs, while fully demonstrating a gender-sensitive approach that takes account of the different barriers faced by women innovators and entrepreneurs across the innovation ecosystem.

Raw Materials

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-01-MAT-PROD-11: Innovative technologies and tools for exploration and data modelling of raw materials (RIA)

Call: INDUSTRY
Specific conditions

[64] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 7.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 18.50 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit in part B of the General Annexes is exceptionally extended by 3 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: To increase EU resilience in raw materials supply chains and thus reduce the serious risk to the Union's strategic assets, economic and societal interests, autonomy and security associated with the current EU reliance on a few third countries for critical raw materials, by increasing sustainable and responsible sourcing of primary and secondary raw materials necessary to enable the green and digital transition and in alignment with the objectives of the Critical Raw Materials Act[65], participation in this topic is limited to legal entities established in Member States, associated countries, OECD countries, African Union Member States, MERCOSUR, CARIFORUM, Andean Community and countries with which the EU has concluded strategic partnerships on raw materials[66] as well as trade agreements (or association/economic partnership or equivalent agreements, including the new Clean Trade and Investment Partnerships) containing raw materials cooperation provisions (i.e. Energy and Raw materials chapters)[67]. The choice of these countries was made taking into consideration the development of strategic international partnerships on raw materials and avoidance of reinforcing existing over-dependencies, as well as the importance of involving partners committed to pursuing open trade in such materials. Proposals including legal entities which are not established in the

65 Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

66 https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

67 https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/negotiations-and-agreements_en

	countries that fall under the criteria above will be ineligible. For the duly justified and exceptional reasons listed above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or a non-eligible country entity, shall not participate in the action.
Technology Readiness Level	Activities are expected to start at TRL 3-4 and achieve TRL 5 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [68].

Expected Outcome:

- Increase information on the European Union raw materials, particularly critical raw materials occurrences and deposits, while contributing to the implementation of the National exploration programme,(article 19 of the Critical Raw Materials Regulation(CRMA)[69].
- Improve knowledge base of EU raw materials to identify new areas for exploration and resource estimation;
- Accelerate development of EU domestic raw materials exploration projects integrating innovative technologies that can form the basis for new EU SMEs;
- Develop innovative exploration data acquisition, processing and modelling and mineral system analysis for identification of critical raw materials deposits in the EU;

[68] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[69] Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

- Projects will provide technologies and data which will strengthen EU Geological Surveys capacities and skills to implement the National Exploration programmes as defined in the CRMA.

- Accelerate development of EU domestic raw materials exploration projects by junior mining / exploration companies.

Scope: Actions should develop and validate advanced geological modelling and mineral system analysis using multi-source data (geological, geophysical, and geochemical) from ground-based and remote-sensing techniques to develop high-resolution 3D models of mineral deposits. The integration of new (AI and machine learning) and conventional methods will be necessary to predict with the greatest accuracy the location of mineral deposits of critical raw materials and their carrier minerals. Actions contributing to the National exploration programmes under the article 19 of CRMA is encouraged.

Actions should develop new knowledge and conceptual models, supported by innovative technologies to strengthen and secure the EU's supply of primary raw materials by:

- Generating better geological understanding (i.e. characterization, modelling, mapping) of known mineral deposits to facilitate discovery of new resources, including mineral systems carrying critical raw materials;

- Collecting new geological, geophysical, and geochemical data and developing ore genetic models and mineral system analysis to build a broad understanding of EU's deposit type, including critical raw materials in order to identify areas for exploration, especially in previously underexplored regions;

- Advancing mineral prospectivity modelling processes;

- Facilitate the integration of existing multi-datasets with newly acquired data.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to this Destination.

HORIZON-CL4-2026-01-MAT-PROD-12: Technologies for innovative extraction of critical raw materials (RIA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 7.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 19.00 million.

Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit in part B of the General Annexes is exceptionally extended by 3 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: To increase EU resilience in raw materials supply chains and thus reduce the serious risk to the Union's strategic assets, economic and societal interests, autonomy and security associated with the current EU reliance on a few third countries for critical raw materials, by increasing sustainable and responsible sourcing of primary and secondary raw materials necessary to enable the green and digital transition and in alignment with the objectives of the Critical Raw Materials Act[70], participation in this topic is limited to legal entities established in Member States, associated countries, OECD countries, African Union Member States, MERCOSUR, CARIFORUM, Andean Community and countries with which the EU has concluded strategic partnerships on raw materials[71] as well as trade agreements (or association/economic partnership or equivalent agreements, including the new Clean Trade and Investment Partnerships) containing raw materials cooperation provisions (i.e. Energy and Raw materials chapters)[72]. The choice of these countries was made taking into consideration the development of strategic international partnerships on raw materials and avoidance of reinforcing existing over-dependencies, as well as the importance of involving partners committed to pursuing open trade in such materials. Proposals including legal entities which are not established in the countries that fall under the criteria above will be ineligible. For the duly justified and exceptional reasons listed above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or a non-eligible country entity, shall not participate in the action.

70 Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

71 https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

72 https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/negotiations-and-agreements_en

Technology Readiness Level	Activities are expected to start at TRL 3-4 and achieve TRL 5 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [73].

Expected Outcome:

- Increasing availability of efficient, cost-effective and innovative raw materials extraction technologies in the medium and long term.
- Increasing the potential for primary sourcing ofEU based of raw materials deposits;
- Improving the responsible supply of raw materials to the EU, and contributing to the Critical Raw Materials Act (CRMA)[74] objectives (Article 1).
- Substantially reducing greenhouse gases (GHGs) and air pollutant emissions intensity per ton of the extracted material (metal, metal content, concentrate, mineral) while improving the impacts on habitat protection, ecosystem health and biodiversity.

Scope: Actions should develop and validate new sustainable concepts and technological solutions, for mining of complex or difficult to access mineral deposits, including abandoned mining sites, particularly addressing the challenges of accessibility, efficiency, industrial viability, safety and environmental and health impacts, including but not limited to water use, water, soil and air pollution, deforestation, biodiversity, ecosystem health, erosion, desertification, and GHG intensity of extraction.

Actions should assess how their technological solutions can deliver measurable biodiversity outcomes

[73] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[74] Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

The mining industry and users of targeted raw materials should assume a prominent role in the proposed actions, supported by adequate allocation of resources. The actions should duly justify the relevance of all targeted minerals and metals. Priority are the EU critical raw materials. Deep sea mining is not in the scope of this topic.

Actions should envisage clustering activities with other relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

Proposals submitted under this topic must include a business case and a credible exploitation strategy, covering all required elements as outlined in the introduction to this Destination.

International cooperation is encouraged with countries with which the EU has signed Strategic Partnerships on raw materials, especially with Ukraine.[75]

HORIZON-CL4-2026-01-MAT-PROD-13: Monitoring of secondary raw materials (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: To increase EU resilience in raw materials supply chains and thus reduce the serious risk to the Union's strategic assets, economic and societal interests, autonomy and security associated with the current EU reliance on a few third countries for critical raw materials, by increasing sustainable and responsible sourcing of primary and secondary raw materials necessary to enable the green and digital transition and in alignment with the objectives of the Critical Raw Materials Act[76],

[75] https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

[76] Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

	participation in this topic is limited to legal entities established in Member States, associated countries, OECD countries, African Union Member States, MERCOSUR, CARIFORUM, Andean Community and countries with which the EU has concluded strategic partnerships on raw materials [77] as well as trade agreements (or association/economic partnership or equivalent agreements, including the new Clean Trade and Investment Partnerships) containing raw materials cooperation provisions (i.e. Energy and Raw materials chapters)[78]. The choice of these countries was made taking into consideration the development of strategic international partnerships on raw materials and avoidance of reinforcing existing over-dependencies, as well as the importance of involving partners committed to pursuing open trade in such materials. Proposals including legal entities which are not established in the countries that fall under the criteria above will be ineligible. For the duly justified and exceptional reasons listed above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or a non-eligible country entity, shall not participate in the action.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [79].

Expected Outcome:

[77] https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

[78] https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/negotiations-and-agreements_en

[79] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- Enhanced knowledge base of secondary raw materials in the EU and third countries, including their potential, resource estimation, production, refining processes and biodiversity footprint;
- Accelerated development of projects leading to commercial exploitation of secondary raw materials in the EU;
- Developed reports analysing future trends in raw materials markets.
- Identified supply and demand bottlenecks of future secondary raw materials supply;
- Improved EU raw materials intelligence, strategic planning and foresight capacity.

Scope: A successful transition to a climate-neutral, biodiversity friendly, circular and digitised EU economy relies heavily on a secure supply of raw materials. In order to strengthen EU autonomy and reduce over-dependency, we must boost domestic sourcing, both for primary and secondary raw materials.

Actions should be based on a common understanding of relevant terms and codes, and develop an understanding of anthropogenic resources and derive the needed aspects for classification of recovery projects and to develop criteria for a transparent, consistent and objective classification, needed to establish a comprehensive resource classification approach.

Projects should also include the biodiversity footprint of primary and secondary raw materials in the expected reports and foresights, using natural capital accounting frameworks.

Actions should acquire new data on secondary raw materials via in situ sampling from different regions across the EU, collect existing data and present in a harmonised UNFC format. The monitoring should focus on countries where the waste goes into European recycling industrial ecosystems. However, the monitoring must cover the statistics of wastes exported from Europe as well as waste flows between Member States. The action could build on and advance further the work of UNECE – UNFC expert group on Anthropogenic resources regarding the classification of secondary raw materials and the work of Horizon Europe project FUTURAM regarding collection of data and information on secondary raw materials. Projects could build on the knowledge and models from projects funded under HORIZON-CL6-2021-BIODIV-01-15, as well as the UN WCMC natural capital accounting frameworks.[80] The action should develop a proposal for EU statistics for secondary raw materials.

The action should focus on the following streams of secondary raw materials, with particular attention to critical raw materials: waste batteries, WEEE, mining waste, slags and ashes, and construction and demolition waste. The action should also anticipate the evolution of WEEE directive.

All the data and information generated through these actions should be shared in open formats on a free of charge basis with the European Commission, for its own use and for publication.

[80] https://www.unep-wcmc.org/en/natural-capital

The action should envisage clustering activities with other relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

International cooperation is encouraged with countries with which the EU has signed Strategic Partnerships on raw materials, especially with Ukraine.[81]

HORIZON-CL4-2026-01-MAT-PROD-14: Improving availability of secondary raw materials through recycling (IA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 7.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 28.00 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit in part B of the General Annexes is exceptionally extended by 3 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: To increase EU resilience in raw materials supply chains and thus reduce the serious risk to the Union's strategic assets, economic and societal interests, autonomy and security associated with the current EU reliance on a few third countries for critical raw materials, by increasing sustainable and responsible sourcing of primary and secondary raw materials necessary to enable the green and digital transition and in alignment with the objectives of the Critical Raw Materials Act[82], participation in this topic is limited to legal entities established in

[81] https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

[82] Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

	Member States, associated countries, OECD countries, African Union Member States, MERCOSUR, CARIFORUM, Andean Community and countries with which the EU has concluded strategic partnerships on raw materials[83] as well as trade agreements (or association/economic partnership or equivalent agreements, including the new Clean Trade and Investment Partnerships) containing raw materials cooperation provisions (i.e. Energy and Raw materials chapters)[84]. The choice of these countries was made taking into consideration the development of strategic international partnerships on raw materials and avoidance of reinforcing existing over-dependencies, as well as the importance of involving partners committed to pursuing open trade in such materials. Proposals including legal entities which are not established in the countries that fall under the criteria above will be ineligible. For the duly justified and exceptional reasons listed above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or a non-eligible country entity, shall not participate in the action.
Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 7 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- Raw materials recycling and re-use of components and/or products from end-of-life products technologies and urban mines, including cost-effective and efficient disassembly, separation, shredding and sorting technologies for separation and recycling and the sustainable embedment of the process regarding energy, resource and water efficiency;

- Projects should analyse impacts on biodiversity of urban mines and subsequently propose solutions for reducing these impacts with the aim of renaturing these sites;

[83] https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

[84] https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/negotiations-and-agreements_en

- Improved responsible supply of raw materials to Europe contributing to the Critical Raw Materials Act (CRMA)[85] objectives (Article 1).

Scope: The focus is on raw materials (metals only), particularly on critical raw materials.

Actions should demonstrate new or improved systems located in the EU developing material efficient high-quality recycling of raw materials, improved resource efficiency and reduced impacts on biodiversity.

Actions should focus on the whole chain of recycling processes and procedures - from collection, logistics, characterisation, disassembly, separation, shredding, sorting, cleaning, refining, purification of secondary raw materials and quality of produced outputs, ending with renaturation of urban mines or waste deposits.

Recycling and re-use where the recycled material is of lower quality and functionality than the original material (downcycling), is not in the scope of the topic.

The recycling industry based in the EU, and users of recovered secondary raw materials should assume a prominent role in the proposed actions, supported by adequate allocation of resources.

Actions should envisage clustering activities with other projects aiming at bioremediation second life, re-use, repurposing, remanufacturing of products and/or components relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

Proposals submitted under this topic must include a business case and a credible exploitation strategy, covering all required elements as outlined in the introduction to this Destination. For TRLs 6-7, a credible strategy to achieve future full-scale deployment in the EU is expected, indicating the commitments of the industrial partners after the end of the project.

International cooperation is encouraged with countries with which the EU has signed Strategic Partnerships on raw materials, especially with Ukraine.[86]

HORIZON-CL4-2027-01-MAT-PROD-16: Technologies for innovative processing of raw materials (IA)

Call: INDUSTRY
Specific conditions

[85] Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

[86] https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 10.00 and 12.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 49.00 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit is exceptionally extended by 3 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: To increase EU resilience in raw materials supply chains and thus reduce the serious risk to the Union's strategic assets, economic and societal interests, autonomy and security associated with the current EU reliance on a few third countries for critical raw materials, by increasing sustainable and responsible sourcing of primary and secondary raw materials necessary to enable the green and digital transition and in alignment with the objectives of the Critical Raw Materials Act[87], participation in this topic is limited to legal entities established in Member States, associated countries, OECD countries, African Union Member States, MERCOSUR, CARIFORUM, Andean Community and countries with which the EU has concluded strategic partnerships on raw materials[88] as well as trade agreements (or association/economic partnership or equivalent agreements, including the new Clean Trade and Investment Partnerships) containing raw materials cooperation provisions (i.e. Energy and Raw materials chapters)[89]. The choice of these countries was made taking into consideration the development of strategic international partnerships on raw materials and avoidance of reinforcing existing over-dependencies, as well as the importance of involving partners committed to pursuing open trade in such materials. Proposals including legal entities which are not established in the

87 Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

88 https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

89 https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/negotiations-and-agreements_en

	countries that fall under the criteria above will be ineligible. For the duly justified and exceptional reasons listed above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or a non-eligible country entity, shall not participate in the action.
Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 7 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome:

- Increased recovery rates of valuable raw materials, particularly critical raw materials from low grade or complex ores and/or from mining waste;
- Increased economic performance in terms of higher material-, water-, energy- and cost-efficiency and flexibility in minerals processing and metallurgical processes; and
- Improved health, safety and environmental performance of the operations throughout the whole life cycle that is considered, including a reduction in waste, wastewater and generation of emissions of air pollutants and a better recovery of resources from generated waste, reducing the environmental footprint and contributing to biodiversity and ecosystems preservation.

Scope: Actions should develop and validate / demonstrate pilot scale facility located in the EU integrating relevant processing and refining technologies for improved recovery of raw materials from low grade and/or complex ores from extractive wastes, reduction of waste and water and air pollution, higher energy efficiency and reduction of land and sea-use change, habitat loss, degradation and fragmentation. The action can also focus on reducing the content of toxic elements or compounds in the resulting material products. The actions should target minerals and metals, particularly critical raw materials.

The solution proposed should be flexible enough to adapt to different or variable ore grades and extractive waste streams and should be supported by efficient and robust process control. Where relevant, any solution proposed for the reduction of the content of toxic elements or compounds in the resulting materials should also include the appropriate management of the hazardous substances removed.

Actions should develop intelligent and innovative production systems which better utilise natural resources by minimising losses during waste-rock separation in an optimised and energy-efficient process and by minimising use of water.

Recycling of end-of-life products is excluded from this topic.

Actions should envisage clustering activities with other relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

Actions should facilitate the market uptake of solutions developed through industrially- and user-driven multidisciplinary consortia covering the relevant value chain and should consider standardisation aspects when relevant. The action should also include the analysis of financial opportunities ensuring the market exploitation and replication of the circular business model behind the developed solutions as new processes, products and/or services. The industry based in the EU, and users of recovered secondary raw materials should assume prominent role in the proposed actions, supported by adequate allocation of resources.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the introduction to this Destination. For TRLs 6-7, a credible strategy to achieve full-scale deployment in the EU is expected, indicating the commitments of the leading partners after the end of the project.

International cooperation is encouraged with countries with which the EU has signed Strategic Partnerships on raw materials, especially with Ukraine.[90]

HORIZON-CL4-2027-01-MAT-PROD-17: Expert network on Critical raw materials (CSA)

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 3.00 million.
Type of Action	Coordination and Support Actions
Eligibility	The conditions are described in General Annex B. The following

[90] https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

conditions	exceptions apply: To increase EU resilience in raw materials supply chains and thus reduce the serious risk to the Union's strategic assets, economic and societal interests, autonomy and security associated with the current EU reliance on a few third countries for critical raw materials, by increasing sustainable and responsible sourcing of primary and secondary raw materials necessary to enable the green and digital transition and in alignment with the objectives of the Critical Raw Materials Act[91], participation in this topic is limited to legal entities established in Member States, associated countries, OECD countries, African Union Member States, MERCOSUR, CARIFORUM, Andean Community and countries with which the EU has concluded strategic partnerships on raw materials [92] as well as trade agreements (or association/economic partnership or equivalent agreements, including the new Clean Trade and Investment Partnerships) containing raw materials cooperation provisions (i.e. Energy and Raw materials chapters)[93]. The choice of these countries was made taking into consideration the development of strategic international partnerships on raw materials and avoidance of reinforcing existing over-dependencies, as well as the importance of involving partners committed to pursuing open trade in such materials. Proposals including legal entities which are not established in the countries that fall under the criteria above will be ineligible. For the duly justified and exceptional reasons listed above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or a non-eligible country entity, shall not participate in the action.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for

91 Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020

92 https://single-market-economy.ec.europa.eu/sectors/raw-materials/areas-specific-interest/raw-materials-diplomacy_en

93 https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/negotiations-and-agreements_en

	Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [94].

Expected Outcome:

- Strengthening the expert capacity in the EU in a wide range of raw materials along the whole value chain;
- Better informed and more effective decision-making by the EU and National policy makers and the producers and users of raw materials regarding the supply and demand of raw materials and the associated environmental and social aspects;
- Improved EU official statistics and building the EU knowledge base of primary and secondary raw materials.

Scope: Actions should strengthen an EU expert network and community covering all raw materials screened in the critical raw materials assessment of 2027. Flexibility in screening additional raw materials will be an added value.

The consortium should build the EU expert community covering each screened raw material with expertise on primary and secondary resources; production, including exploration, mining, processing, recycling and refining; substitution of critical raw materials; raw materials markets; future demand and supply; supply risk management and stress tests; materials flows; raw materials standardisation; environmental footprint, socio-economic analysis, and strategic value chains and end-use sectors, including batteries, e-mobility, renewable energy, electronics, security and aerospace.

The actions should contribute to the EU policy making related to critical raw materials, in particular to the implementation of the Critical Raw Materials Act, including the development of the new list of critical raw materials and their specific applications or sectors. The action is expected to coordinate with the Commission regarding the events and reflect the EU policy planning.

The actions should also improve data and knowledge on all screened raw materials and the analysis of the future supply and demand of raw materials, their environmental footprint, technology gaps and innovation potential along the raw materials value chains.

The action should update the data and information fact sheets from the previous criticality exercise for all screened raw materials, and ensure their quality by relevant raw material experts. Factsheets are to be finalised by the end of 2029, and could be fine-tuned before publication expected in 2030.

[94] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

The action is expected to organise two expert validation workshops in 2029 to support the EU criticality assessment, and validate draft factsheets for all screened materials. In coordination with the Commission, organise in-depth workshops on several strategic metals for renewable energy, e-mobility and aero-space and security / dual use, with recognised commodity experts from industry and other organisations.

The data and information produced by the action shall be shared with the Commission at free of charge basis.

The action should envisage clustering activities with other relevant selected projects for cross-projects co-operation, consultations and joint activities on cross-cutting issues and share of results as well as participating in joint meetings and communication events. To this end proposals should foresee a dedicated work package and/or task, and earmark the appropriate resources accordingly.

Innovative Advanced Materials-based Technologies

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-05-MAT-PROD-25: New or enhanced Innovative Advanced Materials (IAM) enabled sensing functionality (RIA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 7.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 22.50 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Technology Readiness Level	Activities are expected to start at TRL 3 and achieve TRL 5-6 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering the two areas described below, grants will be awarded to applications not only in order of ranking but at

	least also to one proposal that is the highest ranked within each area, provided that the applications attain all thresholds. For the purposes of the ranking the main area declared by the proposal will be considered.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [95].

Expected Outcome:

- New technological solutions with improved performance and reduced energy and environmental impact consumption providing significant advances towards the emergence of competitive value chains in IAM-based sensing components in Europe.
- Widespread adoption of low-cost IAM-based sensing solutions in e.g. environmental monitoring, industrial safety, and next-generation smart sensing applications including health monitoring.

Scope: Proposals should address at least one of the following two areas.

A. IAM-enabled multifunctional surfaces able to detect and respond to changes in the environment, such as temperature, pH, moisture, microbiological or chemical pollutants, concentration of chemical species in air, gases and liquids, and converting these signals into measurable outputs. Such surfaces should demonstrate high performance in terms of sensitivity, selectivity, response time, durability and cost-effectiveness. Proposals should target applications such as environmental and ecosystems monitoring, as well as health monitoring.

B. The development of enhanced IAM-based sensor demonstrators, that enable miniaturization and integration into application systems e.g. into portable IoT devices, lightweight wearables and wearable systems. These sensors must meet key performance requirements, e.g. compatibility with silicon technology, operation in real conditions with low

[95] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

power consumption, high sensitivity (low limit of detection and/or high signal to noise ratio), high selectivity and fast detection speed.

Stability and resistance to extreme conditions such temperature and humidity should be taken into account. Solutions could also take inspiration from bio-mimicry.

Proposals may contribute to one or both above R&I areas. However the main area addressed must be clearly and unambiguously identified in the proposed project.

Proposals should integrate the value chain and incorporate the relevant manufacturing technologies needed to bring the developed devices towards the market.

Technology must be demonstrated in an industrially relevant environment.

Proposals should include activities aiming at facilitating future exploitation of results.

Consideration of circularity and recyclability, and compliance with the safe and sustainable by design framework should boost the confidence of industry and end-users and enhance the Innovative Advanced Materials ecosystem and uptake.

Where relevant, cooperation with activities funded under the Chips Joint Undertaking, the photonics partnership or other initiatives are encouraged.

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority (i.e. DG-CNECT and HaDEA) before the intended transfer or licensing takes place and the granting authority may up to four years after the end of the action object to a transfer of ownership or the exclusive licensing of results.

This topic implements the co-programmed European Partnership Innovative Advanced Materials for the EU (IAM4EU).

Destination: Developing an agile and secure single market and infrastructure for data-services and trustworthy artificial intelligence services

Developing an agile and secure single market for data and trustworthy AI services is central to Europe's digital sovereignty and competitiveness. The convergence of the Telco-Edge-Cloud continuum (3C) with open orchestration platforms will unlock the transformative potential of AI across strategic sectors, from mobility and energy to health and manufacturing, fostering new services and business models. Building a sovereign Open Internet Stack, rooted in open-source, interoperable and standard-based solutions, will reinforce trust, resilience and innovation, while ensuring Europe retains control over critical digital infrastructures. At the same time, decentralised and federated approaches to AI data processing, combined with breakthroughs in sustainable data centres, will help overcome Europe's compute bottlenecks and dependencies, and reduce the environmental footprint of AI. By aligning with the Data Union Strategy and Common European Data Spaces, these efforts will deliver secure, compliant and adaptive data-sharing frameworks that empower citizens, businesses and administrations. Together, they will strengthen Europe's ability to innovate, scale and lead globally in data and AI, anchoring digital sovereignty in line with EU values and strategic interests.

Legal entities established in China are not eligible to participate in both Research and Innovation Actions (RIAs) and Innovation Actions (IAs) falling under this destination. For additional information please see "Restrictions on the participation of legal entities established in China" found in General Annex B of the General Annexes.

Telco-Edge-Cloud continuum/ 3C Network (Connected Collaborative Computing) and Open Internet Stack

Proposals are invited against the following topic(s):

HORIZON-CL4-2027-04-DATA-08: Demand-side 3C pilot demonstrators on converged Telco Edge Cloud Infrastructure (IA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 19.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 38.00 million.
Type of Action	Innovation Actions
Eligibility	The conditions are described in General Annex B. The following

conditions	exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[96]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security . Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees. [97]

[96] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

[97] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

Technology Readiness Level	Activities are expected to achieve TRL 6-8 by the end of the project – see General Annex B.

Expected Outcome:

- Demand-side driven validation of open orchestration platforms across the telco-cloud edge continuum unlocking notably the transformative value of AI for European businesses, driving business growth in multiple industries strategic for Europe.

- Enabling the path towards sustainability and competitiveness of key vertical sectors in the EU, exploiting the innovative features of 3C/ telco-edge-cloud, including network features such as API (Application Program Interface) aggregation, slicing, automation, latency, security, ISAC (Integrated Sensing and Communication), reconfigurability, to significantly improve quality of service, resilience, sustainability and other performance parameters of digital communications.

- The demand pilots will have a clear sector relevance, with one pilot addressing the future of smart mobility including the automotive sector.

- A vibrant ecosystem around 3C/telco-edge-cloud infrastructure, targeting SMEs and start-ups to develop innovative services and new business models validation and marketplace exploitation strategies, as well as paths to commercialization or replicability.

Scope: The term "Connected, Collaborative, Computing (3C) Network" refers to a telco-edge-cloud, secure multi-provider and multi-technology, communication system that hosts network functions and workloads for and beyond connectivity (e.g. 6G, AI Storage/Compute, networking, Security ISAC , and any other application or capability) as a service (aaS). Key features of the 3C/ telco-edge-cloud network include programmability, fast service creation, security and privacy, mobility, and service continuity across inter-domain deployments. 3C/ telco-edge-cloud networks enable innovative use cases for an EU Digital Market that integrate communication, collaboration and computing capabilities in competitive and sustainable business models that will reinforce EU competitiveness and contribute to digital sovereignty, in particular through the use of Open Internet Stack components. Resulting solutions should be available for use in the public sector (for instance for justice systems).

The 3C Network large-scale pilot funded under *topic HORIZON-CL4-2025-03-DATA-08: Large-scale pilots for supply end-to-end infrastructures integrating device, network computing and communication capabilities for Telco Edge Cloud deployments, as a basis for Connected Collaborative Computing Networks (3C networks) (RIA)* is setting up end-to-end integrated infrastructures and platforms, bringing together players from different segments of the connectivity and compute value chain and beyond. The main target is to research and validate the integration of device, network, cloud and edge computing, and communication capabilities for telco edge cloud deployments to realize a ubiquitous mesh of computing and communication resources. As a main outcome the supply side pilot establishes an open

orchestration platform across the telco-cloud-edge continuum, exploits the transformative value of AI and builds on the integration of solutions developed by the Open Euro Stack.

Demand- side pilot demonstrators called in this topic will build on the above supply side large-scale pilot and integrate future domain-specific applications and services with an emerging European 3Cs/ telco-edge-cloud infrastructure, leveraging different network features. Key features will include security and privacy solutions offering resistance to emerging quantum threats (such as via post-quantum cryptography), mobility, and service continuity across inter-domain and multi-cloud deployments and ecosystems.

Up to two pilot demonstrators on below listed specific verticals are expected.

- One pilot demonstrator focusing on **Mobility** covering specific areas of transport, logistics and the Automotive industry. The pilot should support the strategy as developed by the Connected and Autonomous Vehicle Alliance identified in the Automotive Action plan, in particular Pillars 3 (AI models) and 5 (Large-scale testing), which will be launched in 2025.

- One pilot demonstrator focusing on another vertical sector such as energy, smart communities, industrial virtual worlds, health, agrifood or manufacturing.

They would be driven by a consortium including partners both from the demand (user) and infrastructure supply side. The pilot demonstrators should take advantage of open application interfaces, explore the possibilities of AI, “virtual worlds”, and other innovative technologies for practical implementation in the referred vertical domains. They should leverage combined investments in network infrastructure, computing and connectivity infrastructure as an enabler for more extensive set of digital innovation, with cognitive cloud computing and swarm intelligence, generative AI and LLM, as well as on-boarding of XR/AR technologies, being ranked most important.

Proposals are expected to detail a robust data governance model for the data generated and processed within the pilots. This model should address data sovereignty, interoperability with Common European Data Spaces, and alignment with principles from initiatives like Gaia-X. It should outline clear mechanisms for secure and compliant data sharing between the demand-side (users) and supply-side (infrastructure providers), establishing the trust necessary for a functional data economy on top of the 3C infrastructure.

Pilot demonstrators should demonstrate the evolution from virtualised and cloud-native network functions towards automated network operations enabling agile and green IoT-edge computing solutions and decentralised intelligence. They should also demonstrate benefits for infrastructure providers to operate networks more efficiently and move beyond traditional connectivity-service models to higher value-added services.

Demonstrations will respond to the ever more demanding processing power of AI through integration on-device level and changes triggered by GenAI affecting global communication infrastructures. Orchestration of workloads across the telco-cloud-edge continuum from

distributed sensors and actuators to the edge and cloud is a crucial part of innovation as AI becomes more resource-intensive.

The pilot demonstrators should take into consideration the recommendations on user requirements from the advisory group of end users, as well as liaise with the collaboration and support action (CSA) funded under WP25 to bridge between the 3C/ telco-edge-cloud supply pilot funded under WP25 and the demand pilots funded under WP26-27.

The pilots should exploit in particular open APIs and open-source components as developed by the supply side pilot, e.g. including the use of capabilities to implement specific communication management services (e.g. Open RAN security, RIC VNF…), up-take of existing standards and relevant open-source projects (e.g., Sylva, ANUKET, Nephio, CAMARA, etc.).

The pilot demonstrators should include testing, validation and demonstration of prototypes of agile virtualised network functions combined with ubiquitous mesh of integrated devices, computing and communication resources in operational environments, ensuring security and privacy, protection also in the face of emerging quantum threats, energy efficiency, transparency and control of the ecological footprint, as well as sustainable artificial intelligence services.

The pilot demonstrators are expected to re-use as far as possible existing open-source frameworks, i.e. open-source software governed by communities of contributors, that will provide key technology components for the operation of the 3C/ telco-edge-cloud supply-side large scale pilot. These open-source frameworks should be made available to the Open Euro Stack Support for Scale.

The proposals should ensure a high degree of participation of stakeholders from the relevant vertical sectors, with a particular attention to the involvement of SMEs, scale-ups and start-ups.

The pilots should establish a high degree of relations and collaborate with complementary EU funded research activities, like the Smart Networks and Systems Joint Undertaking (SNS JU) projects, the “Empowering AI across the continuum” and the “Sovereign edge/cloud infrastructure” R&I areas, the PPP virtual worlds, CCAM partnership as well as support of SW-defined vehicle initiative under the Chips JU.

HORIZON-CL4-2026-04-DATA-02: Open Internet Stack Sovereign Solutions (RIA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 7.00 and 10.25 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and

	selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 20.50 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 400 000 to allow 1/ cases where a given legal entity may receive FSTP under several grants (e.g. from different calls) 2/ reaching the maturity level for third party's project to ensure sustainability with multiple awards. FSTP may comprise up to a maximum of 80% of the total requested EU contribution.

Expected Outcome: The overall expected outcome is a large selection of Open-Source solutions that will be organised under the Open Internet Stack framework built under WP 2025. This will address the needs of both supply and demand side of the rich and diverse eco-system of 3C European providers and verticals. This topic will stimulate the emergence at European and global scale of solutions that are:

- Open source and made in Europe, supporting trust, and sovereignty, and delivering credible alternative choices for citizens, governments and companies including start-ups and SMEs.
- Paced for easy deployment by the rich European eco-systems of providers, integrators and verticals.
- Interoperable, standard-based, decentralised solutions for enabling network effect.

Scope: Proposals should address one or several of the following technology areas:

- Network and Transport technologies including for example routing and virtual private networks, survivable mesh technologies.
- Sovereign operating systems and firmware (including smartphones).

- Open Source software productivity and supply chain technologies such as federated forges, independent and cross-platform development framework.

Applicants should devise a plan for ensuring that the solutions are designed for efficient deployment, with pre-configured, modular components that facilitate integration by a wide range of users, including SMEs, public administrations, research and education and service providers.

Applicants should detail development, integration, testing, deployment, uptake and operation activities. Focus will be on Open Source solutions and their integration and adoption in vertical use cases, to ensure replicability of the results and portability in different areas.

Proposals are expected to demonstrate:

- That the proposed solution(s) has(ve) the technical maturity in terms of scalability, resiliency, advanced cryptographic protection (e.g. against emerging quantum threats via post-quantum cryptography), alignment with standards including for software and hardware supply chain and efficiency including environmental.
- That there is a community with critical mass that actively supports the development with or without associated business model.
- Evidence of use cases, interest and engagement from users and deployers of the solution.
- Credible path to be part of the Open Internet Stack in terms of cataloguing, searchability, availability through app-stores and alignment with EU regulation.

Applicants should detail any relevant previous projects on which the project will expand.

Applicants should detail their plan to creating synergies with other topics such as those in the WP25 Open Internet Stack, 3C, Virtual Worlds/Web4.0 as well as like-minded initiatives on the same solution perimeter.

Proposals should also detail their strategy for maintenance, cataloguing, marketing, communication as well as the relationship with to the “Open Internet Stack Support for Scale” topic.

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority (i.e. DG-CNECT and HaDEA) before the intended transfer or licensing takes place and the granting authority may up to four years after the end of the action object to a transfer of ownership or the exclusive licensing of results.

Financial support to third parties

If applicants opt for financial support to third parties, they should primarily target calls towards internet innovators and adopters of Open Source technologies. Applicants should provide the programme logic for the third-party projects, managing the projects lifecycle, and

provide the necessary technical and non-technical support: these tasks cannot be implemented using the budget earmarked for the financial support to third parties.

HORIZON-CL4-2026-04-DATA-03: Open Internet Stack Support for Scale (CSA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [98].

Expected Outcome: Projects results are expected to contribute to all the following outcomes:

- A common approach and hub for cataloguing, packaging, reviewing and validating Open Internet Stack components and projects.
- Long term viability by advising on Open Source sustainability and maintenance models including business and foundation; Promotion of the EU and Associated Countries as ideal location for Open Source Foundation sieges.

[98] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- A common branding, marketing, training and communication plan ensuring consistent perception and scale-up.

A close interleave with policy development through a dedicated policy sandbox.

Scope: Applicants should devise a plan for:

- Cataloguing solutions in a structured and easy to discover way
- Performing security and accessibility audits on the selected solutions under the Open Internet Stack.
- Screening and selecting European funded Open Source projects, including by exploring the relevant Horizon Europe programmes, and devising a strategy for the Open Internet Stack to become a central hub for those solutions.
- Establishing links and mutual support with national, multi-country and pan-European initiatives supporting Open Source sovereign solutions.
- Advising on sustainability models (both for and non-for profit), on standardisation, licencing schemes, or localisation/internationalisation
- Elaborating a common branding with associated marketing and communication tool
- Developing training material on these solutions that stresses their value in terms of EU legislation compliance (GDRP, DSA/DMA, CRA…), security (e.g. reference to security audits, list of dependencies), use cases, funding/business model, deployment requirements (server side, user side), link to repository and community resource (maintainers, community manager, discussion board…). Training material will be tailored to each target audience: Operators of infrastructure, Integrators, Government & verticals IT, end users.
- Implementing measures to identify/attract technology adopters (e.g. services providers, integrators, OSPOs in governments/verticals) to become promoters of these technologies.
- Developing sandbox tools for ensuring smooth compliance-by-design of the Open Internet Stack with relevant existing or futures EU policies.
- Supporting Open Source awards scheme and sustainability models after the action is finished.

We consider that proposals with an overall duration of typically 36 months would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other durations.

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority (i.e. DG-CNECT and HaDEA) before the intended transfer or

licensing takes place and the granting authority may up to four years after the end of the action object to a transfer of ownership or the exclusive licensing of results.

Achieving the end-to-end AI compute continuum

Proposals are invited against the following topic(s):

HORIZON-CL4-2027-04-DATA-03: New approaches for decentralized, federated and sustainable AI data processing (RIA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 17.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 35.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[99]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph

[99] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

	above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security . Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees. [100]
Technology Readiness Level	Activities are expected to start at TRL 3 and achieve TRL 6-7 by the end of the project – see General Annex B.

Expected Outcome: Project results are expected to contribute to developing new approaches, tools and techniques that overcome the obstacles of today's centralised AI compute techniques: limits in the availability of energy and AI compute capacity in centralised standalone environments, limited availability of types of AI chips, data quality and security and latency in AI data processing. The ultimate objective is to help overcome EU's AI compute capacity bottlenecks by offering alternative decentralised and sustainable AI compute models that enable exploitation of diverse hardware processing architectures and scaling approaches.

Scope: This topic focusses on technologies and techniques that enable AI data processing to leverage distributed compute resources across the cloud and edge computing continuum throughout the whole AI model lifecycle from data collection, training, fine-tuning, and deployment. To overpass today's state of the art in the area, the considered research areas include:

- To research on distributed, decentralised, and federated "compute continuum" enabled AI architectures beyond federated learning and integrating model compression tools and new mechanisms to enable AI data processing to scale across multiple and diverse computing infrastructures.

[100] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

- Development, deployment, and operation of AI workflows across heterogeneous and distributed infrastructures along the compute continuum (edge, cloud, HPC), including the possibility of incorporating innovative computing paradigms (neuromorphic and quantum computing) and hardware efficiency enhancements ((e.g., including in-memory computing, and hardware and software approximation).

- Novel methods and techniques to improve data availability and consistency for decentralised AI data processing. These consider tools to ensure data quality (e.g. prevention of data sets imbalance or inconsistency across distributed data sources), volume optimisation for data transfers across environments, and distributed data management, all while preserving data privacy and preventing data leaks (e.g. via advanced cryptographic protection such as post-quantum cryptography for resistance to emerging quantum threats).

- New tools and mechanisms to measure, monitor and improve end-to-end energy efficiency and sustainability of AI data processing across the compute continuum, including the exploration of energy and sustainability implications of the heterogeneous AI processing architectures and their impact in the compute infrastructure design and long-term sustainability.

Successful project proposals should showcase proposed developments in at least two complementary use cases in different domains. These use cases should demonstrate the value gained and potential impact of project achievements in real-world situations, as well as address key applications and sectors critical to Europe's competitiveness. Use cases should provide compelling examples and scenarios and cater for the reproducibility of results' added value and impact in additional economic sectors.

HORIZON-CL4-2027-04-DATA-09: Energy efficiency and sustainability of AI data processing in Data Centres (IA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 9.00 and 10.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 39.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In line with the "*restriction on control in innovation actions in critical*

	technology areas" delineated in General Annex B of the General Annexes, entities established in an eligible country but which are directly or indirectly controlled by China or by a legal entity established in China are not eligible to participate in the action.
Technology Readiness Level	Activities are expected to start at TRL 6-7 and achieve TRL 8 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome: Pilots for new technologies including demonstration sites which contribute to energy-efficient and sustainable AI data processing in data centres, reinforcing EU strategic autonomy and climate goals. Project results are expected to contribute to one or more of the following outcomes:

- Demonstrated innovations that substantially improve heat removal from high-power AI chips (e.g. direct on-chip cooling, advanced thermal interface materials, multi-scale thermal management), enabling higher performance without thermal throttling. This should lead to lower cooling energy needs and higher reliability for dense AI workloads.
- Prototypes of novel backup power systems (such as graphene-enhanced batteries) that operate with minimal cooling requirements, improving data centre resilience and enabling better use of renewable power.
- New methods and frameworks that optimise the entire data centre for energy-efficient AI processing. This includes intelligent workload scheduling and AI model optimisation techniques to reduce energy use (e.g. carbon-aware job scheduling and power capping to cut energy demand and peak temperatures), as well as designs for integrating on-site/off-site renewables and waste-heat reuse.

Outcomes should demonstrate potential for improved power usage effectiveness and utilisation of waste heat in external applications, aligned with European targets for carbon-neutral heating/cooling.

Scope: Actions should address one or more of the following development areas:

1. Direct on-chip cooling and thermal management, including novel and innovative cooling techniques applied at chip and module level (direct liquid cooling, heat spreaders, thermal interface materials, and advanced packaging) and multi-scale thermal management techniques.

2. Energy-efficient power backup and storage systems: Innovations in early-stage energy storage concepts (graphene-enhanced batteries, supercapacitors, and other emerging battery chemistries) and approaches for net-zero backup.

3. Sustainable data centre architectures and AI workload optimization: addressing AI-driven workload scheduling, adaptive power management, dynamic resource allocation and integration of data centre heat capture and reuse.

4. Materials research for energy efficiency: Projects to make use of existing research in new materials and components supporting energy efficiency and thermal management, and to employ these for data centres benefit.

5. Optimisation of data centre operation and functioning: explore AI solutions to optimize the Data centre functioning, computing architecture, and virtualization, minimizing its carbon and environmental footprint.

6. Integration of data centres into energy systems and the wider region: including solutions that integrate Data centres into energy system planning and operation.

In addition, actions should establish open pilot demonstration sites to test and integrate research results, and to demonstrate, benchmark, and disseminate findings among relevant industrial stakeholders, including the European data centre and colocation industry, cloud providers, and edge computing operators. These pilot sites should furthermore serve as European reference points for showcasing breakthroughs and cutting-edge technologies for energy-efficient and sustainable data centres developed under this topic, acting as models for technology uptake across the European data centre industry.

Projects funded under this topic are encouraged to build synergies and leverage their results with funded projects from Cluster 5 HORIZON-CL5-2027-05-D4-06: Thermal energy optimisation and waste heat recovery of high energy demand IT rooms in buildings or small edge data centres.

Data (under AI, Data and Robotics partnership)

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-04-DATA-06: Efficient and compliant access to and use of data (IA) (AI, Data and Robotics partnership)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 11.50 and 23.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

Indicative budget	The total indicative budget for the topic is EUR 46.50 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway, associated countries and OECD countries. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or a non-eligible country entity, shall not participate in the action.
Technology Readiness Level	Activities are expected to start at TRL 6-7 and achieve TRL 8 by the end of the project – see General Annex B.

Expected Outcome: Project results are expected to contribute to the following outcomes:

- Lead to the development of secure, compliant and adaptive systems that improve the availability, accuracy, privacy and interoperability of data across the Union.
- Deliver advanced, AI-driven compliance technologies and regulatory tools that reduce administrative burdens, promote regulatory efficiency, and facilitate the implementation of the Data Union Strategy, a Single Market for data, Common European Data Spaces, the European Business Wallet, and the Digital Justice Strategy for 2025-2030.
- Enable more agile regulatory processes, foster mutual recognition of compliance efforts across borders and cross-border cooperation, support interoperability between Member States, and enhance transparency and trust. They will position the Union at the forefront of regulatory innovation, while strengthening the functioning, resilience, competitiveness, and digital leadership of the Single Market.

- Enhance the excellence and competitiveness of companies, professionals, and public administrations by providing innovative, automated solutions to navigate and comply with Union rules seamlessly across borders.

- Enhance public services and strengthen the competitiveness and digital sovereignty of the EU by improved availability and use of high-quality real and synthetic data to train AI systems more effectively.

Scope: The scope of this topic is to support the deployment of secure, interoperable, and scalable data management systems, ensuring seamless cross-sector data integration, automation of key processes, and compliance with EU frameworks.

The actions should deliver high-quality, well-structured, secure and compliant data, tailored to evolving societal, industrial, research and public sector needs, underpinning key EU strategies, including the Data Union Strategy, the Apply AI Strategy, the Digital Justice Strategy, and the development of Common European Data Spaces, Data Labs and EuroHPC systems (including the AI Factories). The developed methods, technologies and tools should ensure that data is effectively shared between sectors, disciplines, and participating countries, and that the data is reliable, traceable, and fit for purpose.

The proposal should clearly state (in the abstract and in the introduction) which of the following two areas it addresses. A proposal can address both areas, but it should indicate one of them as the main focus of the proposal, as it will be evaluated accordingly under that area:

- Area 1: The actions under this area should support the development and deployment of ***advanced, AI-driven compliance technologies and solutions that automate data transactions and key regulatory processes, reduce administrative burdens, and facilitate seamless adherence to EU rules***. This includes RegTech/GovTech//LegalTech applications such as digital tools offering real-time compliance guidance, automated rule-drafting assistants for policymakers, and multilingual chatbots providing regulatory support to businesses and professionals. Predictive analytics and risk-based approaches should allow tailored compliance pathways, while integration with national systems and the Single Digital Gateway should promote cross-border mutual recognition and application of the Once-Only Principle. Public administrations should be equipped with automated compliance assessment tools, real-time analytics dashboards, and interoperability frameworks to enhance and streamline regulatory oversight and cooperation. The technologies and solutions should contribute to the principles of fairness, accountability and transparency in AI-driven compliance solutions, including traceability and explainability of automated actions.

- The solutions under Area 1 should adhere to open technical standards, ensuring scalability, inclusiveness, and co-development with private and public stakeholders. Robust cybersecurity, trustworthy AI, trust safeguards, security and privacy cryptographic protection, including via post-quantum cryptography, should be embedded, aligning with EU data protection and digital identity frameworks. Artificial intelligence and machine learning models should be harnessed, to the extent

possible/reasonable, to enable data-driven feedback loops that support continuous policy learning, allowing regulators to monitor rule implementation, identify unnecessary burdens, and simplify legislation based on real-time evidence. Where appropriate, the actions under this Area should build on and integrate the privacy-enhancing (including anonymization) technologies developed under earlier topics in the Horizon Europe programme.

- Area 2: The actions under this area should focus on the ***design and deployment of secure, scalable, and adaptive data management systems that automate key data processes***, such as data curation, metadata tagging, ontology management and discovery, labelling, annotation, and quality control, developing and adapting appropriate AI methods and tools for these specific tasks. These systems should facilitate seamless integration and sharing of data across sectors and disciplines, ensuring interoperability, data provenance, data privacy and handling secured against emerging quantum threats via post-quantum cryptography, and compliance with applicable EU legal frameworks. Special emphasis is on enhancing data accuracy, representativeness, and relevance, particularly for use cases in industry, public services, citizen engagement, and the development of trustworthy AI applications, as well as the Common European Data Spaces. The development of such high-quality, semantically rich datasets will be essential to unlock the full potential of AI across domains.

- Furthermore, the actions under Area 2 may also support the generation and use of high-quality synthetic data, including spatial synthetic data, to complement real-world datasets while preserving data privacy via advanced, state-of-the-art cryptographic protection. This may include, among others, the use of AI-enabled **generative graphics pipelines** to automate the creation of large-scale simulated environments and the application of **parallelised and/or neuromorphic computing techniques** to train AI models and artificial agents efficiently.

The actions under both areas should take into account the work of the Data Spaces Support Centre, particularly the blueprint for common European data spaces, and build synergies with related Union initiatives such as AI Factories, European Blockchain Services infrastructure, and the European Business Wallet, as well as with sector-specific Common European Data Spaces, and EU Digital Identity Wallet large scale pilots. Close collaboration with relevant European Partnerships, stakeholders, including industry, public administrations, and research organisations, will ensure that the systems meet the practical needs of data users while fostering innovation, competitiveness, and digital sovereignty within the Single Market.

Destination: Achieving open strategic autonomy in digital and emerging enabling technologies

Leadership in frontier technologies such as Artificial Intelligence, Quantum, Photonics and Semiconductors is essential to Europe's economic security and global competitiveness. Building on the ambition of becoming the "AI Continent" and in line with the concrete actions devised in the Apply AI Strategy[101], the EU will consolidate its world-class research ecosystem through initiatives like the RAISE network of AI science labs, the development of safe and efficient frontier AI models, and the deployment of next-generation AI agents and robotics in strategic sectors. Photonics and semiconductor technologies will remain critical enablers for the digital and green transitions, with investments in advanced integrated photonic devices and resilient semiconductor ecosystems ensuring Europe's capacity to innovate, scale and compete globally. Foresight and support to emerging materials and technologies will further strengthen Europe's position at the cutting edge to make sure Europe's does not miss the emergence of new disruptive technologies, aligning with the Draghi report and the Competitiveness Compass to secure a cohesive, sovereign and future-proof European industrial base.

Legal entities established in China are not eligible to participate in both Research and Innovation Actions (RIAs) and Innovation Actions (IAs) falling under this destination. For additional information please see "Restrictions on the participation of legal entities established in China" found in General Annex B of the General Annexes.

AI Continent

AI SCIENCE
Proposals are invited against the following topic(s):

HORIZON-CL4-2026-04-DIGITAL-EMERGING-01: Apply AI: Pilot of the "Science for AI" Pillar of RAISE ("Resource for AI science in Europe") (RIA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 17.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 17.00 million.
Type of Action	Research and Innovation Actions
Eligibility	The conditions are described in General Annex B. The following

[101] COM(2025)723 Apply AI Strategy

conditions	exceptions apply: Subject to restrictions for the protection of European communication networks.
Technology Readiness Level	Activities are expected to start at TRL 2 and achieve TRL 4 by the end of the project – see General Annex B.
Award criteria	The criteria are described in General Annex D. The following exceptions apply: The following additions to the general award criteria apply: Quality and Efficiency of Implementation: • Scientific Excellence: the scientific excellence of each participant will be assessed based on the scientific credentials of its senior AI researchers. A clear majority (at least 60%) of the participant's senior AI researchers should demonstrate substantial scientific excellence. Examples of evidence for scientific excellence in Artificial Intelligence include, but are not limited to, consistent publications in top-tier venues; significant research impact as reflected by recognised metrics such as the h-index (the number of publications that have each been cited at least that many times); recognized real-world applications; receipt of prestigious awards and substantial competitive grants; membership on editorial boards of leading AI journals; and invited talks at internationally recognized AI conferences. • Infrastructure: each participant should possess dedicated premises and infrastructure necessary for high-quality AI research, along with administrative and technical support services. • Size: each participant should have at least ten distinct AI research groups. Each research group should typically comprise a minimum of five researchers, including at least one senior AI researcher. Alternative configurations demonstrating equivalent capacity (approximately 50 total dedicated researchers in AI) will also be considered acceptable. • Legal Structure: each participant should have the requisite legal framework enabling them to effectively manage personnel, negotiate and execute contracts, and manage intellectual property rights.
Legal and financial set-up of the Grant	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action,

Agreements	object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome: This pilot supports the Apply AI Strategy[102], particularly its research and innovation efforts, which aims to advance core AI capabilities, especially in frontier AI, and support fundamental AI research. The initiative will pool strategic resources to push the technological frontiers of AI and drive scientific breakthroughs, ensuring that the project contributes to the EU's goal of maintaining European leadership in AI research. Project results are expected to contribute to all of the following expected outcomes:

- Set up a network of excellent AI Labs in the EU and Associated Countries, raising visibility and strengthening collaboration in European AI research
- Establish a model of cooperation among these labs and support the development of a strategic research agenda for fundamental research in AI.
- Ensure that the network operates as a virtual institute across Europe, pooling resources and expertise.
- Develop synergies with the AI in science efforts in RAISE.
- Stimulate and support world-class research in AI, both fundamental and applied research. Building on Europe’s research strength, attract collaboration with industry and excellent AI talent.

Scope: Ensuring Europe's technological sovereignty in AI requires reinforcing and leveraging Europe's strengths, particularly its world-class AI research community.

The selected consortium should be composed by leading European AI research institutions. These AI research institutes should be entities with legal structure, dedicated facilities and, a significant number of research teams focusing on AI research. This category also includes multidisciplinary research institutions that host AI-focused branches meeting these criteria. The consortium will pilot a network of excellent European AI research institutes that will collaboratively address fundamental AI research topics, pushing the frontier of the domain. Participants will cooperate within a virtual institute, attracting talents, stimulating industrial initiatives, providing inputs for moonshot projects and developing research agendas for the ones retained by the EC. A substantial share of the project effort should be dedicated to advancing research.

To achieve these objectives, the consortium will undertake a range of dedicated activities:

- The project will draw an ambitious strategic research agenda towards the next frontier in AI (in 5 years), including explicit targets and milestones;

[102] COM(2025)723 Apply AI Strategy

- The coordination of the participating institutes and their research in AI will be driven by a world class AI research program. The defined programmes will guide collaborative efforts and ensure a cohesive approach to advancing fundamental AI. Collaboration will, among other, be reinforced by jointly supervised PhDs and Postdocs.

- The implementation of a world class AI research program, supporting PhDs and Postdocs as well as jointly agreed collaborative research projects, functioning as a distributed "European AI Institute," reflecting the RAISE initiative's long-term vision and enhancing collaboration.

This topic will bring together excellent AI research Institutes in Europe to further develop basic science in AI. Given the importance of such consortium, every participating institution will have to demonstrate its excellence in AI Research through a number of objective criteria.

To ensure openness, during the first year, the project will establish a call for expressions of interest to identify additional leading European AI research labs and individual experts that may collaborate with the project through joint activities or other forms of cooperation to support the expected outcomes and the dedicated activities described in this topic. Proposals should describe the type of actions planned for these collaborations. Appropriate budget and effort should be allocated to ensure that such collaborations complement the network's expertise and strengthen the implementation of the roadmap.

This initiative will also work in close collaboration with other initiatives in the European AI landscape, such as existing Networks of Excellence, AI societies and associations, and with the fundamental research activities in AI taking place in the horizontal call HORIZON-RAISE and in the EIC pathfinder initiatives to be integrated in RAISE. All proposals are expected to allocate tasks for cohesion activities with the CSA HORIZON-CL4-2025-03-HUMAN-18: GenAI4EU central Hub.

The project selected in this topic should link to the resources offered by the AI Factories and the Data Labs and exploit the various tools offered by the AI-on-demand-platform to share the result and further develop the community.

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority (i.e. DG-CNECT and HaDEA) before the intended transfer or licensing takes place and the granting authority may up to four years after the end of the action object to a transfer of ownership or the exclusive licensing of results.

HORIZON-CL4-2027-04-DIGITAL-EMERGING-11: EU Frontier AI Initiative: Developing frontier AI solutions that are safe and computationally efficient within Apply AI (RIA)

Call: DIGITAL	
Specific conditions	
Expected EU	The Commission estimates that an EU contribution of around EUR 44.00

contribution per project	million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 44.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[103]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security . Entities established in an eligible country, but which are directly or indirectly controlled by China

[103] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

	or by a legal entity established in China cannot submit guarantees.[104]
Technology Readiness Level	Activities are expected to start at TRL 2 and achieve TRL 4 by the end of the project – see General Annex B.

Expected Outcome: The Apply AI Strategy[105] also seeks to bolster EU capabilities and achieve excellence in AI to support the development of European frontier models. As part of the Frontier AI Initiative, which brings together Europe's leading actors in the field, this topic will support the development of sovereign frontier AI ensuring safety by design. This topic directly contributes to the Apply AI Strategy. Project results are expected to contribute to all of the following expected outcomes:

- Strengthened European capabilities in the development of frontier AI models.
- Improved computational efficiency of frontier AI models, resulting in reduced computational costs.
- Enhanced safety of advanced AI systems based on frontier AI models through the development and implementation of safe-by-design principles and/or AI agents acting as safety evaluators.

Scope: To advance developments of frontier AI models towards highest-level performance, while ensuring energy efficiency, addressing computational constraints, and strengthening safety. The approach of this topic is twofold. First, it aims to advance the AI field through the development and training of a frontier AI model. The AI model should demonstrate state-of-the-art performance, have multimodal capabilities, and be optimized for agentic AI capabilities such as tool use, reasoning, and autonomous problem-solving. Second, this topic supports research on comprehensive methods to reduce the computational demands of frontier AI models and to ensure their safety, including technical methodologies such as automated testing and interpretability.

The primary drivers behind computational efficient AI systems are the urgent challenges posed by the growing energy footprint of AI and current computational limitations. Modern

[104] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

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AI models, especially frontier AI models, require substantial computational resources, with a significant impact in the environment. Additionally, they create barriers to entry to those interested in advancing the AI field. Key research areas include compression and distillation techniques aimed at reducing the complexity of large AI models. Innovations in AI architectures are also relevant, with a focus on innovative models that significantly lower computational demands for training and inference. Further, algorithmic approaches aimed at minimizing computational load during pre-training, post-training, and inference can also be considered.

Ensuring the safety of AI systems is essential, especially as AI models become increasingly sophisticated and pervasive. Potential research areas to be considered include addressing misalignment, particularly the unintentional misalignment of large AI models. Work in this area could explore methods to detect and mitigate sophisticated misbehaviour, such as alignment faking, reward hacking of human oversight, and encoded reasoning in chain-of-thought (CoT). Additionally, research could focus on enhancing robustness against adversarial attacks, jailbreaks, and backdoors. Further potential areas for innovation include advancing AI models transparency and interpretability. Safety research could also consider risks that may arise when embedding frontier models within agentic AI frameworks, significantly contributing to the trust and safe adoption of powerful AI solutions.

This topic contributes to the EU Frontier AI initiative. The project should establish strong links with the Resource for AI Science in Europe (RAISE), ensuring that its priorities inform the research topics addressed. Activities are expected to involve the European AI research community and attract and retain top AI talent working on frontier models and related areas.

All proposals are expected to incorporate mechanisms for assessing and demonstrating progress, including qualitative and quantitative KPIs, benchmarking, and progress monitoring. When possible, proposals should build on and reuse public results from relevant previous funded actions. Communicable results should be shared with the European R&D community through the AI-on-demand platform.

The project selected in this topic should link to the resources offered by the AI Factories and the Data Labs. Where relevant, it could also establish links with European companies developing frontier AI models.

All proposals are expected to allocate tasks for cohesion activities with the European Partnership on AI, data, and robotics (ADRA) and the CSA HORIZON-CL4-2025-03-HUMAN-18: GenAI4EU central Hub.

Apply AI
Proposals are invited against the following topic(s):

HORIZON-CL4-2026-05-DIGITAL-EMERGING-02: Next-Generation AI Agents for Real-World Applications in the Apply AI sectors (RIA) (Partnership in AI, Data and Robotics)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 19.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 38.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[106]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees

[106] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

	positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[107]
Technology Readiness Level	Activities are expected to start at TRL 2 and achieve TRL 5 by the end of the project – see General Annex B.

Expected Outcome: While today's AI agents still have limited capabilities, advances in model architecture, memory, reasoning, and autonomous behaviour are paving the way to unlocking their potential across economic sectors. The Apply AI Strategy[108]acknowledges this trend and the need to advance research on next-generation AI agents. Project results are expected to contribute to some of the following expected outcomes:

- Significant improvements in the autonomy, robustness and reliability of AI agents through advanced planning mechanisms, memory management, and reasoning capabilities.
- Innovative multi-agent frameworks and protocols demonstrating effective decentralized coordination and collaboration among multiple AI agents beyond the capabilities of individual agents.

Scope: Next-generation AI agents are autonomous systems powered by large AI language models (e.g., large language models or large multimodal models), that can plan, utilize tools and perform actions autonomously to achieve specified goals based on high-level instructions. The large AI model acts as the agent's "brain," capable of interpreting instructions, generating plans, and using tools. This capability enables agents to autonomously plan and adapt behaviour in real-time to accomplish complex, multi-step tasks. AI Agents hold significant promise in numerous applications areas such as data analytics and coding.

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107 The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

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Effective AI agents require careful design, incorporating structured planning and reasoning methods to manage complex tasks, and be equipped with appropriate validation and monitoring techniques. Multi-agent collaboration frameworks further enhance capabilities by enabling structured interactions among multiple agents.

Key aspects in designing effective AI agents include robust planning, reasoning, and search mechanisms that allow agents to approach complex tasks by breaking them down into structured subgoals. Effective memory and state management are necessary to maintaining coherent long-term interactions, achieved through a balanced integration of short-term and external long-term memory solutions. Moreover, integrating external tools and APIs is essential for overcoming limitations in large AI models, enhancing agent performance in tasks requiring accuracy and reliability.

Potential research areas include enhancing AI agent autonomy through advanced self-planning and self-optimization capabilities, enabling agents to improve their decision-making and strategic planning. Other research directions include innovation in memory-augmented AI agents to facilitate robust long-term reasoning and lifelong learning; developing advanced multi-agent frameworks specifically tailored for collaborative agents, including research on AI agent frameworks based on mixed AI architectures, and advancing multimodal reasoning capabilities to enable real-world applications.

All proposals are expected to incorporate mechanisms for assessing and demonstrating progress, including qualitative and quantitative KPIs, benchmarking, and progress monitoring. When possible, proposals should build on and reuse public results from relevant previous funded actions. Communicable results should be shared with the European R&D community through the AI-on-demand platform.

Projects selected in this topic should link to the resources offered by the AI Factories, including the Data Labs. The results may be validated in the Testing and Experiment Facilities and further deployed via the European Digital Innovation Hubs (EDIHs) and will contribute to the Apply AI strategy.

This topic implements the co-programmed European Partnership on AI, data, and robotics (ADRA), and all proposals are expected to allocate tasks for cohesion activities with ADRA and the CSA HORIZON-CL4-2025-03-HUMAN-18: GenAI4EU central Hub. Proposals should also build on or seek collaboration with relevant projects and develop synergies with other relevant International, European, national, or regional initiatives.

HORIZON-CL4-2027-04-DIGITAL-EMERGING-04: Apply AI: Challenge-Driven AI Innovation Booster in Apply AI prioritised sectors (RIA) (Partnership in AI, Data and Robotics)

Call: DIGITAL
Specific conditions

Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 14.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 42.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[109]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security . Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot

[109] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

	submit guarantees.[110]
Technology Readiness Level	Activities are expected to start at TRL 2 and achieve TRL 5 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering different sectors, grants will be awarded to applications not only in order of ranking, but also to at least one proposal that is the highest ranked, within the healthcare, advanced manufacturing and in-vehicle autonomous driving sectors respectively, provided that the proposals attain all thresholds.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries must provide financial support to third parties. The support to third parties can only be provided in the form of grants. FSTP grants may be provided to either a single SME or to a small team of legal entities. Where provided to a small team, the coordinator (lead applicant) must be an SME and other recipients of financial support must be either an SME, a research organisation, and/or public body secondary or higher education establishment. **FSTP amounts:** • The maximum amount to be granted per FSTP grant (whether provided to one legal entity or a team of legal entities) is EUR 300,000 in stage 2 and EUR 2,250,000 in stage 3. • The amount of EUR 300,000 in stage 2 is justified as the challenge and corresponding tasks defined for this stage must be complex enough in order to take the best and most informed decision in the selection for the next stage based on a convincing

[110] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

	technical prototype/proof of concept that reaches sufficient level of performance in terms of scale and maturity. • The amount of EUR 2,250,000 in stage 3 is justified by the ambition of reaching significant technology progress and innovation, defined in the expected outcome of the call, including the need for the selected projects to scale their solutions to the maturity expected. The maximum amount to be granted to each third party is EUR 2,550,000. In accordance with Annex 5 of the grant agreement "SPECIFIC RULES FOR CARRYING OUT THE ACTION (— ARTICLE 18) *Implementation in case of restrictions due to strategic assets, interests, autonomy or security of the EU and its Member States*", by default beneficiaries must ensure that, *inter alia*, no recipient of FSTP is (i) *established* in a country which is not an eligible country (as identified in the specific conditions for eligibility) or (ii) *controlled* by such countries or entities from such countries (directly or indirectly as per the specific conditions for eligibility). In line with the possibility for the granting authority to agree otherwise, as concerns *control* of SMEs or private research organisations that participate as recipients of FSTP, beneficiaries must only ensure that such entities are not directly majority-owned (i.e., more than 50% of the capital) by entities established in non-eligible countries.

Expected Outcome: The Apply AI Strategy[111] proposes a comprehensive set of measures to notably harness the transformative potential of AI. It lays down targeted measures to boost AI use in key strategic sectors of the EU economy including healthcare, mobility and manufacturing for example. With challenges designed to spark breakthroughs in such strategic sectors, the current topic will directly support key activities of the Apply AI Strategy.

Project results are expected to contribute to all of the following expected outcomes:

- Significant technological progress and innovation in Apply AI Strategy's prioritised sectors driven by challenge-oriented, AI-powered solutions.
- Increase competitiveness and visibility of the relevant AI community within key application sectors, and promote collaborative approaches for AI development in these sectors, fostering the ecosystem.

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- Increase adoption of AI technologies across the following three key application sectors: healthcare, advanced manufacturing (including AI-powered robotics) and in-vehicle autonomous driving.

Scope: The Challenge-Driven AI Innovation Booster aims to drive significant technological progress and innovation in Apply AI prioritised sectors through challenge-oriented, AI-powered solutions. This initiative seeks to boost Europe's developer community and the adoption of powerful, trustworthy AI solutions in three strategic sectors such as:

- In healthcare - advanced AI will accelerate diagnostics and treatment plans, enhance robotic surgery, or improve patient care through predictive analytics.
- In advanced manufacturing - advanced AI will optimize production processes, improve quality control and product design, or enable predictive maintenance.
- In autonomous driving - advanced AI will enhance vehicle safety, improve navigation systems, or optimize traffic management. Provided sufficient quality of the proposals received, at least one selected project will focus on in-vehicle autonomous driving applications, in line with the Automotive Action Plan, ensuring coordination with the announced Connected and Autonomous Vehicle Alliance.

Each proposal should address exclusively on one of the three key sectors mentioned above, and clearly indicate which sector they address.

It is expected to focus primarily on the definition and organization of a multi-stage competition in the chosen sector, as well as on the accompanying support to the SMEs/teams taking part in each of the challenges.

User-industry companies from the strategic sector targeted by the proposal should be core partners in each consortium. They should demonstrate a genuine interest in the project results and therefore support the challenge participants to reach the most powerful and exploitable results benefiting their industry. The expected results are pre-competitive, but the proposal must include a draft exploitation plan focused on how the solutions developed by the third parties will be taken up, with support from the user-industry partners for their future exploitation.

The consortium leading the project is responsible for the various stages of the challenges. This consortium should provide the necessary support resources during each stage of the competition (including technical assistance and business support to develop an exploitation strategy) and, most importantly, the consortium should ensure that the teams competing for and receiving financial support to third parties have access to relevant data to fine-tune models and build high-impact solutions meeting industry needs.

Proposals should be driven by impactful use-cases where advanced AI can make the difference: a number of industries from the targeted sector are expected to join forces to define challenging problems to solve with advanced AI solutions, which then drive the rest of the project. Based on such challenges, each project consortium should organize a multi-staged

competition with an increasing level of complexity. In the different stages (see below), third parties, either single SMEs or small teams of organisations led by an SME, compete to address the challenges with advanced AI solutions.

For each proposal:

Stage 1 - Open call: The consortium launches an open call for proposals. A challenge, open to all, will allow the selection for Stage 2 of the 10 highest-ranked proposals according to a pre-defined selection process and criteria. Each solution is expected to be submitted either by a single SME, developer of advanced AI solutions, or a small team of organizations led by such SME.

Stage 2 - Competition among Stage 1 winners: The 10 teams or organisations selected from Stage 1 receive a EUR 300,000 FSTP grant each in accordance with their successfully selected proposal (which addresses the tasks and challenges defined for this stage by the consortium). At the end of Stage 2, the 4 highest-ranked solutions will be selected for the next stage according to a pre-defined selection process and criteria.

Stage 3 – Grand finale (Competition among Stage 2 winners): The 4 teams or organisations selected from Stage 2 receive EUR 2,250,000 FSTP grants each in accordance with their successfully selected proposals to address the tasks and challenges for this stage. In conjunction, they will prepare for the grand finale that will identify the best performing solution at the end of Stage 3 according to the evaluation methodology defined by the consortium.

The consortium should define measures to support the winners in maximizing the impact and uptake of their solutions. For instance, after the end of the FSTP grant, the best-performing team could be offered the opportunity to conclude partnerships or contracts with the user industries leading the consortium. Measures to support the broad uptake of their solutions in the whole sector should also be considered.

Such a multi-staged scheme is expected to be implemented in parallel by the projects funded under this action, each addressing a different sector.

Each proposal, involving several major industry players, should define a clear methodology to implement the various steps of the approach, define the specifications of the stages of the competitions, timelines, targets, KPIs, and propose a solid evaluation methodology including evaluation criteria. The main information should be in the proposal, in addition to all mandatory requirements as concerns financial support to third parties. The beneficiaries will also be in charge of implementing the evaluation methodology and providing the necessary infrastructure/technical support for the participants in the challenges. The consortium members are also responsible for ensuring high visibility of the competitions.

The projects selected from this call, each addressing one of the three targeted sectors, are expected to collaborate among themselves to make economies of scale in sharing best practices, defining processes for organizing the challenges, ensuring efficient monitoring, organizing dissemination and communication activities, etc. Such collaboration among the

linked actions is expected to be formalized by a collaboration agreement after the grant agreement signature.

For each proposal, a total of EUR 3,000,000 is foreseen to be distributed among the winners of Stage 1, in the form of FSTP grants, to prepare for Stage 2. In addition, EUR 9,000,000 is foreseen to be distributed among the winners of Stage 2, in the form of FSTP grants, to prepare for Stage 3 of the challenge. The proposal is expected to make the case for such investment in defining the objectives and expected results. This amount will be distributed equally among the 4 winning teams of Stage 2, who are expected to develop further their solutions and compete for Stage 3.

Visibility would be important; therefore, dissemination and communication campaigns are key. The proposers are also encouraged to seek sponsorship, which would be key for the visibility and prestige of their challenge and to attract the best developers from the eligible countries to compete, particularly SMEs, alone or within a team competing for the challenges.

All proposals are expected to incorporate mechanisms for assessing and demonstrating progress, including qualitative and quantitative KPIs, benchmarking, and progress monitoring.

When possible, proposals should build on and reuse public results from relevant previous funded actions. Communicable results should be shared with the European R&D community through the AI-on-demand platform and, if necessary, other relevant digital resource platforms to bolster the European AI, Data, and Robotics ecosystem by disseminating results and best practices.

This topic implements the co-programmed European Partnership on AI, data, and robotics (ADRA), and all proposals are expected to allocate tasks for cohesion activities with ADRA and the CSA HORIZON-CL4-2025-03-HUMAN-18: GenAI4EU central Hub.

Proposals should also build on or seek collaboration with relevant projects and develop synergies with other relevant International, European, national, or regional initiatives. Projects selected in this topic will link to the resources offered by the AI Factories, including the Data Labs. The results may be validated in the Testing and Experiment Facilities and further deployed via the European Digital Innovation Hubs (EDIHs) and will contribute to the Apply AI strategy.

HORIZON-CL4-2026-04-DIGITAL-EMERGING-19: Challenge-Driven GenAI4EU Booster in Apply AI prioritised sectors (RIA) (AI/Data/Robotics Partnership)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 15.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and

	selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 45.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[112]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[113]

[112] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

[113] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its

Technology Readiness Level	Activities are expected to start at TRL 3 and achieve at least TRL6 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering the different strategic sectors, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked within (i) the aerospace sector, (ii) the pharma/drug development sector, and (iii) the telecommunication sector, provided that the applications attain all thresholds.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries must provide financial support to third parties. The support to third parties can only be provided in the form of grants. FSTP grants may be provided to either a single SME or to a small team of legal entities. Where provided to a small team, the coordinator (lead applicant) must be an SME and other recipients of financial support must be either an SME, a research organisation, and/or public body secondary or higher education establishment. **FSTP amounts:** • The maximum amount to be granted per FSTP grant (whether provided to one legal entity or a team of legal entities) is EUR 250,000 in stage 2 and EUR 2,000,000 in stage 3. • The amount of EUR 250,000 in stage 2 is justified as the challenge and corresponding tasks defined for this stage must be complex enough in order to take the best and most informed decision in the selection for the next stage based on a convincing technical prototype/proof of concept that reaches sufficient level of performance in terms of scale and maturity. • The amount of EUR 2,000,000 in stage 3 is justified by the ambition of reaching significant technology progress and innovation, defined in the expected outcome of the call, including

infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

	the need for the selected projects to scale their solutions to the maturity expected. The maximum amount to be granted to each third party is EUR 2,250,000 In accordance with Annex 5 of the grant agreement "SPECIFIC RULES FOR CARRYING OUT THE ACTION (— ARTICLE 18) *Implementation in case of restrictions due to strategic assets, interests, autonomy or security of the EU and its Member States*", by default beneficiaries must ensure that, *inter alia*, no recipient of FSTP is (i) *established* in a country which is not an eligible country (as identified in the specific conditions for eligibility) or (ii) *controlled* by such countries or entities from such countries (directly or indirectly as per the specific conditions for eligibility). In line with the possibility for the granting authority to agree otherwise, as concerns *control* of SMEs or private research organisations that participate as recipients of FSTP, beneficiaries must only ensure that such entities are not directly majority-owned (i.e., more than 50% of the capital) by entities established in non-eligible countries.

Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Significant technology progress and innovation through challenge-driven approach in the fields of aerospace, pharma/drug development or telecommunication networks.
- Increased competitivity and visibility of the Generative AI community in Europe, in demonstrating their capability to achieve challenging tasks within the aerospace, pharma/drug development or telecommunication sectors.
- Increased adoption of Generative AI in aerospace, pharma/drug development or telecommunication networks through tangible progress and achievement demonstrated via the challenge-driven process.

Scope: Generative AI (GenAI) promises to transform most industry sectors. This challenge-driven initiative aims to boost both Europe's developer community and the adoption of powerful trustworthy generative AI solutions in the strategic sectors of aerospace, pharma/drugs and telecommunication networks, key for their competitiveness. In pharmaceuticals, it can, for instance, accelerates drug design by rapidly creating target-specific molecules, reducing development time from years to seconds, and potentially preventing prolonged health crises like COVID-19. In aerospace, generative AI can for instance optimize aircraft design, streamline manufacturing processes, predict maintenance needs through sensor data analysis, route optimisation, and enhance pilot training with diverse, realistic simulations. By embracing generative AI, telecom companies can position

themselves at the forefront of a new era of intelligent and automated telecommunications. Specific use-cases include for instance network management, network optimization, network slicing, network healing, predictive maintenance, network mapping and optimization.

Each proposal should focus exclusively on one of the three key sectors mentioned above: aerospace, pharma/drug development, or telecommunications and clearly specify which sector it addresses. Each proposal is expected to focus primarily on the definition, the organization of a multi-stage competition in the chosen sector, as well as the accompanying support to the companies/teams taking part in the challenges, and related activities to maximise the impact of the action.

User industry companies from the strategic sector targeted by the proposal should be core partners in the consortium. They should demonstrate a genuine interest in the projects results and therefore support the challenge participants - in order to reach the most powerful and exploitable results benefitting their industry. The expected results are pre-competitive but the proposal must include a draft exploitation plan outlining commitments on future exploitation. The consortium is responsible for the various stages of the challenges and should provide the necessary support resources during each stage of the competition, including technical assistance and business support to develop an exploitation strategy, but most importantly, provide to the competing FSTP recipients the data necessary to fine-tune models and build powerful solutions meeting industry needs.

Proposals should be driven by impactful use-cases where generative AI can make the difference: a number of industries from the targeted sector are expected to join forces to define challenging problems to solve with GenAI solutions, which then drive the rest of the project. Based on such challenges, the consortium organises a multi-staged competition with an increasing level of complexity. In the different stages (see below), third parties, either single SMEs or small team of organisations led by an SME, compete to address the challenges with GenAI solutions.

For each proposal:

- **Stage 1 - Open call:** The consortium launches an open call for proposals. A challenge, open to all, will allow to select for Stage 2 the 20 highest-ranked proposals, according to a pre-defined selection process and criteria. Each solution competing for the challenge can be submitted either by a single SME, developer of GenAI solutions, or a small team of organisations led by such SME

- **Stage 2 - Competition among Stage 1 winners:** The 20 teams or organisations selected from Stage 1 receive EUR 250 000 FSTP grant each in accordance with their successfully selected proposal (which addresses the tasks and challenges defined for this stage by the consortium). At the end of Stage 2, the 4 highest ranked solutions will be selected for the next stage according to a pre-defined selection process and criteria.

- **Stage 3– Grand finale (Competition among Stage 2 winners):** The 4 teams or organisations selected from Stage 2 receive EUR 2,000,000 FSTP grants each in

accordance with their successfully selected proposals to address the tasks and challenges for this stage. In conjunction, they will prepare for the grand finale that will identify the best performing solution at the end of Stage 3 according to the evaluation methodology defined by the consortium.

The consortium should define measures to support the winners in maximizing the impact and uptake of their solutions. For instance, after the end of the FSTP grant, the best performing team could be offered the opportunity to conclude partnerships or contracts with the user industries leading the consortium. Measures to support the broad uptake of their solutions in the whole sector should also be considered.

Such multi-staged scheme is expected to be implemented in parallel by the projects funded under this action, each addressing a different sector.

Each proposal, involving several major industry players, should define a clear methodology to implement the various steps of the approach, define the specifications of the stages of the competitions, timelines, targets, KPIs, a solid evaluation methodology including evaluation criteria. The main information should be in the proposal, in addition to all mandatory requirements as concerns financial support to third parties. The beneficiaries will also be in charge of implementing the evaluation methodology, and providing the necessary infrastructure/technical support for the participants to the challenges. The consortium members are also responsible for ensuring high visibility of the competitions.

The projects selected from this call, each addressing one of the three targeted sectors, are expected to collaborate among themselves, in order to make economies of scale in sharing best practices, defining processes for organising the challenges, ensuring efficient monitoring, organising dissemination and communication activities, etc. Such collaboration among the linked actions is expected to be formalised by a collaboration agreement, after the grant agreement signature.

For each proposal, an amount of EUR 5,000,000 is foreseen to be distributed among the winners of Stage 1, in form of FSTP grants, in order to prepare for Stage 2. In addition, a budget of EUR 8,000,000 is foreseen to be distributed among the winners of Stage 2, in the form of FSTP grants, to prepare for Stage 3 of the challenge.

The proposal is expected to make the case for such investment in defining the objectives with sufficient level of information. This amount will be distributed equally among the 4 winning teams of Stage 2, who are expected to develop further their solutions and compete for Stage 3.

Visibility would be important; therefore dissemination and communication campaigns are key. The proposers are also encouraged to seek sponsorship, which would be key for the visibility and prestige of their challenge, and to attract the best developers from the eligible countries to compete, particularly SMEs, alone or within a team competing for the challenges.

All proposals are expected to incorporate mechanisms for assessing and demonstrating progress, including qualitative and quantitative KPIs, benchmarking, and progress monitoring.

When possible, proposals should build on and reuse public results from relevant previous funded actions. Communicable results should be shared with the European R&D community through the AI-on-demand platform, and if necessary, other relevant digital resource platforms to bolster the European AI, Data, and Robotics ecosystem by disseminating results and best practices.

This topic implements the co-programmed European Partnership on AI, data and robotics (ADRA), and all proposals are expected to allocate tasks for cohesion activities with ADRA and the CSA HORIZON-CL4-2025-03-HUMAN-18: GenAI4EU central Hub.

Proposals should also build on or seek collaboration with relevant projects[114] and develop synergies with other relevant International, European, national or regional initiatives. Projects selected in this topic will link to the resources offered by the AI Factories, including the Data Labs. The results may be validated in the Testing and Experiment Facilities and further deployed via the European Digital Innovation Hubs (EDIHs) and will contribute to the Apply AI strategy[115].

Robotics
Proposals are invited against the following topic(s):

HORIZON-CL4-2026-05-DIGITAL-EMERGING-03: Apply AI: Next-Generation Agile and Intelligent Robotics Platforms for Industrial and Service Applications (Partnership in AI, Data and Robotics) (RIA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 12.00 and 13.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 25.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's

[114] In particular, proposals in telecommunication should exploit potential synergies with projects funded under HORIZON-CL4-2025-03-DATA-08, HORIZON-CL4-2025-03-DATA-09 and HORIZON-CL4-2025-04-DATA-02; proposals in pharma/drug should exploit potential synergies with relevant projects from Cluster 1 and IHI Innovative Health Initiative; proposals in the aerospace should exploit potential synergies with relevant projects from the clean aviation JU and other similar projects/initiatives.

[115] COM(2025) 723 Apply AI Strategy.

	strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[116]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[117]
Technology Readiness Level	Activities are expected to start at TRL 2 and achieve TRL 5 by the end of the project – see General Annex B.

116 See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

117 The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

Expected Outcome: The Apply AI Strategy foresees acceleration pipelines to speed up the adoption of AI-powered robotics and ensure continuity from research and innovation to deployment. By developing next-generation platforms as common building blocks, this topic will support these pipelines across multiple use cases.

Project results are expected to contribute to all of the following expected outcomes:

- Novel robot design technique, materials and control techniques for flexible and meticulous manipulation of robots in unstructured environment, with high autonomy and in collaboration with humans.
- New generation of flexible and safe robot systems validated in key application sectors defined in the Apply AI strategy[118], developed with a human-centric approach.

Scope: Dynamic real-world environments require a new generation of agile, cost-effective, and intelligent, and modular robot platforms able to interact in safe and effective manner with humans across diverse industrial and service applications. These systems should be easily reconfigurable and adaptable, enabling deployment in real-time, high-performance operational contexts with minimal integration effort.

To ensure relevance and uptake, solutions must address industrial demands for high speed, precision, and reliability, enabling deployment in real-time, high-performance operational contexts.

Emphasis should be placed on the development of robotic systems that can be seamlessly integrated into existing industrial and service workflows, enhancing productivity and operational flexibility.

In order to improve their performances, these platforms should exploit latest development in terms of new design methods, including non-rigid structures and advanced materials (e.g. composite materials), both for the main body and for manipulators and end effectors, alongside innovative actuation and sensing approaches that go beyond traditional fixed rotational or linear links.

Proposals should target robotic systems addressing high impact needs in strategic industrial and service sectors. These systems should focus on enhanced mobility, autonomy, and simplified control architectures to support safe, efficient, and flexible operation. Integration of advanced sensors (e.g. touch, proximity, vision) is essential to enable reliable human-robot interaction, especially in rare or unpredictable safety-critical scenarios, addressing current limitations of AI in such contexts.

They should also include the design of secure and efficient communication protocols to ensure interoperability between robotic systems and digital frameworks or multi-agent environments.

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Collaboration with end-users and industry partners is encouraged to validate the practical applicability and impact of the proposed robotic solutions.

To ensure practical uptake, projects are expected to demonstrate clear pathways to scalability and commercial deployment, engage with industry partners and end-users for validation, adopt a safety-product approach

Coordination with HORIZON-CL4-2025-04-DIGITAL-EMERGING-05, focused on soft robotics, is encouraged to maximise impact and ensure complementarity in advancing physical capabilities of next-generation robotic systems.

This topic implements the co-programmed European Partnership on AI, data, and robotics (ADRA), and all proposals are expected to allocate tasks for cohesion activities with ADRA.

HORIZON-CL4-2027-04-DIGITAL-EMERGING-05: Apply AI: AI-Driven Robotics for Industry: Enabling System Integration and Adoption (IA) (Partnership in AI, Data and Robotics)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 18.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 18.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of

	Participating Countries in Horizon Europe at the time of submission of the application[119]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security . Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees. [120]
Technology Readiness Level	Activities are expected to start at TRL 4 and achieve TRL 7 by the end of the project – see General Annex B.

Expected Outcome: The Apply AI Strategy emphasises acceleration pipelines to ensure a smooth transition from research to deployment of AI-powered robotics. Projects under this topic will deliver common frameworks and reusable building blocks that can serve multiple sectors and use cases, reinforcing Europe's ability to bring AI-driven robotics to scale.

Project results are expected to contribute to all of the following expected outcomes:

- Wider and faster deployment of robotics, bridging the gap between technology providers and end-users.
- Development and implementation of modular and interoperable integration frameworks and solutions, including standardized protocols for data, training and safety testing, evaluation and validation of robotic solutions in key use cases

[119] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

[120] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

- Improved competitiveness of European industries, notably SMEs via the development of advanced robotics systems, intelligent planning and control systems, user feedback rendering techniques and cutting-edge AI innovations

Scope: The project will address the current European gap in system integration capabilities for robotics solutions addressing the various needs of industries. The project will aim at disseminating a deep understanding of state-of-the-art robotics components, including both hardware and software, and expertise in addressing interoperability issues for the upskilling of system integrators.

To maximise the impact and adaptability of deployed systems, the approach should consider the most appropriate tools to speed up integration processes and suitable AI design, training and inference methodologies, ensuring scalability, transferability, transparency, robustness, flexibility, and real-world applicability in diverse industrial environments, and should remain adaptable to the latest technological developments.

Integration frameworks will promote the use of energy-efficient AI models and hardware ('Green AI'), alongside carbon-aware deployment and operational strategies for robotic system. Where relevant, projects should contribute to open and widely recognised standards to foster interoperability and uptake across the robotics ecosystem. To enhance safety and performance, projects may include high-fidelity simulation environments or digital twins as testbeds for training, validation and verification, with measures to ensure smooth transfer from simulation to real-world deployment.

By bridging the gap between technology providers and end-users, these integrators will enable the creation of seamless, reliable and scalable robotics systems that can be easily adopted by industries, especially SMEs, thereby supporting more flexible and efficient production processes.

The project is expected to deliver:

- A deployable, modular integration framework, validated through at least three real-world industrial pilots covering different reference scenarios to demonstrate that the approach can be adapted to varied industrial needs and company sizes, including both SMEs and larger manufacturers. This framework should provide, for example, a common software layer, standard interfaces to connect to existing workflow and legacy system, possibly also to connect various robot components, coordinate multiple robots and link them with additional AI tools and IoT environments, as well as tested configuration templates and clear guidelines to ensure safe and efficient use.

- An Integration Kit, building on this framework, which offers ready-to-use modules, example configurations and practical tools that help system integrators and companies to set up, test and run AI-enabled robotics solutions more quickly and with reduced technical effort.

- Where relevant, high-fidelity digital twin testbeds should be linked to each pilot, allowing safe and realistic testing and training before deployment, and supporting a smooth transition from virtual models to actual production lines.

- Reusable, datasets (compliant with relevant regulation and IP protection) and practical benchmark tasks, made available to the wider robotics and AI community, to support further development and comparison of new solutions while respecting European data protection rules.

- A clear Step-by-Step Adoption Guide aimed at SMEs and other end-users, providing easy-to-follow instructions, practical checklists and examples to help companies plan, budget and implement AI-driven robotics in a safe and cost-effective way, even if they have limited in-house expertise, and including guidance to navigate regulatory compliance and certification.

- Concrete contributions to relevant open standards and clear guidance on certification pathways, to help ensure compliance with European regulations and build trust in the safe use of AI in robotics. Projects are expected to make full use of existing robotics resources and assets made available through the AI-on-Demand Platform, such as the EuroCORE repository and other relevant shared tools, to maximise synergies, avoid duplication of efforts and ensure broad dissemination and reuse of results within the European AI and robotics community.

This topic implements the co-programmed European Partnership on AI, data, and robotics (ADRA), and all proposals are expected to allocate tasks for cohesion activities with ADRA.

HORIZON-CL4-2026-04-DIGITAL-EMERGING-08: Apply AI: Robotics for Manufacturing: Advancing Core Skills through Technical Challenges (RIA) (Partnership in AI, Data and Robotics)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 18.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 18.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to

	avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[121]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[122]
Technology Readiness Level	Activities are expected to start at TRL 2 and achieve TRL 5 by the end of the project – see General Annex B.

121 See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

122 The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Beneficiaries must provide financial support to third parties. The support to third parties can only be provided in the form of grants. FSTP grants may be provided to either a single SME, research organisation or public body secondary or higher education establishment or a small team composed of such organizations. **FSTP amounts:** • The maximum amount to be granted per FSTP grant (whether provided to one legal entity or a team of legal entities) is EUR 200,000 in stage 2 and EUR 1,000,000 in stage 3. • The amount of EUR 200,000 in stage 2 is justified as the challenge and corresponding tasks defined for this stage must be complex enough in order to take the best and most informed decision in the selection for the next stage based on a convincing technical prototype/proof of concept that reaches sufficient level of performance in terms of scale and maturity. • The amount of EUR 1,000,000 in stage 3 is justified by the ambition of reaching significant technology progress and innovation, defined in the expected outcome of the call, including the need for the selected projects to scale their solutions to the maturity expected. The maximum amount to be granted to each third party is EUR 1,200,000. In accordance with Annex 5 of the grant agreement "SPECIFIC RULES FOR CARRYING OUT THE ACTION (— ARTICLE 18) *Implementation in case of restrictions due to strategic assets, interests, autonomy or security of the EU and its Member States*", by default beneficiaries must ensure that, *inter alia*, no recipient of FSTP is (i) *established* in a country which is not an eligible country (as identified in the specific conditions for eligibility) or (ii) *controlled* by such countries or entities from such countries (directly or indirectly as per the specific conditions for eligibility). In line with the possibility for the granting authority to agree otherwise, as concerns *control* of SMEs or private research organisations that participate as recipients of FSTP, beneficiaries must only ensure that such entities are not directly majority-owned (i.e., more than 50% of the capital) by entities established in non-eligible countries.

Expected Outcome: The Apply AI Strategy highlights the need to accelerate the uptake of AI-powered robotics through sectoral pipelines that connect research and deployment. By developing advanced robotics skills based on foundation models and creating adaptable frameworks that can be transferred across different industrial contexts, including automotive, this topic will provide common tools and building blocks to strengthen those pipelines and ensure broad industrial relevance.

Project results are expected to contribute to all of the following expected outcomes:

- Development of advanced robotics skills (e.g. high precision autonomous pick and place manipulation, autonomous navigation in unstructured environments) using robotics foundation models, tailored for manufacturing. Creation of a comprehensive framework for general purpose and flexible robotics skills development with industry-relevant challenges, evaluation metrics and success criteria.

- Facilitation of widespread deployment of robotics in manufacturing especially SMEs, through modular, adaptable, and reconfigurable solutions built on robotics foundation models, to meet evolving production needs

Scope: The proposed project aims to significantly enhance robotics capabilities in manufacturing by developing advanced robotics skills (for example, task and environment aware autonomous pick and place with high precision and speed, human-robot collaboration, etc).

By leveraging the use of next-generation AI, including generative AI, to enable robots to better adapt to real-world environments and interact with human operators, and focusing on reconfigurability, the project will develop industry-agnostic solutions that can be easily adapted to different manufacturing environments.

The project will create a comprehensive framework for robotics skills development in manufacturing, including the initial definition of three technical challenges that must be clearly described at proposal stage, with evidence of their industrial relevance and potential impact. The detailed specification and design of these challenges may be further refined during the first phase of the project in collaboration with industry partners.

The project will organize a multi-stage competition for each of the three identified technical challenges. Each stage of the competition is expected to present an increased level of complexity compared to the previous one. The approach for designing the competitive process, including the use of FSTP, should aim at maximising the impact.

One of the key use cases for this project will be the automotive industry, which should be explicitly included in proposals either as a primary focus or as a dedicated use case, demonstrating how advanced robotics can enhance production efficiency and adaptability in this sector. Other use cases alongside the automotive one are allowed and encouraged, to demonstrate the industry-agnostic nature and the transferability of the developed solutions to different industrial contexts.

User-industry companies from the manufacturing sector (including automotive) should be core partners in the consortium. They should demonstrate a genuine interest in the project results and actively support the FSTP recipients in achieving powerful and exploitable results that benefit their industry.

Organization of the Challenge:

Stage 1 – Open call: The consortium launches an open call for proposals. A challenge, open to all, will allow the selection of the 10 highest-ranked proposals for each of the three technical robotics skills, according to a pre-defined selection process and criteria. Each solution competing for the challenge can be submitted either by a single SME, research organisation or public body secondary or higher education establishment, developer of robotics solutions, or a small team of organizations.

Stage 2 – Competition among Stage 1 winners: The 10 teams or organisations selected from Stage 1 will receive a EUR 200,000 FSTP grant each in accordance with their successfully selected proposal (which addresses the tasks and challenges defined for this stage by the consortium). At the end of Stage 2, the 3 highest-ranked competing solutions will be selected for the next stage according to a pre-defined selection process and criteria.

Stage 3 – Grand Finale (competition among Stage 2 winners): The 3 best teams or organisations selected from Stage 2 will receive a EUR 1,000,000 FSTP grant each in accordance with their successfully selected proposals to address the tasks and challenges defined for this stage. In conjunction, they will prepare for the grand finale that will identify the best performing solution at the end of Stage 3 according to the evaluation methodology defined by the consortium.

The consortium should define measures to support the team winning the grand finale in maximising the impact and uptake of its solutions.

Proposals must include a draft exploitation plan outlining how the solutions developed by the FSTP recipients will be taken up, with concrete support from the user-industry partners to ensure industrial relevance and future exploitation.

This scheme is repeated for each of the three technical challenges.

The consortium will ensure high visibility of the competitions, including possible sponsorships, and will seek to attract the best developers from the EU and associated countries to compete, particularly SMEs, alone or within a team competing for the challenges.

All proposals are expected to incorporate mechanisms for assessing and demonstrating progress, including qualitative and quantitative KPIs, benchmarking, and progress monitoring. This should include the methodology to accompany the challenge participants to the various stages during the project and the assessment methodology during the various selection stages.

When possible, proposals should build on and reuse public results from relevant previous funded actions. Communicable results should be shared with the European R&D community

through the AI-on-demand platform and, if necessary, other relevant digital resource platforms to bolster the European AI, Data, and Robotics ecosystem by disseminating results and best practices.

This topic implements the co-programmed European Partnership on AI, data, and robotics (ADRA), and all proposals are expected to allocate tasks for cohesion activities with ADRA

Proposals should also build on or seek collaboration with relevant projects and develop synergies with other relevant International, European, national, or regional initiatives.

AI4GOOD
Proposals are invited against the following topic(s):

HORIZON-CL4-2026-04-DIGITAL-EMERGING-09: Advanced Local Digital Twins using AI for Early Warning and Preparedness (IA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Due to the scope of this topic, international organisations with headquarters in a Member State or Horizon Europe Associated Country are exceptionally eligible for funding. The Joint Research Centre (JRC) may participate as member of the consortium selected for funding as a beneficiary with zero funding, or as an associated partner. The JRC will not participate in the preparation and submission of the proposal - see General Annex B. If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). Subject to restrictions for the protection of European communication networks.
Technology	Activities are expected to start at TRL 5 and achieve TRL 7 by the end

Readiness Level	of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [123].

Expected Outcome: Open AI models that can help predict, respond to, and mitigate impacts before a disaster occurs, enabling proactive decision-making and effective disaster management effectively.

Protection of citizens from natural hazards through proactive measures, preparedness strategies, and urban resilience, planning

Project results are expected to contribute to one of the following outcomes:

- Enhanced protection of citizens from the natural hazard of flooding by facilitating proactive decision-making and effective disaster management through **open AI-driven models** for urban resilience strategies and planning that can help predict, respond to, and mitigate impacts before a disaster occurs.
- Improved modelling and prediction of urban and riverine flooding by expanding the capabilities of **Local Digital Twins** with sophisticated **AI algorithms** and relevant data detailing hydrological and hydraulic processes.
- Strengthened **integration of diverse and essential datasets** including detailed terrain, land cover, urban features, soil data, and real-time meteorological information (rainfall and temperature, river geometry, and flow) sourced from national hydrometric networks, urban drainage infrastructure, and flood protection assets. This integration aims to enhance flood analysis, simulation, and preparedness particularly in response to climate change and flood scenarios like heavy rainfall impacting nearby river basins.

The projects will leverage high-resolution climatic and meteorological models to assess extreme weather, while also drawing on relevant initiatives such as the Global Flood Awareness System and Destination Earth.

[123] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Scope: In line with the Apply AI Strategy, proposals should develop and implement projects that advance innovative AI algorithms and models from concept to large-scale testing and validation. These solutions will be applied to the creation of Local Digital Twins for flood preparedness, enabling the simulation of flood scenarios, identification of areas at risk, and estimation of potential damage.

- Proposals should focus on the development of innovative AI algorithms that move beyond rigid functions, employing instead a dynamic set of descriptive building features derived from digital models (e.g., geometrical parameters, urban morphology, socio-economic indicators). These algorithms should be integrated with advanced, high-resolution hazard models — including hydrological and hydraulic models — tailored to the specific characteristics of the local area.

- The Local Digital Twins will enable:

    - Flood damage models capable of calculating building-scale impacts, forming the basis for damage hotspot maps.

    - Interactive user interfaces that allow components to be exchanged, modified, and reconfigured to estimate flood damage under various urban planning and risk management scenarios — for example, assessing the feasibility of proposed or existing constructions in flood-prone zones and recommending targeted mitigation strategies.

The scope of this topic includes a strong research and innovation component aimed at the prototyping, testing, and large-scale validation of tailored AI algorithms designed to model multiple disaster types, with a focus on operational deployment in real-world contexts. .It is recommended to prioritise the use of frugal (and local) AI as much as possible. This approach will both reduce greenhouse emissions -an indirect driver of climate-related disasters- and ensure that the tools remain functional in environments with limited connectivity.

Proposals should take into account the expertise of the European Commission's Joint Research Centre (JRC)[124], particularly its experience in developing global systems for disaster and risk management and analyse the potential uptake of the project outcomes by the Copernicus Emergency Management Service. In addition, proposals should align with for the 2025 Mission call on Local Digital Twin for urban planning, ensuring interoperability and complementarity with related European initiatives.

The project results should be modular for reuse in locations outside Europe considering constraints on deployment of AI solutions in low- and middle-income countries. Therefore, the project results shall be open source as much as possible and transferable through open platforms.

[124] The JRC expertise on disasters and floods through the Disaster Risk Management Centre https://drmkc.jrc.ec.europa.eu/

1. *Focus will be on open-source solutions (both software and hardware) and their integration into existing platforms (e.g. EDIC[125]) to ensure replicability of the results and portability in different areas.*

2. *The proposal should support open-source software and open hardware design. Applicants are encouraged to support, open access to data, access to testing and operational infrastructures as well as an IPR regime ensuring lasting impact and reusability of results.*

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority (i.e. DG-CNECT and HaDEA) before the intended transfer or licensing takes place and the granting authority may up to four years after the end of the action object to a transfer of ownership or the exclusive licensing of results.

HORIZON-CL4-2027-04-DIGITAL-EMERGING-06: International cooperation in AI (IA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 1.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 3.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 7 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the

125 *https://digital-strategy.ec.europa.eu/en/news/eu-funded-ai-innovation-powers-new-era-cooperative-smart-city-development*

	Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [126].

Expected Outcome: Project results are expected to contribute to one of the following outcomes:

- Faster uptake of tailored and enhanced AI solutions at **innovation hubs** in low- and middle-income countries by training and optimising them with local data and applied research.
- Easier large-scale deployment of local AI solutions **in low and middle-income countries** by increasing the efficiency of system **demonstration in relevant, operational environments**.
- Strengthened local innovation ecosystems that foster **sustainable socio-economic impact** by addressing key societal challenges in areas such as education, healthcare, agriculture, and environmental sustainability.

Scope: System prototype, testing, validation, and demonstration in operational environment aligned to EU initiatives, such as the International Digital Strategy for the EU[127] and the AI Continent Action Plan[128], to strengthen local AI ecosystems in African countries fostering responsible AI development, north-south digital cooperation on AI, and sustainable AI innovation.

The main goal is to support the digital transition and foster inclusive economic and social transformation of partners globally by adapting and applying innovative solutions, research areas and capabilities developed in Europe to low- and middle-income countries.

This Innovation Action will focus on accelerating the uptake of and access to AI solutions by local innovation hubs in these countries, better enabling their practical implementation and future market deployment in operational environments. Proposals should consider synergies and complementarity of ongoing research and innovation activities in the policy areas of international partnerships, digital and infrastructure like the Digital for Development Hub[129] and AI for Public Good[130], and may follow an approach like Living Labs. Proposals should also support the European Union's Global Gateway strategy to boost smart, clean, and secure connections in digital, energy and transport sectors, and to strengthen health, education and

126 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

127 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52025JC0140

128 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52025DC0165

129 https://d4dhub.eu/

130 https://digital-strategy.ec.europa.eu/en/factpages/ai-public-good

research systems across the world. Proposals should enable AI technologies that are locally relevant and sustainable, empower local communities and platforms, and reflect the EU's emphasis on sustainable and resilient global partnerships.

The proposals must support digital partnerships and international digital cooperation to promote an approach to AI that enhances human well-being and societal progress through:

- Support for gathering of and access to local data in line with EU's data strategy for the training and optimisation of existing AI algorithms developed in initiatives like AI for Public Good and GenAI for Africa.
- Establishment and support of Living Labs within local innovation hubs in low-income countries, fostering co-creation spaces where community members, researchers, entrepreneurs, and policymakers can collaboratively tailor, enhance, test, and iterate AI-driven solutions. These Living Labs will serve as platforms for experiential learning, inclusive participation, and sustainable technology adoption.
- Tailored and contextualized AI-based solutions developed through a bottom-up approach, driven by the specific needs of low-income communities. These solutions will be trained and adapted using local data sources, enabling meaningful knowledge transfer and empowering local stakeholders with relevant and actionable technologies.
- Contribution, where possible, to solving global sustainable development challenges, especially climate and agriculture, biodiversity, health and humanitarian needs, education.
- Fostering an enabling innovation environment with reinforced talent pipelines and technological transfer of AI algorithms and solutions to local innovation hub.
- Full testing and validation of the solutions in real-life with scenarios and initial support to large-scale deployment in low and middle-income countries.

Capitalise from existing EU initiatives like the call GenAI for Africa from HE WP25, the Global Gateway, and Smart Africa to up-scale the deployment of solutions in low-income countries.

Quantum

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-04-DIGITAL-EMERGING-11: Grand Challenge on Quantum Sensors for Inertial Navigation - CANCELLED

Call: DIGITAL	
Specific conditions	
Expected EU	The Commission estimates that an EU contribution of around EUR 0.00

contribution per project	million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 0.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[131]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or

[131] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

	entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[132] The following additional eligibility criteria apply: Proposals must be submitted by a single legal entity (mono-beneficiary CSA) wich is an SME.
Award criteria	The criteria are described in General Annex D. The following exceptions apply: The following additions to the general award criteria aspects apply: 1. Excellence: credibility of the technical approach for road-mapping and benchmarking; adequacy of performance metrics and methodology (e.g. drift rate, SWaP-C, environmental resilience) and early end-user engagement to define requirements. 2. Impact: enhancing the EU stance around quantum inertial navigation from different angles[133]; expected contribution to EU technological sovereignty (including mitigation of non-EU supply-chain dependencies) and to societal, industrial and economic benefits; credibility of the path to commercialisation and investor-readiness. 3. Quality and efficiency of the implementation: credibility of the work plan, resources and risk management for a mono-beneficiary CSA; capacity to deliver the specified outputs (technical & financial roadmap, validation/benchmarking reports, viability assessment); appropriateness of the team and access to facilities for validation/benchmarking of existing prototypes.

Expected Outcome: Expected Outcome: This topic is the first phase of a two-phase competitive structure supported by Horizon Europe, implemented via a Coordination and Support Action (CSA) in close collaboration with the European Investment Bank (EIB).

- Phase 1 (this topic): A CSA focused on readiness-analysis in terms of exploitation and investments, benchmarking the commercial viability of quantum enabled navigation systems. The aim is to deliver concrete outputs that improve the conditions for use of the

132 The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

133 https://qt.eu/media/pdf/Strategic-Reseach-and-Industry-Agenda-2030.pdf

supported projects through credible technical, industrialisation and financial roadmaps, validated against investor requirements (e.g. EIB, InvestEU). Activities also include analyses of investor-readiness and supply-chain sovereignty.

- Phase 2: For further information, see the indirectly managed action "HORIZON-CL4 Quantum Top-Up to InvestEU: Grand Challenge Phase 2" in the Cluster 4 part of the Horizon Europe 2026/2027 Work Programme. This CSA is designed to allow the best possible application in Phase 2 and the current CSA results may therefore inform applications by beneficiaries to investment support managed by the EIB under InvestEU (separate procedures).

Under Phase 1 projects are expected to establish a comprehensive technical and financial roadmap that demonstrates the potential of the proposed Q-INS solutions, and at least deliver evidence-based design and benchmarking packages for reduced-scale systems (such as documentation, test/benchmark reports and evidence of pre-existing or externally financed prototypes) in one of the following two categories:

- **Category 1 (cold-atoms Q-INS)**: Q-INS based on cold-atom interferometry (or other technology of at least equivalent performance) featuring long-term navigation accuracy (<10 m/hour) due to reduced drift with respect to commercial Inertial Measurement Units (IMUs). End-user requirements together with documented benchmark evidence from existing or externally financed prototypes will be collected for demonstrations in maritime or aviation applications.

- **Category 2** (**Chip-scale Q-INS**): Low C-SWAP Q-INS measuring acceleration, rotation rate, and/or magnetic field, aimed at the implementation of chip-scale sensors based on defect centers and vacancies in crystals or on warm atomic vapours (including nuclear magnetic resonance), for applications e.g. in small satellites, UAVs, and autonomous transport.

Proposals should target systems that are already sufficiently mature to enable credible benchmarking and industrial road-mapping. Specific expected outcomes include:

- A detailed technical roadmap, including system architecture, integration strategy, performance milestones, risk assessments and industrialisation plan for scalable production

- The industrialisation plan should be validated in conjunction with the EIB requirements, including commercialization timelines, and should include at least the following:

    - Detailed Q-INS architecture based on quantum sensing techniques hybridised with classical IMUs,

    - Compliance assessment for SWaP-C requirements, environmental resilience, and real-world integration,

  - An assessment of dependencies on non-EU suppliers of critical components and proposal of effective mitigation measures in view of a sovereign supply chain,
  - Potential list of end-users to capture system requirements and use-case constraints

- A comprehensive financial roadmap and viability assessment covering business models, market analyses, commercialization pathways, revenue projections and investment criteria
- Documented lab-validation/benchmarking of an existing or externally financed prototype (no EU funding of R&I or prototype development in this CSA), with preliminary benchmark results.
- An application strategy identifying target sectors (maritime, aviation, space, autonomous systems) and quantifiable advantages over classical IMUs.

Scope: The Grand Challenge on Quantum Sensors for Inertial Navigation aims to advance the development of quantum-enabled navigation systems for use in GNSS-denied or contested environments. Q-INS combines quantum sensors with classical inertial measurement subsystems to deliver reliable, resilient, and sovereign positioning capabilities. The topic supports the EU's ambition to strengthen technological sovereignty in strategic navigation infrastructures, aligned with the objectives of the STEP and the Digital Decade.

Under this topic (Phase 1), projects are expected to deliver a comprehensive technical, industrialisation, and financial roadmap, including criteria for investment readiness, bankability, risk assessment, and scalability, thereby laying the groundwork for future investments via EU financial instruments under InvestEU, which benefits from a dedicated top-up from Horizon Europe for this purpose[134].

Under Phase 1, Expressions of Interest from potential end-user partners are strongly encouraged. Tailored advisory services from EIB Advisory may support financial structuring to prepare for Phase 2.

Projects funded under this action are expected to span approximately six months, with an EU contribution up to EUR 0.5 million.

This topic is cancelled. The cancellation follows the adoption of Council Regulation (EU) 2026/150 of 16 January 2026 amending Regulation (EU) 2021/1173 on establishing the European High Performance Computing Joint Undertaking ('EuroHPC JU'), which enlarged the mandate of EuroHPC JU to encompass, inter alia, quantum technologies.

HORIZON-CL4-2026-04-DIGITAL-EMERGING-12: Standards for Quantum Technologies – Coordination and Support Action (CSA) - CANCELLED

Call: DIGITAL

[134] HORIZON-CL4 Indirectly managed action "Quantum Top-Up to InvestEU: Grand Challenge Phase 2"

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 0.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 0.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway, associated countries and OECD countries. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or a non-eligible country entity, shall not participate in the action.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [135].

Expected Outcome: This action will support and accelerate the development and adoption of European and international standards for quantum technologies, enhancing interoperability

[135] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

quality/reliability assurance, and trust in quantum systems. It will strengthen Europe's leadership in the global quantum standardisation landscape and ensure that European industrial and research priorities are well represented and integrated into emerging standards.

Expected outcomes include:

- Delivery of concrete, EU-relevant pre-normative standards and technical specifications across quantum computing, communication, and sensing.
- Substantial contribution of European stakeholders, notably SMEs and start-ups in international standardisation bodies (e.g., ISO/IEC, ITU-T, ETSI), with alignment to EU industrial strategies.
- Promotion of cross-sectoral interoperability through standardised interfaces, control protocols, reliability in operating conditions and benchmarking methodologies, reducing market fragmentation and technical barriers.
- Creation of practical support tools such as user guidelines, training modules, and best practices to accelerate the uptake and implementation of quantum standards.

Scope: The CSA will coordinate and support standardisation activities for quantum technologies in areas such as quantum computing, communication, sensing, and control. Proposals should include:

- Build on the roadmaps of European standardisation organisations to (i) standardise results from quantum projects funded under Horizon Europe, the Digital Europe Programme, and EuroHPC JU in line with stakeholder priorities, and (ii) foster an active industrial standardisation community to promote engagement and uptake within the European quantum industry.
- Enabling broad stakeholder participation in international standardisation activities (e.g. ISO/IEC, ITU-T, ETSI), promoting EU priorities.
- Support interoperability and integration of quantum systems through standardisation of interfaces, protocols, and benchmarking methodologies.
- Develop explanatory documentation and training material to facilitate adoption and implementation of the developed standards.
- Drafting and developing concrete standards or technical specifications, in cooperation with relevant standardisation bodies, in areas such as:
    - Hardware-software interfaces in quantum computing,
    - Quantum sensing protocols and metrology methods,
    - Control electronics and device modularity for quantum systems,
    - Performance and benchmarking methodologies.

- Supporting the participation of quantum stakeholders in European and international standardisation organisations (e.g. CEN-CENELEC, ETSI, ISO/IEC, ITU-T)
- Coordination with existing European and international standardisation organisations to ensure alignment and avoid duplication.
- Development of support materials such as user guides, training modules, and best practices for the standards developed.
- Organisation of workshops and consultations with quantum stakeholders (including SMEs, start-ups, and large industry) to ensure inclusivity and consensus building.

The proposal must present a clear plan for stakeholder engagement, deliverables, and budget justification, including person-days per task and daily rates. A single proposal is expected. European standardisation organisations (ESOs) are encouraged to lead or be key partners in the consortium.

This topic is cancelled. The cancellation follows the adoption of Council Regulation (EU) 2026/150 of 16 January 2026 amending Regulation (EU) 2021/1173 on establishing the European High Performance Computing Joint Undertaking ('EuroHPC JU'), which enlarged the mandate of EuroHPC JU to encompass, inter alia, quantum technologies.

HORIZON-CL4-2026-04-DIGITAL-EMERGING-18: Large-Scale Photonic Quantum Computing Platform Technologies (RIA) - CANCELLED

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 0.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 0.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions.

	For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[136]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[137]
Technology Readiness Level	Activities are expected to start at TRL 4 and achieve TRL 7 by the end of the project – see General Annex B.

Expected Outcome: This action will establish a strategic European initiative to develop scalable, modular, and interoperable photonic quantum computing platforms. Proposals for this topic are expected to address and provide credible solutions to at least **two major technical roadblocks** currently limiting the advancement of photonic quantum computing such as:

136 See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

137 The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

- The lack of deterministic, high-efficiency photonic entanglement and loss-tolerant architectures suitable for fault-tolerant scaling
- The absence of a standardised, integrated control stack combining photonic hardware, firmware, and system software with reliable benchmarking across platforms

Project results are expected to contribute to the following expected outcomes:

- By 2028, demonstration of a photonic NISQ processor with ≥100 photonic qubits, integrating deterministic single-photon sources, low-loss waveguides, on-chip detectors, and a firmware stack (scheduler, controller, compiler), validated via hardware-agnostic benchmarks and hybrid photonic-HPC applications demonstrating classical-quantum crossover
- By 2030, delivery of a full-stack, high-connectivity photonic quantum computer, with modular scalability, integrated on-chip and fibre-based interconnects, and high-fidelity gates (e.g. error rates $\leq 10^{-3}$) with an indicative target of 1 000 photonic qubits, laying the groundwork for prototype demonstrations of quantum utility on industrially relevant workloads.
- System-level interoperability and standardisation, with published interface specifications across photonic quantum hardware and software stacks including packaging, APIs, compiler interfaces, and cloud protocols compatible with telecom wavelengths
- Validation of entanglement distribution across modules through standardised protocols and field-demonstration of interconnected photonic quantum processors
- Acceleration of industrialisation and commercialisation, including a roadmap for pilot manufacturing lines, quality assurance protocols, and development of a sovereign European supply chain for photonic quantum technologies
- Demonstration of project results through a **concrete use case provided by a major end-user** partner within the consortium, validating the platform's relevance and performance under real operational constraints.

Scope: Proposals for this topic are expected to be **led by a startup** with demonstrated expertise in photonic quantum computing. The startup should collaborate with relevant academic, industrial, and RTO partners to ensure both technological depth and market orientation. The consortium should also include **at least one major end-user** whose operational needs will shape the platform design, and whose infrastructure will host the field demonstration of the project's results.

Proposals should implement a coordinated, durable R&I programme that integrates hardware, software, system architecture, and application-level use cases. Activities should include:

- Platform development advancing open, scalable photonic quantum processors with semiconductor and/or glass-based photonic chips, integrated control electronics, firmware, and robust error mitigation and correction schemes
- System integration realising modular quantum nodes with photonic interconnects and validating scalable architectures under realistic noise, loss, and control constraints
- Software stack co-design integrating low-level firmware, compilers, hybrid algorithms, and network APIs to demonstrate application-level quantum advantage and HPC interoperability

Proposals are expected to build upon prior Quantum Flagship results and demonstrate capacity to contribute actively to the governance and strategic coordination of the EU quantum computing ecosystem, including synergies with STEP, Chips JU, IPCEI projects and EuroHPC.

This topic is cancelled. The cancellation follows the adoption of Council Regulation (EU) 2026/150 of 16 January 2026 amending Regulation (EU) 2021/1173 on establishing the European High Performance Computing Joint Undertaking ('EuroHPC JU'), which enlarged the mandate of EuroHPC JU to encompass, inter alia, quantum technologies.

Photonics

Proposals are invited against the following topic(s):

HORIZON-CL4-2027-05-DIGITAL-EMERGING-03: Advanced integrated photonic devices for extended features and ultra-low power consumption (RIA) (Photonics Partnership)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 25.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a

	global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway, associated countries, OECD countries and MERCOSUR countries. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, shall not participate in the action.
Technology Readiness Level	Activities are expected to start at TRL 3 and achieve TRL 6 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [138].

Expected Outcome:

- Advanced integrated photonic devices and circuits with enhanced functionality and performance enabling wider application across multiple sectors including digital, automotive, industrial, health and security
- Reinforced competitiveness of EU photonics actors by demonstrating advancements in representative system configurations and validating real-world applicability
- Significantly improved performance of electro-optic systems in applications such as communication, computing, sensing, medical diagnostics, data processing, AI supporting the introduction of photonic elements into such systems
- Low power consumption sensors with increased performance in application domains

[138] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Scope: R&I should enhance the functionality, efficiency, and integration of photonic devices and circuits with a focus extended system performance. Action should address at least two of the following aspects.

- Enhanced performance through improved spectral purity, wavelength coverage, output power and noise characteristics.
- Increased modulation or detection speeds going beyond the capability of existing PIC material platforms, improved signal-processing capabilities, and integration of novel materials such as thin-film LiNbO3, BTO, graphene, silicon carbide, phase change materials and TMDCs.
- Miniaturised, high-complexity photonic circuits (e.g. multilayer photonics, chiplets, multiple integrated functional elements), scalable interconnects and electronics-photonics integration (co-packaged, heterogeneous, or monolithic) to improve performance, reliability, and cost-efficiency.
- Reduction of power consumption for example through improved electrical-to-optical conversion, lower optical losses, devices operable at higher temperatures to reduce cooling needs, and low-power circuit actuation and control.

Proposals should consider system-level impact and demonstrate advancements in representative configurations relevant to one or more application domains.

This topic implements the co-programmed European Partnership on photonics.

HORIZON-CL4-2026-04-DIGITAL-EMERGING-14: Networking and Future Photonics Strategy (CSA) (Photonics Partnership)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 3.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Legal and financial	The rules are described in General Annex G. The following

set-up of the Grant Agreements	exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome: Projects are expected to contribute to the following outcomes:

- Continued coordination and strategic support to the broader European photonics ecosystem, fostering a transparent, inclusive governance model and bottom-up roadmap development.
- Strengthened engagement across the photonics ecosystem, including industry, academia, national platforms and end-user sectors.
- Improved alignment of regional, national and European R&I agendas, enhancing coherence and impact across funding instruments.
- Effective monitoring and steering of Partnership-funded projects towards the achievement of Key Performance Indicators.
- Increased visibility of photonics as a critical enabling technology for EU priorities such as the digital and green transitions, industrial competitiveness and technological sovereignty.
- Enhanced collaboration with other European Partnerships and strategic initiatives to maximise synergies and streamline efforts.
- Improved access to private and blended finance for photonics innovation, growth and scale-up.

Scope: Proposals should include:

- Development and regular updating of the European Photonics Strategic Research and Innovation Agenda (SRIA) and associated roadmaps
- Coordination and monitoring of Partnership-funded R&I and CSA projects, including tracking of Key Performance Indicators and recommending corrective actions where needed
- Outreach, advocacy, and stakeholder engagement, including alignment with national, regional, and European photonics strategies and input into broader EU policy initiatives
- Provision of a unified communication platform for the European photonics community and strengthened public communication on the impact of photonics
- Facilitation of collaboration with other European Partnerships, strategic initiatives, and financial institutions to identify synergies and improve access to innovation financing.

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority (i.e. DG-CNECT and HaDEA) before the intended transfer or licensing takes place and the granting authority may up to four years after the end of the action object to a transfer of ownership or the exclusive licensing of results.

Semiconductors

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-04-DIGITAL-EMERGING-15: Strengthening the cooperation of semiconductor-intensive EU regions (CSA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 1.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 1.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome: The topic's objective is to support semiconductor-intensive regions and regional industrial semiconductor clusters working with regional governments. The notion of semiconductors includes integrated circuits (chips) with electronic and photonic functionalities.

Regions have an essential role to play in the implementation of EU policies in the field of semiconductors. Within their remit they facilitate establishing industrial activities related to semiconductor production and services by providing for example construction permits, energy, water, infrastructure and often funding. They help creating regional ecosystems around big fabs and contribute to structuring clusters of actors across the value chain.

The expected outcomes are

- Stronger cooperation of regions (governments and linked industrial clusters) which are active across the semiconductor supply chain
- Contributions to the smart specialisation of regions in the semiconductor area
- Maps of regional semiconductor ecosystems across the value chain and their connections amongst each other and identification of common needs
- A joint strategy to link and strengthen regional semiconductor ecosystems which may possibly lead to increased effectiveness of the Competence Centres originating from the Chips for Europe initiative.
- A sustainable online platform exchanging information on capabilities and best practices, guiding potential investors and supporting new entrants intending to specialise in semiconductor.

Scope: The action should pursue its objectives by means of

- Identifying key local actors in the semiconductor supply chain and their common needs
- Developing a joint strategy to strengthen the cooperation of semiconductor-intensive regions
- Exploring cooperation with the Chips Competence Centres established under the Chips JU
- Evidence gathering on obstacles to semiconductor production investments related to framework conditions such as permitting
- Collecting best practices on overcoming such obstacles and preparing guidelines and their dissemination to the respective regional and national public authorities for accelerating the construction of semiconductor production infrastructures in Europe.

The action should support networking and joint work of the involved stakeholders, such as e.g. those in the *European Semiconductor Regions Alliance* (ESRA).

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority (i.e. DG-CNECT and HaDEA) before the intended transfer or licensing takes place and the granting authority may up to four years after the end of the action object to a transfer of ownership or the exclusive licensing of results.

Other emerging technologies

Proposals are invited against the following topic(s):

HORIZON-CL4-2027-04-DIGITAL-EMERGING-10: Horizon scanning and foresight in future enabling digital technologies (CSA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [139].

Expected Outcome:

- European leadership in foresight activities on future enabling technologies and their transformational potential in industrial, societal and environmental terms.
- Increased collaboration between academia, industry players and other relevant stakeholders in iterative and multidisciplinary approaches for co-creating the enabling technologies of the future.

[139] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- Alignment with national or regional initiatives creating an expanding innovation ecosystem, anchored in local contexts across Europe, for selected emerging technologies.

- Accelerating the pick-up of novel advanced technology by industry and society.

Scope: Proposals should establish a forum for emerging interdisciplinary areas and new technological visions.

Proposals should enable and support a broad range of participants (across disciplines in science and engineering, RTOs, industry sectors, stakeholders) to meet, mutually inspire, cooperate and identify together innovative ideas for future enabling digital technologies covering from fundamental research up to proof of concept.

Proposals should involve and be driven by representatives of the relevant actors of the field (e.g., academia, RTOs, industry including SMEs).

Proposals should consider civil society engagement for seeking wider input.

Proposals should connect with analogous EC-internal activities, either ongoing (e.g. FOSI4EIC involving EISMEA and JRC) or foreseen, such as the Competitiveness Coordination Tool and the technology observatory envisaged in the FP10 regulation.

HORIZON-CL4-2026-04-DIGITAL-EMERGING-17: Fostering 2-Dimensional Materials (2DM) based emerging and enabling technologies (CSA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 1.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 1.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results,

	as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [140].

Expected Outcome:

- Maximize the impact of EU-funded R&I in 2DM-based emerging and enabling technologies.
- Reinforce the related R&I community in Europe.

Scope: Proposals should provide key support functions fostering a dynamic R&I community in 2DM-based emerging and enabling technologies, facilitating synergies and collaboration among relevant EU-funded projects – including those of the Graphene Flagship - and associated entities.

Proposals should provide support to the relevant actors in R&I roadmapping, innovation, standardization activities in 2DM-based technologies

Proposals should establish and keep up-to-date European and global R&I and funding landscapes in 2DM-based technologies.

Proposals should relay and amplify communication and dissemination activities of the actors in the domain of graphene and other 2DMs.

Proposals should foster interactions and synergies with relevant national and regional initiatives, Partnerships, in particular the Innovative advanced materials for Europe partnership, projects such as InnoMatSyn, and infrastructures in the domain.

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority (i.e. DG-CNECT and HaDEA) before the intended transfer or licensing takes place and the granting authority may up to four years after the end of the action object to a transfer of ownership or the exclusive licensing of results.

AI for manufacturing and energy-intensive industries

Proposals are invited against the following topic(s):

[140] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

HORIZON-CL4-2026-02-DIGITAL-EMERGING-51-two-stage: AI improved advanced manufacturing and production processes in factories (RIA) (Made in Europe and AI, Data and Robotics partnerships)

Call: INDUSTRY-two-stage	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 4.00 and 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 30.00 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: Applicants submitting a proposal for a blind evaluation (see General Annex F) must not disclose their organisation names, acronyms, logos nor names of personnel in the proposal abstract and Part B of their first-stage application (see General Annex E). In order to include a business case and exploitation strategy, as outlined in the introduction to Destination 'Leadership in materials and production for Europe', the page limit in part B of the General Annexes is exceptionally extended by 3 pages (for second-stage proposals).
Technology Readiness Level	Activities are expected to start at TRL 4-5 and achieve TRL 6 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering also textiles, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked with focus on complex functional and technical textiles, provided that the applications attain all thresholds. The first-stage proposals of this topic will be evaluated blindly.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

	Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [141].

Expected Outcome:

- Increased competitiveness and productivity, through innovative AI-enabled advanced manufacturing processes and operations, including real-time monitoring and adaptive optimisation; and
- Reduction of emissions and alignment with Clean Industrial Deal objectives.

Scope: AI approaches in manufacturing processes hold the potential to significantly enhance circularity, process and operational efficiency as well as sustainability of modern factories. Current state-of-the-art technologies have already paved the way for more streamlined operations, yet there remains untapped value in e.g. quality improvement, definition of optimal process operating conditions, reduction of scrap, optimization of energy usage. Real-time monitoring and adaptive optimisation using AI models can enable agile responses to production variability and support sustained, high-performance operations.

New solutions based on innovative enabling technologies such as deep learning, large language models, digital twins, synthetic data, and data-driven models allow manufacturers to improve production system efficiency, elevate product quality, and proactively address critical challenges in energy consumption and carbon footprint. This dual focus on operational excellence and sustainability ensures that factories can maintain competitive advantage while also contributing to specific environmental goals, e.g. reducing the pressure on ecosystems and natural resources. Since innovation capacity and competitiveness also requires a systemic understanding of an organization's value creating structure, novel AI solutions should be implemented such that they can support all structures and phases of operation, in technical and non-technical terms.

Proposals should produce dedicated innovative explainable AI based solutions in advanced manufacturing for at least two of the following:

- improve processes and operational efficiency, and reduce climate and environmental impact of processes and factories through dynamic selection of optimal processes and production parameters, exploiting AI for process modelling and/or optimisation;

[141] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- avoid the production of defective parts using AI to detect process drift and anomalies and correct proactively defects in real time; and
- maximise the fraction of regenerated components or materials used in the production using AI to optimise the material flow.

Proposals should demonstrate potential for these AI tools to adapt to changing production needs and real-time data, and should describe how industrial data access, confidentiality, and secure data-sharing will be addressed.

Projects are encouraged to link with AI Factories, including the Data Labs. The results may be validated in Testing and Experiment Facilities (TEFs), and further deployed via European Digital Innovation Hubs (EDIHs). This topic is linked to the Apply AI Strategy, therefore proposals should seek collaboration with relevant initiatives.

Proposals can optionally address the conditions for implementing the novel AI solutions within an organisations structure and value creating models, thereby contributing to systemic approach of implementing a smart organisation.

This topic is linked to the Apply AI Strategy, therefore proposals should seek collaboration with relevant initiatives.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to Destination ‘Leadership in materials and production for Europe’.

This topic implements the co-programmed European Partnerships Made in Europe and AI, Data and Robotics.

HORIZON-CL4-2027-02-DIGITAL-EMERGING-52-two-stage: New approaches for Human/AI collaboration for the workforce of the future (RIA) (Made in Europe and AI, Data and Robotics partnerships)

Call: INDUSTRY-two-stage	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 4.00 and 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 30.00 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: Applicants submitting a proposal for a blind evaluation (see General

	Annex F) must not disclose their organisation names, acronyms, logos nor names of personnel in the proposal abstract and Part B of their first-stage application (see General Annex E). In order to include a business case and exploitation strategy, as outlined in the introduction to Destination 'Leadership in materials and production for Europe', the page limit is exceptionally extended by 3 pages (for second-stage proposals).
Technology Readiness Level	Activities are expected to start at TRL 4-5 and achieve TRL 6 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The first-stage proposals of this topic will be evaluated blindly.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [142].
Evaluation and award procedure	The procedure is described in General Annex F. The following exceptions apply: The first-stage proposals of this topic will be evaluated blindly. The first-stage proposals of this topic will be subject to a 'partial randomisation' selection. The evaluation committee at the first stage will be composed partially of representatives of EU institutions in order to conduct the random ranking. For proposals meeting the individual quality thresholds, the procedure

142 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

	under points 1, 2, 3 or 4 below will apply depending on their score. The score will be calculated as the arithmetic mean of the total scores given by the individual expert evaluators. Proposals with the same score will be subject to the same procedure. Starting from proposals with the highest score: (1) The highest scored proposals with a cumulative total requested EU contribution equalling **as close as possible** to EUR 45.00 million, and not less than EUR 30.00 million, will be ranked based on score and invited to submit a full application for the second stage [143]. (2) Ranking in random order will apply to proposals not invited under point 1 with subsequent highest scores for a cumulative total requested EU contribution **as close as possible to** EUR 90.00 million **minus** the total indicative budget assigned to proposals under point 1 **and then multiplied by two, if the overall difference of scores between these proposals is 0.5 or less.** This will result in a random ranking. Applicants whose proposals are ranked highest under point 2 with a cumulative total requested EU contribution **as close as possible to** EUR 90.00 million (including requested EU contribution for proposals under point 1) will be invited to submit a full application for the second stage. The randomisation must be transparent, and the integrity of the process must be ensured and documented. (3) **If the overall difference of scores between proposals under point 2 exceeds 0.5**, points 1 and 2 above do not apply. In this case, the highest scored proposals with a cumulative total requested EU contribution up to EUR 90.00 million will be ranked based on score and invited to submit a full application for the second stage[144]. (4) Proposals not invited under points 1, 2, or 3 will be rejected due to lack of available budget.

Expected Outcome:

143 If the budget assigned to proposals under point 1 exceeds EUR 90.00 million, the remaining budget is zero and point 2 does not apply. In this case, the proposals identified under point 1 with the lowest equal score will be ranked in random order as described under point 2. Based on this ranking, applicants with proposals with a cumulative total requested EU contribution up to EUR 90.00 million will be invited to submit a full application for the second stage.

144 If the budget assigned to proposals under point 3 exceeds EUR 90.00 million, the proposals identified under point 3 with the lowest equal score will be ranked in random order as described under point 2. Based on this ranking, applicants with proposals with a cumulative total requested EU contribution up to EUR 90.00 million will be invited to submit a full application for the second stage.

- Industrial jobs are transformed through AI-based human-machine interactions (and skills linked to them) which enhance flexibility, inclusion, well-being, up-skilling, career evolution and knowledge sharing;

- Increased competitiveness and sustainability of advanced manufacturing industries by means of knowledge formalization and adaptability of the machines to workers and markets based on different cultures.

Scope: Innovative AI approaches are poised to revolutionise human-machine collaboration in factories by fostering an environment where technology and human expertise synergistically enhance each other. AI can enhance the value of the companies by capturing and formalising the knowledge which is dispersed and not explicit. This allows companies to really own the knowledge and use it to reduce the onboarding time of new employees and support personnel upskilling to adapt to the evolving technological landscape. AI has a great potential to make task simpler by reducing the complexity offering intuitive interfaces and real-time feedback allowing workforce to be more efficient and effective while facilitating access to more complex tasks including those involving various forms of planning. AI can also adapt the interaction of automation with the worker taking into account particular needs of the human, including adaptation to the different abilities of the workers and facilitating inclusion. Finally, AI can be used to allow easier export of automation produced in EU by facilitating its interaction with workforce having different cultures adapting the interaction of the machines to the different needs.

Proposals should produce dedicated innovative AI approaches for human-machine collaboration in advanced manufacturing to be applied in at least two of following fields:

- Human-AI Co-Learning and knowledge capture to share competences, capture expert knowledge, provide interactive mentoring to up-skill the workforce, and support re-qualification and continuous training – leading to increased knowledge at factory level and avoiding loss of know-how.

- Human-AI teamwork thanks to innovative natural interaction models (considering the e.g. related hardware interfaces and/or collaborative machine tools), enabling to control complexity in cognitive cooperating production systems, including planning activities at shop floor level.

- Interfaces with automation which automatically adapt to the need of the humans including different abilities and different cultural needs.

Proposals should integrate a gender perspective and avoid any type of discrimination in the design and deployment of AI systems and human-machine interaction models, including addressing differences in user needs, such as needs of persons with disabilities, physical and cognitive ergonomics and training pathways. Proposals are also expected to identify and address other potential biases in AI systems to promote inclusive design that ensures safe and effective use by all workers. Human/AI collaboration requires utmost sensitivity to and consideration of human values and consideration of ethical principles as represented in Digital

Humanism, therefore, appropriate consideration must also be given to the contribution of SSH.

This topic is linked to the Apply AI Strategy, therefore proposals should seek collaboration with relevant initiatives.

In addition, proposals are invited to build on the results of past projects on Extended Reality Technologies (XR), such as HORIZON-CL4-2021-HUMAN-01-13, HORIZON-CL4-2021-HUMAN-01-14, HORIZON-CL4-2021-HUMAN-01-25, HORIZON-CL4-2021-HUMAN-01-06, HORIZON-CL4-2021-HUMAN-01-28.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to Destination 'Leadership in materials and production for Europe'.

This topic implements the co-programmed European Partnerships Made in Europe and AI, Data and Robotics.

HORIZON-CL4-2026-02-DIGITAL-EMERGING-53-two-stage: Innovative AI methods and technologies for the process industries (RIA) (Processes4Planet and AI, Data and Robotics partnerships)

Call: INDUSTRY-two-stage	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 4.00 and 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 30.00 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: Applicants submitting a proposal for a blind evaluation (see General Annex F) must not disclose their organisation names, acronyms, logos nor names of personnel in the proposal abstract and Part B of their first-stage application (see General Annex E). In order to include a business case and exploitation strategy, as outlined in the introduction to Destination 'Leadership in materials and production for Europe', the page limit in part B of the General Annexes is exceptionally extended by 3 pages (for second-stage proposals).
Technology Readiness Level	Activities are expected to start at TRL 4-5 and achieve TRL 6 by the end of the project – see General Annex B.

Procedure	The procedure is described in General Annex F. The following exceptions apply: The first-stage proposals of this topic will be evaluated blindly.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [145].

Expected Outcome: Projects are expected to contribute to the following outcomes:

- To develop and demonstrate innovative AI-driven solutions in materials and process development to enhance the competitiveness and sustainability of the process industries by better products and process technologies and reducing the time to market
- To increase the competitiveness of materials production in Europe by AI-supported optimal operation of plants and value networks and early detection of problems and failures
- To improve the working conditions in the plants by using AI technologies, metaverse, and robots.

Scope: Drastically improved AI methods and technologies hold transformative potential for the process industries, enabling advancements in process design, operational efficiency, and faster innovation across the entire lifecycle of plants and products. By using different AI approaches such as multimodal generative AI, foundation models, and agentic AI, the industry can move beyond conventional AI applications as e.g. predictive maintenance and quality control toward more intelligent, adaptive, and creative solutions.

AI-based solutions can deliver value at every stage of the process lifecycle. In design and engineering, they can enable new innovations and accelerate the development process. During operations, AI technologies can be employed to optimize processes, enhance reproducibility, adapt to changing conditions, and provide new forms of support for the workforce and enable autonomous operation. In value chains, AI can help to adapt faster and detect changing

[145] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

customer needs. These capabilities support faster innovation and strengthen competitiveness in a rapidly evolving industrial landscape. However, realizing this potential requires careful consideration of risks related to reliability, security, and trust, ensuring that AI solutions are effective, safe, and responsible.

Proposals should produce dedicated innovative AI-based solutions for the process industry for one of the following scopes:

- More effective and faster development of new materials and processes
- Competitive and sustainable production, reducing the negative environmental impact of industry
- Reduction of risks for the health of the workforce and for the environment and making workplaces in the process industries more attractive.

In the projects, user acceptance and training of the users as well as integration into the OT/IT landscape of the companies should be taken into account, e.g. through active engagement in design, development and integration of systems and processes.

This topic is linked to the Apply AI Strategy, therefore proposals should seek collaboration with relevant initiatives.

Proposals should include a business case and exploitation strategy, as outlined in the introduction to Destination ‘Leadership in materials and production for Europe’.

This topic implements the co-programmed European Partnerships Processes4Planet and AI, Data and Robotics.

Destination: Open Strategic Autonomy in Developing, Deploying and Using Global Space-Based Infrastructure, Services, Applications and Data

Today, EU citizens enjoy watching satellite TV, increasingly accurate global navigation services for all transport modes and users, extended Earth monitoring for land, marine, atmosphere and climate change, global meteorological observation and accurate cartographies of a wide number of variables. Space also makes important contributions to security crisis management and emergency services. The EU Space Programme components (such as EGNSS and Copernicus) are key assets for the EU policies on climate, environment, transport, agriculture and secure society. Finally, the Space sector is a source of economic growth and jobs.

This Destination is structured along the following building blocks:

- Accessing Space, i.e. the ability to transport satellites, cargo, and humans into space; build and launch the required vehicles, including re-usable systems; and operate the related facilities and services.

- Using Space on Earth, i.e. the ability to provide space-based secure communication, navigation and Earth observation services and applications, including through the EU Space flagships Galileo, Copernicus and IRIS^2.

- Monitoring Space, i.e. the ability to detect, track and anticipate the trajectory of spacecraft, Near-Earth objects, and space debris during their full lifetime; to share data with relevant stakeholders; and to provide solutions for safe international space traffic management. It also includes the tracking and anticipation of other impacts on the space environment, such as Space weather events.

- Acting in Space, i.e. the ability to inspect, rendezvous and dock, grasp, repair, refuel, reconfigure, build, assemble and disassemble, reuse/recycle, relocate, remove and transport operational, non-operational, and other objects in space, including platforms or larger structures.

- Exploring Space, i.e. the ability to conduct high profile space exploration activities, perform excellent science and exploit space data to increase our knowledge about the Universe and celestial bodies, with a view to their exploration for scientific and socio-economic benefits.

- Boosting Space, i.e. the ability to sustain the above strategic capabilities through fostering the competitiveness of the EU space sector; improving education and developing the required skills; accelerating the pace of innovation; supporting EU non-dependency on critical technologies; and strengthening international cooperation.

Those building blocks are implemented through the following headings:

- **Heading 1: Accessing Space**

Autonomous access to space is a prerequisite for the strategic autonomy of the EU. It is a key enabler and indispensable element in the space ecosystem and value chain. European launch systems allow the autonomous deployment of satellites for the Union's flagships Copernicus, Galileo/EGNOS and IRIS^2 and contribute to the security and resilience of Europe's sovereign space infrastructure.

In a context of fierce competition and launch services paradigm changes, ensuring that Europe improves the resilience and the cost-effectiveness of its autonomous access to space is crucial. This requires urgent activities to enable and further consolidate operational capacities before 2030 in line with the Strategic R&I Agenda for EU-funded Space research supporting competitiveness adopted in 2020.

This challenge will be tackled by fostering space transportation solutions through the support to building blocks for smart technologies and digital solutions and through facilitating access to European spaceports.

- **Heading 2: Acting in Space**

In-Space Operations and Services (ISOS) will ensure EU's freedom of action in space and increase the resilience, sustainability, safety and protection of its space infrastructure, and contribute to the strengthening of the competitiveness of its space sector. R&I activities should bring Europe to the forefront of emerging service applications, including inspection, rendezvous and docking, grasping, repair, reconfiguration, assembly and disassembly, manufacturing, resource extraction, reuse/recycling, removal and transport of objects in space, for satellites, platforms and larger structures. Key space R&I activities will be driven by a pilot mission that will contribute to establish and foster a new in-space economy.

Game-changing innovations and enabling technologies are at the heart of ISOS and an important focus of future actions. The paradigm shift towards adaptive space systems builds on automation and robotics, artificial intelligence, modular and reconfigurable spacecraft concepts. Together with other enabling technologies such as electric propulsion, intelligent mechanisms and interfaces or advanced GNC, they will provide new ways on how space assets are designed, produced, tested, transported, and operated. Different means realised with AppStore-like approaches will benefit the future space ecosystem and foster a circular economy.

- **Heading 3: Using Space on Earth related to telecommunications**

The Union Secure Connectivity programme aims to develop a secure and autonomous space-based connectivity system for the provision of guaranteed and resilient satellite communications on Earth. Among the objectives are to develop, build and operate a multiorbital space-based state-of-the-art connectivity system, continuously adapted to governmental satellite communications demand evolution; to complement the Union pool of satellite communication capacities and services; and to integrate the GOVSATCOM ground segment infrastructure, as well as the European quantum communication infrastructure (EuroQCI).

In the context of the co-Programmed European Partnership for Globally Competitive Space Systems (Space Partnership), R&I will focus on cohesive activities in the domain of digital developments under the grand heading of Digitalisation for Commercial Space solutions, more specifically on collaborative and synergetic solutions for Earth Observation and Satellite Telecommunication missions.

- **Heading 4: Using Space on Earth related to Earth Observation**

The evolution of Copernicus core services (Climate Change, Marine Environment Monitoring, Land Monitoring, Atmosphere Monitoring, Emergency Management and Security) is being taken care of through projects launched under the previous R&I work programmes.

In the context of the co-Programmed European Partnership for Globally Competitive Space Systems (Space Partnership), R&I will focus on cohesive activities in the domain of digital developments under the grand heading of Digitalisation for Commercial Space solutions, more specifically on collaborative and synergetic solutions for Earth Observation and Satellite Telecommunication missions.

In addition, we will strive to also support the development of innovative applications of Copernicus' services and data. That said, such support is also coming from non-HE activities carried out by EUSPA, the EU agency for the Space Programme: collaboration with receivers' manufacturers, with mobile phones' manufacturers, with cars' manufacturers, etc., as well as through influencing the development of policies where the use of Earth Observation data is required.

- **Heading 5: Using Space on Earth related to satellite navigation**

For Galileo/EGNOS, the international context, the competitive environment with emerging actors including from the private sector, novel techniques in the value chain such as LEO layer for PNT or ground segment automation based on Artificial Intelligence, the increasing threats in space and in cyber, and the evolution of the technologies, components and systems, call for a constant adaptation of the EU space infrastructure to these changing realities.

To meet these challenges, EU needs sustained investments in R&D for innovative mission concepts, technology and systems. These will ensure the continuity of the EGNSS service, minimise the risks for technology inclusion in the infrastructure, thanks to anticipated development and testing including in-orbit, and protect better this infrastructure against modern threats (notably cyber, jamming/spoofing, natural hazards).

These investments in R&D will contribute to maintaining the EU´s leadership position in the Global Navigation Satellite Systems, and to strengthening the strategic autonomy of the EU.

In addition, we will strive to also support the development of innovative applications of EGNSS' services and data. That said, such support is also coming from non-HE activities carried out by EUSPA, the EU agency for the Space Programme: collaboration with receivers' manufacturers, with mobile phones' manufacturers, with cars' manufacturers, etc.,

as well as through influencing the development of policies where the use of satellite navigation data is required.

- **Heading 6: Space sciences and exploration**

Space sciences and exploration are important areas that must be fostered for various reasons, focusing on where the EU can add value with limited financial means. Firstly, it is key to capitalise on Europe's investments in space missions and exploit data coming from European space missions (including demonstration and validation). This should lay the grounds for future exploration missions. Furthermore, such focus on sciences will strengthen the position of leading European scientists and also animate societal interest in space. Last but not least, it will expand human knowledge and the natural curiosity of mankind.

- **Heading 7: Monitoring Space**

Orbital space infrastructure, the data, and the services they deliver have become indispensable for European societies and economies and in the daily lives of Europeans. However, due to an increasingly congested orbital space, the likelihood of a satellite being severely damaged or destroyed in a collision has raised dramatically. Such risk calls for action to preserve European interests by protecting its private and public investments in space in a sustainable manner.

Based on the EU Space Programme, capabilities of the Space Situational Awareness (SSA) component and Space Surveillance and Tracking (SST) services are being developed and consolidated through a Partnership of 15 Member States. The EU SST Partnership Agreement has entered into force on 11 November 2022. With this Partnership, EU SST builds on the good results achieved by the initial consortium of 5 Member States and targets continuity of activities and service provision, improvement of specialisation on expertise, and consideration of the duality and security dimension of SST.

EU SST relies on the European industry, including start-ups, to develop and improve national, public-owned capacities based on Partnership's requirements. In the pursuit of EU strategic autonomy, both as regards the need to protect EU space infrastructures and as regards the need to strengthen EU SST capabilities, research and development activities are aiming the enhancement and consolidation of EU SST autonomy in all orbital zones beyond the existing network of national assets, counting on MS contributions and leveraging complementary contributions from European private capabilities and commercial initiatives.

Importantly, SSA also covers the domains of Space Weather (SW) and Near-Earth Objects (NEO). For those domains, activities are ongoing and no additional ones are needed under the 2026-2027 WP.

- **Heading 8: Boosting space through EU non-dependence for key critical space technologies**

Ensuring non-dependence for critical space technologies is key, especially in the current geo-political context. The European Commission has undertaken several activities and deployed

new tools (e.g. the EU Observatory of Critical Technologies) for assessing space technologies and identify those that are critical from a dependency point of view. Within this domain, a number of technological developments will be initiated with focus on priorities stemming from on-going and planned EU Space missions, including IRIS^2. Emphasis will be on reducing non-EU dependencies on critical space technologies across their whole supply chain from advanced materials to components, equipment, and sub-systems; providing unrestricted access to advanced space technologies relevant for EU space missions and programme components; developing or regaining capacity to operate independently in space by developing resilient space technologies supply chains, relying on EU supply chains and/or trustable and reliable supply chains not affected by non-EU export restrictions; enhancing competitiveness by developing products and capabilities reaching equivalent or superior performance level than those from outside the EU and compete at worldwide level; and opening new opportunities for manufacturers by reducing dependency on export restricted technologies.

- **Heading 9: Boosting Space through innovative space technologies**

Mastering quantum technologies is essential for EU technological sovereignty and their use in EU space missions will offer major improvements in the performance of the EU space systems. Their developments will contribute to EU leadership in this field, in particular quantum sensing technology based on quantum accelerometers, developed in the frame of the Quantum Space Gravimetry pathfinder mission.

- **Heading 10: Boosting Space through IOD/IOV opportunities**

IOD/IOV opportunities continue to be needed for experiments needing aggregation as well as for read-to-fly satellites. This includes the Flight Ticket Initiative to support competitiveness and innovation of the European Space sector.

- **Heading 11: Boosting Space through support to entrepreneurship**

Business development, acceleration and upscaling of start-ups is also much needed, which has given rise to the set-up of the CASSINI Space Entrepreneurship Initiative. CASSINI provides support to business and innovation-friendly ecosystems, including the strengthening business skills in the space market segments and digital services based on space data. CASSINI also aims at making start-ups and scale-ups investment-ready and able to secure venture capital funding and at leveraging synergies with the InvestEU programme and the EU Space Programme.

- **Heading 12: Boosting Space through support to the Space Act and cybersecurity**

The interinstitutional discussions for the adoption of an EU Space Act will start as soon as the Commission has issued its proposal still in 2025. One adopted, it will be important to foresee some studies and assimilated activities to support its implementation. The same goes for the area of cybersecurity which has become extremely important also in the Space domain.

Limiting participation in certain actions to Member States (and certain associated countries to Horizon Europe)

The Space research part of the Horizon Europe Programme is by default open to the world, promoting international cooperation to drive scientific excellence.

However, an important aspect of this Destination consists in ensuring security and strengthening strategic autonomy across key technologies and value chains, taking advantage of the possibilities that space offers for the security of the Union and its Member States. This objective requires special rules in specific cases to set the requisite eligibility and participation conditions to ensure the protection of the integrity, security and resilience of the Union and its Member States. Hence, on an exceptional basis and duly justified, this work programme may foresee a limited participation to entities from selected countries. Such exceptional circumstances would relate to prevalent considerations to safeguard the Union's strategic assets, interests, autonomy or security. Possibilities for such limitations are framed by Article 22(5) of the Horizon Europe Regulation.

Legal entities established in China are not eligible to participate in both Research and Innovation Actions (RIAs) and Innovation Actions (IAs) falling under this Destination. For additional information please see "Restrictions on the participation of legal entities established in China" found in General Annex B of the General Annexes.

The following call(s) in this work programme contribute to this destination:

HORIZON-CL4-2026-03-SPACE

HORIZON-CL4-2027-03-SPACE

HORIZON-CL4-2027-EUSPA-SPACE

Heading 1 - Accessing Space

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-SPACE-03-11: Reinforcing EU autonomous access to space through EU-based spaceports

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 10.00 and 15.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 22.59 million.

Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[146]
Technology Readiness Level	Activities are expected to achieve TRL 8 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Legal and financial set-up of	The rules are described in General Annex G. The following exceptions apply:

[146] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

the Grant Agreements	Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [147].

Expected Outcome: Project results are expected to contribute to all of the following outcomes:

- Reinforcing EU strategic autonomy by reducing non-EU dependencies for accessing space;
- Providing an EU access to space necessary for EU space missions through state of the art and innovative solutions;
- Diversifying the access to space providers in the EU;
- Contributing to expand commercial access to space offers and services in the EU;
- Reinforcing Access to Space to ensure that Europe maintains and improve autonomous, reliable and cost-effective access to space.

Scope: The EU needs to improve the resilience of its access to space for the implementation of EU space programme. New entrants will contribute to this endeavour.

Projects are expected to support EU launch service providers to set up launch pad(s) in the EU territory enabling to perform EU launch services.

Projects are expected to contribute to the development of necessary ground facilities to conduct launch services from the EU territory; e.g. launch integration, storage and operation facilities, launch pad and complex, control command facility, payload processing and integration facilities, tracking means, safety means, propellant storage...

EU launch service provider(s) are expected to be part of the project consortium and be the ultimate users of the resulting facilities making use of EU launch vehicles for providing EU launch services.

Proposals under this topic should explore synergies and be complementary to past actions related to ground segment for launch services, in particular the topics: HORIZON-CL4-2023-SPACE-01-23 and HORIZON-CL4-2025-02-SPACE-11.

All the activities should be complementary with national and ESA on-going or future activities, in particular those decided at the ESA council Ministerial Meeting in November 2025.

[147] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

HORIZON-CL4-2027-SPACE-03-12: Digital solutions for autonomy for space transportation systems, design and simulation tools - Digital enablers and building blocks (Space Partnership)

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 2.00 and 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 5.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries : Canada, New-Zealand, United Kingdom and Switzerland. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application [148]. In any case, the association agreement to the

[148] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

	Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security . Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees. [149]
Technology Readiness Level	Activities are expected to achieve TRL 7-8 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Procedure	The procedure is described in General Annex F. The following exceptions apply: Eligible proposals submitted under this topic and exceeding all the evaluation thresholds will be awarded a STEP Seal [150].
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the

[149] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

[150] https://strategic-technologies.europa.eu/about/step-seal_en

	Research and Training Programme of the European Atomic Energy Community (2021-2025) [151].

Expected Outcome: The topic encompasses actions within the scope of the co-programmed European Partnership on Globally Competitive Space Systems ('Space Partnership') in the areas of satellite communication (SatCom), Earth Observation (EO) and New Commercial Space Transportation Solutions and is part of cohesive activities in the domain of digital developments under the grand heading of "digitalisation for commercial space solutions".

Under the area of *Access to Space* related to New Space Transportation Solutions, this topic focusses on the **maturation of disruptive/game changing digital technologies**[152] required to strengthen competitiveness in this domain.

Project results are expected to contribute to one or several of the following expected outcomes:

- Improved space transportation systems and launcher sustainability, reduced costs and operational constraints as well as enhanced system monitoring and autonomy;
- Innovative technologies for New Space Transportation Solutions, including addressing software and digital tools.

This will contribute to developing, deploying global space-based services applications and data and contribute to fostering the EU's space sector competitiveness and sustainability, as stated in the expected impact of this destination.

Scope: To tackle the above-mentioned expected outcomes, R&I is expected to address the maturation of disruptive/game changing digital technologies required to strengthen competitiveness in this domain and sustainability by assessing the impact of these technologies (e.g. by allowing the monitoring of sustainable solutions). More specifically, R&I in one or more of the following areas are expected to be addressed:

- Autonomy, data fusion, navigation, mission planning, and more specifically advanced algorithms for process automation and autonomous flight termination systems;
- Eco-design guidelines for end-to-end aspects and software design tools, and more specifically digital models of the launch system through the use of Model-Based System Engineering, and modelling/simulation of space activity impact on atmosphere;
- Landing solutions for reusability, specifically navigation data fusion for autonomous landing.

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151 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

152 **Identified in the Strategic Research and Innovation Agenda (SRIA) of the co-Programmed European Partnership on Globally Competitive Space Systems (https://www.space-aisbl.org/sria/)**

Proposals are expected to promote cooperation between different actors (industry, SMEs, research institutions and academia) and consider opportunities to quickly turn technological innovation into commercial use in space.

It is expected that projects make use of existing EU technologies and/or building blocks, including at component level, contributing to EU non-dependence and strengthening competitiveness, and this should be clearly presented in the proposal. Furthermore, proposed activities should be complementary to H2020 and Horizon Europe funded projects, national activities and activities funded by the European Space Agency (ESA).

This topic contributes to the implementation of the co-programmed European Partnership on 'Globally Competitive Space Systems' (GCSS).

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

Heading 2 - Acting in Space

Proposals are invited against the following topic(s):

HORIZON-CL4-2027-SPACE-03-21: ISOS4I Pilot Mission Integrated Ground Test and consolidation of space-compatible USI solutions

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.50 and 3.92 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 3.92 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: The page limit of the application is 45 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).

	In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees.[153] The following additional eligibility criteria apply: beneficiaries must include the beneficiaries of the ISOS Pilot Mission Coordination & Support Action, awarded under Other actions not subject to calls for proposals, from the Horizon Europe Cluster 4 Work Programme 2025, as commanded by the nature and objectives of the topic.
Technology Readiness Level	Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B. Activities may start at any TRL. [delete second sentence only if really necessary]
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions.
Legal and financial set-up of the Grant	The rules are described in General Annex G. The following exceptions apply:

153 The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

Agreements	Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [154].
Security Sensitive Topics	Some activities resulting from this topic may involve using classified background and/or producing of security sensitive results (EUCI and SEN). Please refer to the related provisions in section B Security — EU classified and sensitive information of the General Annexes.

Expected Outcome: The strategic objective of this topic is to develop capabilities to 'Act in Space' through demonstrating in space a pilot mission by 2030 related to ISOS. The envisaged ISOS pilot mission shall provide the necessary seed components for a future service infrastructure, available to the European in-space ecosystem (including the EU assets), driving the generation of a new in-space economy, providing enhanced in-orbit technology demonstration and maximising EU technology non-dependence.

This pilot mission will largely contribute to ensure EU's freedom of action in space, increase the resilience and protection of EU assets in space and foster the development of the new in-space economy. A pioneering and a novel mission concept, which is unique compared to other initiatives among all space-faring nations is envisaged. The mission will build on previous R&I with an operational mission concept, focusing on application and service demonstration, with a concrete view to commercial and governmental usage. The detailed mission concept has been derived in close coordination with EU Member States and EEA countries through a dedicated Pilot Mission Advisory Group (PMAG).

This topic addresses the validation of the developed ISOS4I mission components in an integrated ground test. The setup will integrate all mission components in a suitable test environment, including necessary simulation and control of the engineering/qualification models. Furthermore, the topic will address the qualification and verification of the Universal Service Interface (USI) solution(s) identified through the consolidation work done in the CSA[155]. Moreover, the activity shall support public outreach activities for the ISOS4I pilot mission.

Project results are expected to contribute to the following outcomes, in close and continuous coordination with the European Commission services and the EU Member States through the ISOS Expert Group[156]:

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154 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

155 ISOS Pilot Mission Coordination and Support Action (HE CL4 Work Programme 2025)

156 Space Policy Expert Group - sub-group on ISOS

- An in-space economy, building on innovative technologies and concepts for a sustainable infrastructure and value-adding services in space, e.g. plug-and-play spacecraft functionality introducing recycling/re-use of spacecraft modules/functionalities, and satellite upgrades and payload exchange for mission adaptivity;

- ISOS4I pilot mission preparation up to detailed mission and system detail design, and ground demonstrator, as well as promotion of the mission to the wider public.

- Consolidated and space-verified USI solution(s) for European space actors

This topic will contribute to, in the medium to long term, developing, deploying global space-based services and contribute to fostering the European space sector competitiveness, as stated in the expected impact of this destination.

Scope: To tackle the above expected outcomes, the following R&I actions should be addressed in the shortest possible timeframe taking into account the provided technical annex[157]:

- Supporting the ISOS Pilot mission detailed mission and system design, demonstrating in an integrated ground test (TRL6) and a virtual testbed (System-of-Systems simulation) the interoperability of the developed mission components ground prototypes (i.e., Servicing, HOST, Logistic and satAPPs) with all applicable servicing interfaces and the baseline demonstration scenarios as defined in the technical annex (the applicable servicing interfaces should include the USI solutions to be further matured in this topic, as well as the refuelling interfaces to be further matured in topic HORIZON-CL4-2026-SPACE-03-86);

- Final maturation, verification and qualification (TRL7) of the consolidated USI solution(s) recommended by the ISOS Pilot Mission Coordination and Support Action, considering opportunities for IOD/V;

- Development of a ISOS4I promotion video and VR experience for dissemination purposes, showcasing the pilot mission concept with its baseline demonstration scenario and the evolution towards an in-space service infrastructure leading to manifold business opportunities as part of a wider in-space economy.

Proposals are expected to promote cooperation between different actors (industry, SMEs and research institutions) and consider opportunities to quickly turn technological innovation into commercial use.

Proposals should clearly describe how previous and/or ongoing R&I of the mission components and any required additional technologies for the proposed ground test will be integrated and involve entities part of the key technology and service provider group, as necessary. Moreover, proposals should clearly identify the test facility/ies to be used for the

[157] ISOS Pilot Mission Guidance Document

ground demonstrator. Finally, proposals should build on the outcome of the CSA activities on (1) “Proposal for an as much as possible integrated ground demonstrator bringing together the different mission components at the end of their detailed design phase” and (2) “Proposal for USIs consolidation, i.e., selection of a single USI European solution or approach allowing compatibility with multiple solutions (required for the HC)”.

Activities are expected to achieve TRL 6-7 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.

Proposals are expected to consider and contribute to a balanced provision of Member States’ and eligible Associated Countries’ expertise and capabilities to the overall ISOS pilot mission, to support a successful introduction of the strategic capacity ‘Act in Space’.

The project selected from this topic will be a Linked Action and is expected to closely collaborate with those selected under topics HORIZON-CL4-2025-02-SPACE-21, 22, 23, 24 and ISOS Pilot Mission Coordination and Support Action, in order to ensure interoperability and the necessary and sufficient documentation and information sharing for the implementation of the Pilot Mission, to make economies of scale in sharing best practices, defining common processes for addressing the different challenges, ensuring efficient monitoring and review, organising dissemination and communication activities, etc.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

Heading 3 - Using Space on Earth - Telecommunications

For a description of topics/actions related to the development of IRIS^2, please refer to "Indirectly managed actions by ESA" in the section "Other Actions" of this work programme.

Headings 3&4 - Using Space on Earth - Telecommunications and Earth Observation

In addition to the below, for downstream activities on Copernicus, please refer to “Indirectly managed actions by EUSPA” in the section "Other Actions" of this work programme.

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-SPACE-03-31: Digital enablers and building-blocks for Earth Observation and Satellite telecommunication for Space solutions (Space Partnership)

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and

	selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, New-Zealand, United Kingdom and Switzerland. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application [158]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or

[158] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

	partially owned or controlled by a high-risk supplier) cannot submit guarantees.[159]
Technology Readiness Level	Activities are expected to achieve TRL 4-5 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering all the development areas described in the scope section, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked within each development area, provided that the applications attain all thresholds
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [160].

Expected Outcome: The topic encompasses actions within the scope of the co-programmed European Partnership on Globally Competitive Space Systems ('Space Partnership') in the areas of satellite communication (SatCom), Earth Observation (EO) and New Commercial Space Transportation Solutions and is part of cohesive activities in the domain of digital developments under the grand heading of "digitalisation for commercial space solutions".

Digitalisation is a major enabler for enhancing the value of an End-to-End EO and SatCom system. Under the area of *Using Space on Earth* related to SatCom and EO, below this topic

159 The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

160 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

focus on the fast increment of the **Low to Mid TRL level building blocks for key technologies**[161] required to strengthen competitiveness in these domains.

Projects are expected to contribute to one or several of the following outcomes:

- New commercial services and applications enabled by increased digitalisation of space solutions;
- Favouring a competitive and sustainable European Space Sector;
- Enable the European Space Industry to maintain a significant share of the global connectivity market;
- Next generation Earth observation and SatCom payloads, technologies and processing means (on ground and in space);
- Security of SatCom and EO services, supporting next-generation technologies for both ground and space commercial applications;
- Improved access to satellite data through interoperable systems.

This will contribute to developing, deploying global, more flexible and reactive space-based services applications, to contribute to fostering the EU's space sector competitiveness, as stated in the expected impact of this destination.

Scope: The areas of R&I, which needs to be addressed to tackle the above-mentioned expected outcomes are:

- R&I on End-to-End SatCom Mission capabilities for current and future satellite networks interoperability including both space and ground-based assets, and digital on-ground infrastructure to test and enhance operational efficiency;
- R&I on Earth Observation equipment, subsystems, applications and services, improving the End-to-End timeliness of an EO system and enhanced resolution, miniaturisation of instrument designs and digital techniques and technologies to support operations and harmonisation enabling interoperability among multiple EO missions;
- R&I on building blocks and processes common to EO and SatCom systems, such system resources usage optimisation, high-performance processing payload H/W to support space network capabilities including an improvement in downlink and tasking capabilities of the European infrastructure, RF and optical hybrid ground stations for anchoring services and quantum technologies adaptation for space application.

Proposals may contribute to one or more of the above R&I areas, however the main area addressed must be clearly and unambiguously identified in the proposal text.

[161] Identified in the Strategic Research and Innovation Agenda (SRIA) of the co-Programmed European Partnership on Globally Competitive Space Systems (https://www.space-aisbl.org/sria/)

Proposals are expected to promote cooperation between different actors (industry, SMEs, research institutions and infrastructures and academia) and consider opportunities to quickly turn technological innovation into commercial use in space.

It is expected that projects make use of existing EU technologies and/or building blocks, including at component level, contributing to EU non-dependence and strengthen competitiveness, and this should be clearly presented in the proposal. Furthermore, proposed activities should be complementary to H2020 and Horizon Europe funded projects, national activities and activities funded by the European Space Agency (ESA).

This topic contributes to the implementation of the European Partnership on 'Globally Competitive Space Systems' (GCSS).

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

HORIZON-CL4-2026-SPACE-03-32: Preparing demonstration missions for Earth Observation and Satellite telecommunication for Space solutions (Space Partnership)

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 10.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 26.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of

	the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[162]
Technology Readiness Level	Activities are expected to achieve TRL 7-8 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Procedure	The procedure is described in General Annex F. The following exceptions apply: Eligible proposals submitted under this topic and exceeding all the evaluation thresholds will be awarded a STEP Seal [163]. To ensure a balanced portfolio covering all the development areas described in the scope section, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked within each development area, provided that the applications attain all thresholds
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the

[162] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

[163] https://strategic-technologies.europa.eu/about/step-seal_en

	Research and Training Programme of the European Atomic Energy Community (2021-2025) [164].
Security Sensitive Topics	Some activities resulting from this topic may involve using classified background and/or producing of security sensitive results (EUCI and SEN). Please refer to the related provisions in section B Security — EU classified and sensitive information of the General Annexes.

Expected Outcome: The topic encompasses actions within the scope of the co-programmed European Partnership on Globally Competitive Space Systems ('Space Partnership') in the areas of satellite communication (SatCom), Earth Observation (EO) and New Commercial Space Transportation Solutions and is part of cohesive activities in the domain of digital developments under the grand heading of "digitalisation for commercial space solutions".

Digitalisation is a major enabler for enhancing the value of an End-to-End EO and SatCom system. Under the area of *Using Space on Earth* related to SatCom and EO, below this topic focusses on the **Mid to High TRL level developments of key technologies**[165] required to strengthen competitiveness in these domains, contributing to the preparation of EO and SatCom demonstration missions.

Projects are expected to contribute to one or several of the following outcomes:

- Favouring a competitive and sustainable European Space Sector;
- Enable the European Space Industry to maintain a significant share of the global connectivity market;
- Advanced Earth observation and SatCom payloads, technologies and processing means (on ground and in space);
- Advanced EO and SatCom fostering AI across space system;
- Enhanced security of SatCom and EO services, supporting advanced technologies for both ground and space commercial applications;
- End-to-end demonstrator for collaborative Earth Observation and Satellite telecommunication for Space solutions.

This will contribute to developing, deploying global, more flexible and reactive space-based services applications, to contribute to fostering the EU's space sector competitiveness, as stated in the expected impact of this destination.

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164 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

165 Identified in the Strategic Research and Innovation Agenda (SRIA) of the co-Programmed European Partnership on Globally Competitive Space Systems (https://www.space-aisbl.org/sria/)

Scope: The areas of R&I, which needs to be addressed to tackle the above-mentioned expected outcomes are:

- R&I on End-to-End SatCom Mission capabilities, secure SatCom services and satellites as network nodes in a distributed system, radio-frequency payloads, flexible and modular testbed for complex satcom system architectures to assess performances, testbed for processing RF signal directly onboard the spacecraft, compatibility of the different elements and operations concepts;

- R&I on LEO or VLEO earth observation equipment, subsystems, applications and services enabling real time reaction (e.g. use cases requiring low latency), on on-board processing to optimize EO missions' performance or timeliness, EO ground segment interfaces and data flow standardisation and adoption, smart multi-source EO intelligence information fusion also on ground;

- R&I on synergetic technologies, building blocks and processes with applicability across both EO and SatCom next generation operation systems such as operational optimisation for increasing lifetime, design optimisation for increasing efficiency and advanced techniques for large system of systems or multi-mission operation optimisation, as well as tip & cue demonstration combining RF and EO using inter-satellite links (including optical).

Developments should aim at EO and Telecom technologies on-ground in relevant environment and in orbit software demonstration when flight is feasible and adding value focusing on software and digital tools (e.g. algorithms, functions).

Proposals may contribute to one or more of the above R&I areas, however the main area addressed should be clearly and unambiguously identified in the proposal text.

Proposals are expected to promote cooperation between different actors (industry, SMEs, research institutions and infrastructures and academia) and consider opportunities to quickly turn technological innovation into commercial use in space via e.g., on-ground relevant environment or in orbit demonstration.

It is expected that projects make use of existing EU technologies and/or building blocks, including at component level, contributing to EU non-dependence and strengthen competitiveness, and this should be clearly presented in the proposal. Furthermore, proposed activities should be complementary to H2020 and Horizon Europe funded projects, national activities and activities funded by the European Space Agency (ESA).

This topic contributes to the implementation of the European Partnership on 'Globally Competitive Space Systems' (GCSS).

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

HORIZON-CL4-2027-SPACE-03-33: Digital enablers and building blocks for collaborative Earth Observation and Satellite telecommunications for Space solutions (Space Partnership)

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 1.50 and 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 4.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries : Canada, New-Zealand, United Kingdom and Switzerland. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application [166]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of

[166] See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

	the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security . Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees. [167]
Technology Readiness Level	Activities are expected to achieve TRL 4-5 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [168].

Expected Outcome: The topic encompasses actions within the scope of the co-programmed European Partnership on Globally Competitive Space Systems ('Space Partnership') in the areas of satellite communication (SatCom), Earth Observation (EO) and New Commercial Space Transportation Solutions and is part of cohesive activities in the domain of digital developments under the grand heading of "digitalisation for commercial space solutions".

[167] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

[168] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Digitalisation is a major enabler for enhancing the value of an End-to-End EO and SatCom system. Under the area of *Using Space on Earth* related to SatCom and EO, below this topic focusses on the **Low to Mid TRL level developments of key technologies**[169] required to strengthen competitiveness in these domains with a dedicated focus on synergies between Earth observation and Satellite telecommunication technologies.

Projects are expected to contribute to one or several of the following outcomes:

- Next generation Earth observation and SatCom payloads, technologies and processing means (on ground and in space);
- Security of SatCom and EO services, supporting next-generation technologies for both ground and space commercial applications.

This will contribute to developing, deploying global, more flexible and reactive space-based services applications, to contribute to fostering the EU's space sector competitiveness, as stated in the expected impact of this destination.

Scope: The areas of R&I, which needs to be addressed to tackle the above-mentioned expected outcomes are:

- R&I on End-to-End SatCom Mission capabilities for increased robustness, energy efficient connectivity and compatibility with 5G & 6G waveforms such as constellation and network software management systems and optical communications, including both space and ground-based assets, and digital on-ground infrastructure to test and enhance operational efficiency;
- R&I on building blocks and processes common to EO and SatCom systems allowing for in-orbit reconfigurability, faster data availability, on-board and on-ground smart computing and improved operation resilience.

Proposals should address at least one of the areas outlined above.

Proposals are expected to promote cooperation between different actors (industry, SMEs, research institutions and infrastructures and academia) and consider opportunities to quickly turn technological innovation into commercial use in space.

It is expected that projects make use of existing EU technologies and/or building blocks, including at component level, contributing to EU non-dependence and strengthen competitiveness, and this should be clearly presented in the proposal. Furthermore, proposed activities should be complementary to H2020 and Horizon Europe funded projects, national activities and activities funded by the European Space Agency (ESA).

This topic contributes to the implementation of the European Partnership on ‘Globally Competitive Space Systems’ (GCSS). As such, projects resulting from this topic will be

[169] Identified in the Strategic Research and Innovation Agenda (SRIA) of the co-Programmed European Partnership on Globally Competitive Space Systems (https://www.space-aisbl.org/sria/)

expected to report on results to the European Partnership 'Globally Competitive Space Systems' (GCSS) in support of the monitoring of its KPIs.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

HORIZON-CL4-2027-SPACE-03-34: Preparing demonstration missions for collaborative Earth Observation and Satellite telecommunication for Space solutions (Space Partnership)

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 10.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 26.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities established in an eligible country, but which are directly or

	indirectly controlled by China or by a legal entity established in China cannot submit guarantees.[170]
Technology Readiness Level	Activities are expected to achieve TRL 7-8 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Procedure	The procedure is described in General Annex F. The following exceptions apply: Eligible proposals submitted under this topic and exceeding all the evaluation thresholds will be awarded a STEP Seal [171]. To ensure a balanced portfolio covering all the development areas described in the scope section, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked within each development area, provided that the applications attain all thresholds.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [172].
Security Sensitive Topics	Some activities resulting from this topic may involve using classified background and/or producing of security sensitive results (EUCI and SEN). Please refer to the related provisions in section B Security — EU classified and sensitive information of the General Annexes.

170 The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

171 https://strategic-technologies.europa.eu/about/step-seal_en

172 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Expected Outcome: The topic encompasses actions within the scope of the co-programmed European Partnership on Globally Competitive Space Systems ('Space Partnership') in the areas of satellite communication (SatCom), Earth Observation (EO) and New Commercial Space Transportation Solutions and is part of cohesive activities in the domain of digital developments under the grand heading of "digitalisation for commercial space solutions".

Digitalisation is a major enabler for enhancing the value of an End-to-End EO and SatCom system. Under the area of *Using Space on Earth* related to SatCom and EO, below this topic focusses on the **Mid to High TRL level developments of key technologies**[173] required to strengthen competitiveness in these domains, contributing to the preparation of EO and SatCom demonstration missions.

Projects are expected to contribute to one or several of the following outcomes:

- Favouring a competitive and sustainable European Space Sector;
- Enable the European Space Industry to maintain a significant share of the global connectivity market;
- Advanced Earth observation and SatCom payloads, technologies and processing means (on ground and in space);
- Advanced EO and SatCom fostering AI across space system;
- Enhanced security of SatCom and EO services, supporting advanced technologies for both ground and space commercial applications;
- End-to-end demonstrator for collaborative Earth Observation and Satellite telecommunication for Space solutions.

This will contribute to developing, deploying global, more flexible and reactive space-based services applications, to contribute to fostering the EU's space sector competitiveness, as stated in the expected impact of this destination.

Scope: The areas of R&I, which needs to be addressed to tackle the above-mentioned expected outcomes are:

- R&I on End-to-End SatCom Mission capabilities, secure satcom services and satellites as network nodes, and digital on-ground infrastructure to test and enhance operational efficiency;
- R&I on Earth Observation equipment, subsystems, applications and services, improving data processing for performance or timeliness, smart multi-sources EO data fusion, fostering interoperability among EO missions, miniaturisation of instrument designs and EO ground segment interfaces, digitalised technology steps such as high-performance

[173] Identified in the Strategic Research and Innovation Agenda (SRIA) of the co-Programmed European Partnership on Globally Competitive Space Systems (https://www.space-aisbl.org/sria/)

cloud-based architectures and active and adaptative optics and/or higher-power electronics;

- R&I on building blocks and processes common to EO and SatCom systems, such as on-board processing capabilities, maturing high performance processing payload H/W to support space network capabilities and reducing environmental impact of future missions, maturation of technologies and products improving system security and threats identification, characterization and possible mitigation and RF and optical hybrid ground stations for anchoring services.

Proposals may contribute to one or more of the above R&I areas, however the main area addressed are expected to be clearly and unambiguously identified in the proposal text. To ensure a balanced portfolio covering the three areas described above, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked within each area, provided that the applications attain all thresholds. For the purposes of the ranking the main area declared by the proposal will be considered.

Proposals are expected to promote cooperation between different actors (industry, SMEs, research institutions and infrastructures and academia) and consider opportunities to quickly turn technological innovation into commercial use in space via e.g., on-ground relevant environment or in orbit demonstration.

It is expected that projects make use of existing EU technologies and/or building blocks, including at component level, contributing to EU non-dependence and strengthen competitiveness, and this should be clearly presented in the proposal. Furthermore, proposed activities should be complementary to H2020 and Horizon Europe funded projects, national activities and activities funded by the European Space Agency (ESA).

This topic contributes to the implementation of the European Partnership on ‘Globally Competitive Space Systems’ (GCSS). As such, projects resulting from this topic will be expected to report on results to the European Partnership ‘Globally Competitive Space Systems’ (GCSS) in support of the monitoring of its KPIs.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

Heading 5 - Using Space on Earth - Satellite navigation

For a description of topics related to the development of Galileo and EGNOS, please refer, on the one hand, to "Indirectly managed actions by ESA" in the section "Other Actions" of this work programme and, on the other hand, to “Indirectly managed actions by EUSPA” in the section "Other Actions" of this work programme.

Heading 6 - Space sciences and exploration

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-SPACE-03-61: Scientific analysis and exploitation of space data

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 1.50 and 2.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 3.92 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Technology Readiness Level	Activities are expected to achieve TRL 4 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [174].

Expected Outcome: Project results are expected to contribute to the following expected outcomes:

- European space science breakthroughs fostered by data analysis and exploitation of European missions (incl. low-cost/small satellite) and instruments, in conjunction, when relevant, with international missions. This data may also originate from European in-orbit validation experiments with a focus on space science and exploration.

[174] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- A higher number of European scientific publications based on space data, high-level data products made available through appropriate archives, and tools and methods developed for the advanced processing of data.

- Increased collaboration of scientific teams both within and outside Europe across different domains, adding value to existing activities on European and international levels and enhancing and broadening research partnerships.

- European scientific excellence and development of leading-edge scientific research in Europe.

Scope: The aim of this topic is the analysis (including validation) and exploitation of acquired and available data provided by scientific and exploration instruments and missions in their pre-operative, operative, post-operative or data exploitation phase, focusing on astronomy and astrophysics, cosmology, heliophysics, deep space and solar system exploration, ensuring complementarity with activities already supported by agencies during development phases. Such data may also originate from CubeSat and small satellite missions for advancing space science and exploration.

More specifically, data to be analysed are expected to result from science and exploration missions (including cubesat to small satellite missions) from ESA, national space agencies, research organisations and universities missions. Earth observing missions are not considered in the scope of this topic. This analysis may require innovative and advanced data processing techniques, the use of advanced artificial intelligence techniques, novel statistical approaches, multidimensional data fusion while optimizing the use of advanced computing hardware architectures, as well as novel data (re)presentation and visualization techniques.

Projects may rely on data available through ESA Space Science Archives when possible or other means (e.g. instrumentation teams). Combination and correlation of this data with international scientific mission data, as well as with relevant data produced by ground-based infrastructures all over the world, is encouraged to further increase the scientific return and to enable new research activities using existing data sets. These activities shall add scientific value through analysis of the data, leading to scientific publications and higher-level data products, tools and methods. When possible, enhanced data products should be suitable for feeding back into the ESA Space Science archives. Resulting analyses should help preparing future European and international missions.

International cooperation is encouraged in particular with countries active in space exploration and space science.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

Heading 7 - Monitoring Space

For a description of topics related to SST, please refer to "Identified beneficiaries" in the section "Other Actions" of this work programme.

Heading 8 - Boosting Space through EU non-dependence for critical space technologies

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-SPACE-03-81: Space critical EEE components for EU non-dependence – Radiation Hard FPGA on 7nm

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 12.00 and 13.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 12.74 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: The page limit of the application is 80 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees

	positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[175]
Technology Readiness Level	Activities are expected to achieve TRL 6 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions.
Security Sensitive Topics	Some activities resulting from this topic may involve using classified background and/or producing of security sensitive results (EUCI and SEN). Please refer to the related provisions in section B Security — EU classified and sensitive information of the General Annexes.

Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Reinforcing EU strategic autonomy by reducing non-EU dependencies on critical space EEE components and related technologies across their entire supply chain;
- Providing unrestricted access to critical space EEE components and related technologies relevant for EU space missions (Galileo, EGNOS, Copernicus, IRIS^2 and EU pilot missions on In-Orbit Space Operations and Quantum Gravimetry);
- Developing or regaining capacity to operate independently in space by developing resilient space EEE components and related technologies supply chains, relying on EU supply chains and/or trustable and reliable supply chains not affected by non-EU export restrictions;

[175] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

- Enhancing competitiveness by developing products and capabilities reaching equivalent or superior performance level than those from outside the EU and compete at worldwide level.

Scope: Unrestricted access to state-of-art space EEE components and related technologies is a pre-requisite for the EU space industry responding to EU space missions. However, especially for some families of components, the available solutions in EU do not meet the current high-performance space requirements. Currently, alternative products sourced from outside EU, are either affected by non-EU export control, that limits its use, or present challenges in terms of trustable supply chains for the implementation of EU space missions with a security dimension.

Within the frame of this topic, it is expected to finance and implement a development project aiming at maturing critical space EEE components with the final goal of lowering the dependency from outside EU. This will be done by establishing a long-term sustainable supply chain for supporting EU strategic autonomy in the space sector. The selection of the supply chains shall reflect this objective. Therefore, the supply chain shall preferably be built fully based in EU and when this can only be achieved partially (i.e. because of lack of current EU capabilities for unrestricted advanced semiconductor processes or advanced materials that cannot be developed within the project), services procured from outside EU shall nevertheless ensure that the overall supply chain will remain trustable and not affected by non-EU export control. The latest scenario is subject to the approval of the granting authority.

The space EEE component and related technologies relevant for this topic has been identified based on needs related to strategic institutional space programs, inputs from European stakeholders and the EU Observatory of Critical Technologies. It is **radiation hard FPGA on 7nm**. Further details will be provided at the latest at the opening of the Call, in a Guidance document published on the Funding & Tenders Portal.

Space is a low volume market affected by a dynamic industrial landscape compared to the terrestrial market therefore, technological spin in and/or bilateral collaborations should be enhanced between European non-space and space industries. Furthermore, proposed activities should be complementary to relevant national or other activities at European level. Complementary activities should be clearly identified, described and the proposal should report how the complementarity is ensured.

To achieve the non-dependence objective, applicants are expected to include a dedicated proposal's paragraph covering:

- The description of the technology and/or technology processes and high-level breakdown of the space EEE component supply chain to be used. Applicants should demonstrate that the supply chain and final product are free of any legal export restrictions or limitations, such as those established in the International Traffic in Arms Regulations (ITAR) or equivalent instruments applicable in other non-EU jurisdictions. Applicants shall also report, in a dedicated subsection, if and which part of the supply

chain is affected by non-EU export controls such as the Export Administration regulation (EAR) i.e. EAR99.

- The description of the suitable technology development process that has been identified and set up within the consortium for avoiding export restrictions of non-EU states and assess vulnerabilities of the supply chain.

Proposals covering space EEE components and related technology developments that are targeting a final TRL equal or higher than 5 should include a list of proposed applicable standards or technical guidance (e.g. EN, ECSS, ESCC, MIL, JEDEC,…) that are considered relevant for implementing a formal space evaluation and/or qualification. Additionally, projects that aim at a formal space qualification should include as deliverable the full data pack planned to be submitted to the qualification authority. This deliverable should be marked sensitive. Hardware that will successfully complete the space evaluation/qualification is expected promote the EU support by displaying the EU emblem on the package.

The proposal is expected to include specific tasks as part of the work plan and related dedicated confidential deliverables to be provided within six months from the start of the project, with the objective of:

1. Analysing and describing, **in detail**, the full supply chain, each entity and its role in the supply chain, level of criticality and, if relevant, identify dependencies from outside EU;

2. Describing the industrial technical roadmap and a business plan for commercialization with accurate understanding of applications needs, space mission insertion, including time to market indication, of the developed product.

3. Reporting the list of relevant non-EU export control with extra territorial applicability for the specific technology/product under development, independently from the supply chain established for the EU-COM project.

4. Undertaking a comprehensive literature review of the relevant technology/product reporting the state-of-the-art and highlighting potential gaps between current EU solutions and competition from outside EU.

Unless otherwise agreed with the granting authority, beneficiaries must ensure that none of the entities that participate as subcontractors are established in countries which are not eligible as set out in the call conditions.

The consortium as a whole and individual beneficiaries should ensure that, for a period of up to four years after the end of the project, supply and availability of the hardware, manufacturing, assembly processes developed and/or qualified within the project should be made available to any entity in the EU plus Norway and Iceland, at fair and reasonable market prices and conditions and with no legal restrictions and limitations stemming for example from International Traffic in Arms Regulations (ITAR) or equivalent instruments applicable in non-EU jurisdictions. Additionally, beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority before the intended transfer

or licensing takes place; the granting authority may, up to four years after the end of the project, object to a transfer of ownership or the exclusive licensing of results.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content is not relevant.

HORIZON-CL4-2026-SPACE-03-82: Space critical EEE components for EU non-dependence – GaN MMICs mm-Wave Foundations (Phase A): Development and Industrialization of Semi-insulating SiC Substrate Capabilities

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 6.00 and 7.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 6.86 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: The page limit of the application is 80 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their

	participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[176]
Technology Readiness Level	Activities are expected to achieve TRL 5 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions.
Security Sensitive Topics	Some activities resulting from this topic may involve using classified background and/or producing of security sensitive results (EUCI and SEN). Please refer to the related provisions in section B Security — EU classified and sensitive information of the General Annexes.

Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Reinforcing EU strategic autonomy by reducing non-EU dependencies on critical space EEE components and related technologies across their entire supply chain;
- Providing unrestricted access to critical space EEE components and related technologies relevant for EU space missions (Galileo, EGNOS, Copernicus, IRIS^2 and EU pilot missions on In-Orbit Space Operations and Quantum Gravimetry);
- Developing or regaining capacity to operate independently in space by developing resilient space EEE components and related technologies supply chains, relying on EU supply chains and/or trustable and reliable supply chains not affected by non-EU export restrictions;

[176] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

- Enhancing competitiveness by developing products and capabilities reaching equivalent or superior performance level than those from outside the EU and compete at worldwide level.

Scope: Unrestricted access to state-of-art space EEE components and related technologies is a pre-requisite for the EU space industry responding to EU space missions. However, especially for some families of components, the available solutions in EU do not meet the current high-performance space requirements. Currently, alternative products sourced from outside EU, are either affected by non-EU export control, that limits its use, or present challenges in terms of trustable supply chains for the implementation of EU space missions with a security dimension.

Within the frame of this topic, it is expected to finance and implement a development project aiming at maturing critical space EEE components with the final goal of lowering the dependency from outside EU. This will be done by establishing a long-term sustainable supply chain for supporting EU strategic autonomy in the space sector. The selection of the supply chains shall reflect this objective. Therefore, the supply chain shall preferably be built fully based in EU and when this can only be achieved partially (i.e. because of lack of current EU capabilities for unrestricted advanced semiconductor processes or advanced materials that cannot be developed within the project), services procured from outside EU shall nevertheless ensure that the overall supply chain will remain trustable and not affected by non-EU export control. The latest scenario is subject to the approval of the granting authority.

The space EEE component and related technologies relevant for this topic represent a direct implementation of the EU Observatory of Critical Technologies (OCT) Technology Roadmap, named GaN for RF and mm-wave Space and Defence Applications: industrial development of an EU-based source of **semi-insulating SiC substrates addressing the 100/150mm**. Further details will be provided at the latest at the opening of the Call, in a Guidance document published on the Funding & Tenders Portal.

Space is a low volume market affected by a dynamic industrial landscape compared to the terrestrial market therefore, technological spin in and/or bilateral collaborations should be enhanced between European non-space and space industries. Furthermore, proposed activities should be complementary to relevant national or other activities at EU level. Complementary activities should be clearly identified, described and the proposal should report how the complementarity is ensured.

To achieve the non-dependence objective, applicants are expected to include a dedicated proposal's paragraph covering:

- The description of the technology and/or technology processes and high-level breakdown of the space EEE component supply chain to be used. Applicants should demonstrate that the supply chain and final product are free of any legal export restrictions or limitations, such as those established in the International Traffic in Arms Regulations (ITAR) or equivalent instruments applicable in other non-EU jurisdictions. Applicants shall also report, in a dedicated subsection, if and which part of the supply

chain is affected by non-EU export controls such as the Export Administration regulation (EAR) i.e. EAR99.

- The description of the suitable technology development process that has been identified and set up within the consortium for avoiding export restrictions of non-EU states and assess vulnerabilities of the supply chain.

Proposals covering space EEE components and related technology developments that are targeting a final TRL equal or higher than 5 should include a list of proposed applicable standards or technical guidance (e.g. EN, ECSS, ESCC, MIL, JEDEC,…) that are considered relevant for implementing a formal space evaluation and/or qualification. Additionally, projects that aim at a formal space qualification should include as deliverable the full data pack planned to be submitted to the qualification authority. This deliverable should be marked sensitive. Hardware that will successfully complete the space evaluation/qualification is expected promote the EU support by displaying the EU emblem on the package.

The proposal is expected to include specific tasks as part of the work plan and related dedicated confidential deliverables to be provided within six months from the start of the project, with the objective of:

1. Analysing and describing, **in detail**, the full supply chain, each entity and its role in the supply chain, level of criticality and, if relevant, identify dependencies from outside EU;

2. Describing the industrial technical roadmap and a business plan for commercialization with accurate understanding of applications needs, space mission insertion, including time to market indication, of the developed product.

3. Reporting the list of relevant non-EU export control with extra territorial applicability for the specific technology/product under development, independently from the supply chain established for the EU-COM project.

4. Undertaking a comprehensive literature review of the relevant technology/product reporting the state-of-the-art and highlighting potential gaps between current EU solutions and competition from outside EU.

Unless otherwise agreed with the granting authority, beneficiaries must ensure that none of the entities that participate as subcontractors are established in countries which are not eligible as set out in the call conditions.

The consortium as a whole and individual beneficiaries should ensure that, for a period of up to four years after the end of the project, supply and availability of the hardware, manufacturing, assembly processes developed and/or qualified within the project should be made available to any entity in the EU plus Norway and Iceland, at fair and reasonable market prices and conditions and with no legal restrictions and limitations stemming for example from International Traffic in Arms Regulations (ITAR) or equivalent instruments applicable in non-EU jurisdictions. Additionally, beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority before the intended transfer

or licensing takes place; the granting authority may, up to four years after the end of the project, object to a transfer of ownership or the exclusive licensing of results.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content is not relevant.

HORIZON-CL4-2026-SPACE-03-85: Critical Facilities Serving Space EEE components for EU non-dependence – High and Very High Energy Irradiation Test Facility Market Deployment

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 3.92 million.
Type of Action	Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: The page limit of the application is 80 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their

	participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[177]
Technology Readiness Level	Activities are expected to achieve TRL 8 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions.
Security Sensitive Topics	Some activities resulting from this topic may involve using classified background and/or producing of security sensitive results (EUCI and SEN). Please refer to the related provisions in section B Security — EU classified and sensitive information of the General Annexes.

Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Reinforcing EU strategic autonomy by reducing non-EU dependencies on critical space EEE components across their entire supply chain, including radiation testing facilities;
- Providing unrestricted access to critical space EEE components and testing facilities relevant for EU space missions (Galileo, EGNOS, Copernicus, IRIS^2 and EU pilot missions on In-Orbit Space Operations and Quantum Gravimetry);
- Developing or regaining capacity to operate independently in space by developing resilient space EEE components and testing facilities supply chains, relying on EU supply chains and/or trustable and reliable supply chains not affected by non-EU export restrictions;

[177] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

- Enhancing competitiveness by developing products and capabilities reaching equivalent or superior performance level than those from outside the EU and compete at worldwide level.

Scope: Unrestricted access to state-of-art space EEE components and related technologies is a pre-requisite for the EU space industry responding to EU space missions. However, especially for some families of components, the available solutions in EU do not meet the current high-performance space requirements. This is also the case for testing facilities, especially high and very high energy testing facilities which are not available in EU. Currently, alternative irradiation testing facilities located outside EU, are either overbooked or often prioritized under the light on national security limiting their use by EU space stakeholder or severely delaying their access. This represents a challenge in terms of reliable and trustable supply chains for the implementation of EU space missions.

Within the frame of this topic, it is expected to finance and implement a development project aiming at maturing the development of a dedicated irradiation test facility open to EU space stakeholders with focus on testing EEE components for space applications and final goal of lowering the dependency from outside EU. This will be done by moving from small scale prototype irradiation testing demonstrations to a fully-fledged irradiation test facility with sufficient beam time spread across the entire year supporting EU strategic autonomy in the space sector. The selection of the supply chains shall reflect this objective. Therefore, the supply chain shall preferably be built fully based in EU and when this can only be achieved partially, services procured from outside EU shall nevertheless ensure that the overall supply chain will remain trustable, not subject to national prioritization and not affected by non-EU export control. The latest scenario is subject to the approval of the granting authority (i.e. DG-DEFIS and HaDEA).

The focused space development relevant for this topic has been identified based on needs related to strategic institutional space programs, inputs from European stakeholders and the EU Observatory of Critical Technologies: **High and Very High Energy (70 MeV/n up to 1GeV/n) Irradiation Test Facility Deployment**. Further details will be provided at the latest at the opening of the Call, in a Guidance document published on the Funding & Tenders Portal.

Space is a low volume market affected by a dynamic industrial landscape compared to the terrestrial market therefore, technological spin in and/or bilateral collaborations should be enhanced between European non-space and space industries. Furthermore, proposed activities should be complementary to relevant national or other activities at European level. Complementary activities should be clearly identified, described and the proposal should report how the complementarity is ensured.

To achieve the non-dependence objective, applicants are expected to include a dedicated proposal's paragraph covering:

- The description of the technology that will be used for providing the irradiation beam and high-level breakdown of the supply chain relevant for the whole test facility.

Applicants should demonstrate that the supply chain and final test facility are free of any legal export restrictions or limitations, such as those established in the International Traffic in Arms Regulations (ITAR) or equivalent instruments applicable in other non-EU jurisdictions. Applicants shall also report, in a dedicated subsection, if and which part of the supply chain is affected by non-EU export controls such as the Export Administration regulation (EAR) i.e. EAR99.

The testing facility shall be open and accessible toward EU and non-EU space stakeholders nevertheless in case the amount of beam time requested will be exceeding the beam time available, the allocation shall be prioritizing EU based stakeholders. Requests coming from non-EU shall be analysed on an ad-hoc basis, considering also the remaining available beam time. This prioritization scheme shall be reflected in the proposal. The test facility as well as related control software and booking platform/website toward the public should clearly report the EU flag.

The proposal is expected to include specific tasks as part of the work plan and related dedicated confidential deliverables to be provided within six months from the start of the project, with the objective of:

1. Analysing and describing, **in detail**, the full supply chain, each entity and its role in the supply chain, level of criticality and, if relevant, identify dependencies from outside EU;

2. Describing the technical roadmap and a business plan for commercialization (e.g. open access of the facility to the external space stakeholders) and future possible upgrades with accurate understanding of applications needs and relevance for EU space missions.

3. Undertaking a comprehensive literature review of the relevant high and very high energy radiation test facilities at global level reporting the state-of-the-art and highlighting potential gaps between current EU solutions and competition from outside EU.

Unless otherwise agreed with the granting authority, beneficiaries must ensure that none of the entities that participate as subcontractors are established in countries which are not eligible as set out in the call conditions.

The consortium as a whole and individual beneficiaries should ensure that, for a period of up to four years after the end of the project, supply and availability of the hardware, manufacturing, assembly processes developed and/or qualified within the project should be made available to any entity in the EU plus Norway and Iceland, at fair and reasonable market prices and conditions and with no legal restrictions and limitations stemming for example from International Traffic in Arms Regulations (ITAR) or equivalent instruments applicable in non-EU jurisdictions. Additionally, beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority before the intended transfer or licensing takes place; the granting authority may, up to four years after the end of the project, object to a transfer of ownership or the exclusive licensing of results.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content is not relevant.

HORIZON-CL4-2026-SPACE-03-86: Space critical Equipment for EU non-dependence – Space Refuelling Interface

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 2.00 and 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 2.94 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: The page limit of the application is 80 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication

	networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[178]
Technology Readiness Level	Activities are expected to achieve TRL 5 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Procedure	The procedure is described in General Annex F. The following exceptions apply: The evaluation committee will be composed partially by representatives of EU institutions.
Security Sensitive Topics	Some activities resulting from this topic may involve using classified background and/or producing of security sensitive results (EUCI and SEN). Please refer to the related provisions in section B Security — EU classified and sensitive information of the General Annexes.

Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Reinforcing EU strategic autonomy by reducing non-EU dependencies on critical space Equipment and related technologies across their entire supply chain;
- Providing unrestricted access to critical space Equipment and related technologies relevant for EU space missions and pilots (e.g. In-Orbit Space Operations);
- Developing or regaining capacity to operate independently in space by developing resilient space Equipment and related technologies supply chains, relying on EU supply chains and/or trustable and reliable supply chains not affected by non-EU export restrictions;
- Enhancing competitiveness by developing products and capabilities reaching equivalent or superior performance level than those from outside the EU and compete at worldwide level.

Scope: Unrestricted access to state-of-art space equipment and related technologies is a pre-requisite for the EU space industry responding to EU space missions. However, especially for

[178] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

some families of equipment, the available solutions in EU do not meet the current high-performance space requirements. Currently, alternative products sourced from outside EU, are either affected by non-EU export control, that limits its use, or present challenges in terms of trustable supply chains for the implementation of EU space missions with a security dimension.

Within the frame of this topic, it is expected to finance and implement a development project aiming at maturing critical equipment with the final goal of lowering the dependency from outside EU. This will be done by establishing a long-term sustainable supply chain for supporting EU strategic autonomy in the space sector. The selection of the supply chains shall reflect this objective. Therefore, the supply chain shall preferably be built fully based in EU and when this can only be achieved partially, services procured from outside EU shall nevertheless ensure that the overall supply chain will remain trustable and not affected by non-EU export control. The latest scenario is subject to the approval of the granting authority (i.e. DG-DEFIS and HaDEA).

The space equipment and related technologies relevant for this topic represent a direct implementation of the EU Observatory of Critical Technologies (OCT) Technology Roadmap, named Robotics Manipulators for Space Applications: **Space Refuelling Interface**. Further details will be provided at the latest at the opening of the Call, in a Guidance document published on the Funding & Tenders Portal.

Space is a low volume market affected by a dynamic industrial landscape compared to the terrestrial market therefore, technological spin in and/or bilateral collaborations should be enhanced between European non-space and space industries. Furthermore, proposed activities should be complementary to relevant national or other activities at EU level. Complementary activities should be clearly identified, described and the proposal should report how the complementarity is ensured.

To achieve the non-dependence objective, applicants are expected to include a dedicated proposal's paragraph covering:

- The description of the technology and/or technology processes used for developing the equipment and high-level breakdown of the supply chain to be used. Applicants should demonstrate that the supply chain and final product are free of any legal export restrictions or limitations, such as those established in the International Traffic in Arms Regulations (ITAR) or equivalent instruments applicable in other non-EU jurisdictions. Applicants shall also report, in a dedicated subsection, if and which part of the supply chain is affected by non-EU export controls such as the Export Administration regulation (EAR) i.e. EAR99.

- The description of the suitable technology development process that has been identified and set up within the consortium for avoiding export restrictions of non-EU states and assess vulnerabilities of the supply chain.

Proposals covering space equipment and related technology developments that are targeting a final TRL equal or higher than 5 should include a list of proposed applicable standards (e.g. EN, ECSS, ESCC, MIL, JEDEC,…) that are considered relevant for implementing a formal space evaluation and/or qualification. Additionally, projects that aim at a formal space qualification should include as deliverable the full data pack planned to be submitted to the qualification authority. This deliverable should be marked sensitive. Hardware that will successfully complete the space evaluation/qualification is expected promote the EU support by displaying the EU emblem on the package.

The proposal is expected to include specific tasks as part of the work plan and related dedicated confidential deliverables to be provided within six months from the start of the project, with the objective of:

1. Analysing and describing, **in detail**, the full supply chain, each entity and its role in the supply chain, level of criticality and, if relevant, identify dependencies from outside EU;

2. Describing the industrial technical roadmap and a business plan for commercialization with accurate understanding of applications needs, space mission insertion, including time to market indication, of the developed product.

3. Reporting the list of relevant non-EU export control with extra territorial applicability for the specific technology/product under development, independently from the supply chain established for the EU-COM project.

4. Undertaking a comprehensive literature review of the relevant technology/product reporting the state-of-the-art and highlighting potential gaps between current EU solutions and competition from outside EU.

Unless otherwise agreed with the granting authority, beneficiaries must ensure that none of the entities that participate as subcontractors are established in countries which are not eligible as set out in the call conditions.

The consortium as a whole and individual beneficiaries should ensure that, for a period of up to four years after the end of the project, supply and availability of the hardware, manufacturing, assembly processes developed and/or qualified within the project should be made available to any entity in the EU plus Norway and Iceland, at fair and reasonable market prices and conditions and with no legal restrictions and limitations stemming for example from International Traffic in Arms Regulations (ITAR) or equivalent instruments applicable in non-EU jurisdictions. Additionally, beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority before the intended transfer or licensing takes place; the granting authority may, up to four years after the end of the project, object to a transfer of ownership or the exclusive licensing of results.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content is not relevant.

HORIZON-CL4-2027-SPACE-07-83: Space critical EEE components for EU non-dependence

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 0.00 million.
Type of Action	Research and Innovation Actions
Admissibility conditions	The conditions are described in General Annex A. The following exceptions apply: The page limit of the application is 80 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees.[179]

[179] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its

Technology Readiness Level	Activities are expected to achieve TRL 6 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering all development areas described in the scope, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked within each development area, provided that the applications attain all thresholds. The evaluation committee will be composed partially by representatives of EU institutions.
Security Sensitive Topics	Some activities resulting from this topic may involve using classified background and/or producing of security sensitive results (EUCI and SEN). Please refer to the related provisions in section B Security — EU classified and sensitive information of the General Annexes.

Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Reinforcing EU strategic autonomy by reducing non-EU dependencies on critical space EEE components and related technologies across their entire supply chain;
- Providing unrestricted access to critical space EEE components and related technologies relevant for EU space missions;
- Developing or regaining capacity to operate independently in space by developing resilient space EEE components and related technologies supply chains, relying on EU supply chains and/or trustable and reliable supply chains not affected by non-EU export restrictions;
- Enhancing competitiveness by developing products and capabilities reaching equivalent or superior performance level than those from outside the EU and compete at worldwide level;
- Opening new opportunities for manufacturers by reducing dependency on non-EU export restricted technologies.

infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

Scope: Unrestricted access to state-of-art space EEE components and related technologies is a pre-requisite for the EU space industry responding to EU space missions. However, especially for some families of components, the available solutions in EU do not meet the current high-performance space requirements. Currently, alternative products sourced from outside EU, are either affected by non-EU export control, that limits its use, or present challenges in terms of trustable supply chains for the implementation of EU space missions with a security dimension.

Within the frame of this topic, it is expected to finance and implement development projects aiming at maturing critical space EEE components with the final goal of lowering the dependency from outside EU. This will be done by establishing a long-term sustainable supply chain for supporting EU strategic autonomy in the space sector. The selection of the supply chains shall reflect this objective. Therefore, the supply chain shall preferably be built fully based in EU and when this can only be achieved partially (i.e. because of lack of current EU capabilities for unrestricted advanced semiconductor processes or advanced materials that cannot be developed within the project), services procured from outside EU shall nevertheless ensure that the overall supply chain will remain trustable and not affected by non-EU export control. The latest scenario is subject to the approval of the granting authority.

The list of space equipment and related technologies relevant for this topic will be selected based on needs related to strategic institutional programs, inputs from relevant European stakeholders and the EU Observatory of Critical Technologies. It will be proposed in 2026 and validated with the HE delegations.

Space is a low volume market affected by a dynamic industrial landscape compared to the terrestrial market therefore, technological spin in and/or bilateral collaborations should be enhanced between European non-space and space industries. Furthermore, proposed activities should be complementary to national activities and European space agencies. Complementary activities should be clearly identified, described and the proposal should report how the complementarity is ensured.

HORIZON-CL4-2027-SPACE-07-84: Space critical equipment for EU non-dependence

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 3.00 and 4.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 0.00 million.
Type of Action	Research and Innovation Actions
Admissibility	The conditions are described in General Annex A. The following

conditions	exceptions apply: The page limit of the application is 80 pages.
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees.[180]
Technology Readiness Level	Activities are expected to achieve TRL 6 by the end of the project – see General Annex B.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering all development areas described in the scope, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked within

[180] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

	each development area, provided that the applications attain all thresholds. The evaluation committee will be composed partially by representatives of EU institutions.
Security Sensitive Topics	Some activities resulting from this topic may involve using classified background and/or producing of security sensitive results (EUCI and SEN). Please refer to the related provisions in section B Security — EU classified and sensitive information of the General Annexes.

Expected Outcome: Project results are expected to contribute to all of the following expected outcomes:

- Reinforcing EU strategic autonomy by reducing non-EU dependencies on critical space equipment and related technologies across their entire supply chain;
- Providing unrestricted access to critical space equipment and related technologies relevant for EU space missions;
- Developing or regaining capacity to operate independently in space by developing resilient critical space equipment and related technologies supply chains, relying on EU supply chains and/or trustable and reliable supply chains not affected by non-EU export restrictions;
- Enhancing competitiveness by developing products and capabilities reaching equivalent or superior performance level than those from outside the EU and compete at worldwide level;
- Opening new opportunities for manufacturers by reducing dependency on non-EU export restricted technologies.

Scope: Unrestricted access to state-of-art space equipment and related technologies is a pre-requisite for the EU space industry responding to EU space missions. However, especially for some families of equipment, the available solutions in EU do not meet the current high-performance space requirements and alternative products, sourced from outside EU, are either affected by non-EU export control with extra territorial applicability, that limit the access, re-export or raise challenges in terms of trustable supply chains for the implementation of EU space missions with a security dimension.

Within the frame of this topic it is expected to finance and implement development projects aiming at maturing critical space equipment with the final goal of lowering the dependency from outside EU, establish a long-term sustainable supply chain and support EU strategic autonomy in the space sector. The selection of the supply chains shall reflect this objective. Therefore, the supply chain shall preferably be built fully based in EU and when this can only be achieved partially (i.e. because of lack of current EU capabilities that cannot be developed within the project), services procured from outside EU shall nevertheless ensure that the

overall supply chain will remain trustable and not affected by non-EU export control. The latest scenario is subject to the approval of the granting authority.

The list of space equipment and related technologies relevant for this topic will be selected based on needs related to strategic institutional programs, inputs from relevant European stakeholders and the EU Observatory of Critical Technologies. It will be proposed in 2026 and validated with the HE delegations.

Space is a low volume market affected by a dynamic industrial landscape compared to the terrestrial market therefore, technological spin in and/or bilateral collaborations should be enhanced between European non-space and space industries. Furthermore, proposed activities should be complementary to national activities and European space agencies. Complementary activities should be clearly identified, described and the proposal should report how the complementarity is ensured.

Heading 9 - Boosting Space through innovative space technologies

Proposals are invited against the following topic(s):

HORIZON-CL4-2027-SPACE-03-71: Quantum Space Gravimetry topic

Call: SPACE	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 14.00 and 15.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 29.20 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, participation is limited to legal entities established in Member States, Norway and Iceland. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible.

	For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees.[181]
Technology Readiness Level	Activities are expected to achieve TRL 4-6 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector.
Procedure	The procedure is described in General Annex F. The following exceptions apply: Eligible proposals submitted under this topic and exceeding all the evaluation thresholds will be awarded a STEP Seal [182]. To ensure a balanced portfolio covering all the development areas described in the scope section, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked within each development area, provided that the applications attain all thresholds.

Expected Outcome: Projects are expected to contribute to the following outcomes:

- Support the EU space policy by fostering the development of groundbreaking space technology and support the Quantum Europe Strategy.
- Enhance the technological maturation of the critical components necessary to perform quantum space gravimetry.

[181] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

[182] https://strategic-technologies.europa.eu/about/step-seal_en

- Foster the technological leadership and non-dependence of the EU in the field of quantum gravimetry from space and promote the EU's competitiveness in quantum technologies.

This action aims at supporting the maturation, development and/or implementation of quantum gravimetry technology for space.

Monitoring the Earth gravity field provides key information and data on Earth mass movements. This type of data is of utmost importance for Earth science and used in many areas, for example to monitor ice sheet changes, floods or droughts, volcanic activities and earthquakes. The community of users for such data spans from climate scientists to geophysicists and relies on quality and precise data. Monitoring the Earth gravity field from space provides a global scale to the user community and fosters the development of models and understanding of the Earth as an integrated and global system.

Space gravimetry data provided up to now (or planned in the near future) is using an underlying technology based on electrostatic accelerometers, which has reached its limits in terms of performance. Accelerometers based on quantum technology may offer enhanced performances in terms of sensitivity, accuracy, stability and operational time compared to these classical accelerometers.

The European Commission is committed to the development of quantum technologies and for this purpose, adopted the Quantum Europe Strategy in July 2025 (Quantum Europe Strategy | Shaping Europe's digital future). This strategy identifies Space as a critical element and highlights the benefits of quantum sensing, including for fundamental science. The strategy provides the case for a network of mobile and stationary quantum sensors and foresees the deployment of ground, airborne and space-based gravimeters for Earth observation purposes. The strategy highlights the need for and importance of developing a space compatible technology to fulfil this ambition.

Quantum technologies are also identified as a critical R&I area in the EU Economic Security Strategy (eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52023JC0020). Mastering this technology will contribute to the EU technological sovereignty and foster the development of an EU non-dependent quantum & space ecosystem, able to address the EU's ambitions for its space policy.

To meet these strategic objectives and envisage a full-blown quantum space gravimetry capacity, the development and in-orbit testing of a quantum accelerometer is a pre-requisite. The European Commission has been supporting the development of quantum accelerometer technology for ground and space gravimetry with dedicated calls in Horizon Europe.

This call will support the implementation, development and maturation of quantum accelerometer technologies for space gravimetry. Proposals should present a technological solution provided it is quantum-based, aims at enhancing the performance of gravimetry mission(s) currently planned (based on electrostatic accelerometers), and the resulting projects are expected to be consistent with a common overarching roadmap and recommendations to

be established in close coordination with EU Member States, Norway and Iceland through a dedicated Quantum Space Gravimetry Expert Group (QSGEG). The action should foster the development of the underlying technology and result in a breadboard / payload prototype subsystems / engineering models demonstrating the feasibility and expected performance of the technological solution and its potential further development for integration on a satellite platform, the design of which should also be presented. Proposals should also provide a clear implementation strategy allowing the chosen solution to be tested in-orbit in a demonstrator in the future, the associated development lifecycle of which is free of choice (ECSS or other).

Scope: The areas of R&I, which needs to be addressed to tackle the above-mentioned expected outcomes are:

- Area 1: R&I on the technology based on cold atom interferometry with Bose Einstein Condensates (BECs) for Quantum Space Gravimetry. Proposals should aim at the maturation of all relevant technology to TRL 6 and deliver engineering and qualification models of the payload subsystems to demonstrate the technology in orbit.

- Area 2: R&I on emerging technology for Quantum Space Gravimetry such as SQUIDs (Superconducting Quantum Interference Devices) or nuclear spin-based gravimeters or hybridized technology (list not exhaustive). Proposals should aim at the development of the relevant technology to TRL 4-5 and deliver breadboards or prototypes of a payload aiming at demonstrating the technology in orbit.

Proposals should contribute to one of the above R&I areas and this area should be clearly and unambiguously identified. To ensure a balanced portfolio covering the two areas described above, grants will be awarded to applications not only in order of ranking but at least also to one proposal that is the highest ranked within each area, provided that the applications attain all thresholds. Intellectual Property (IP) rights and ownership must be clearly defined and the provisions in Article 16 of the Horizon Europe Model Grant Agreement shall apply (relevant to protection, exploitation, transfer and licensing, access rights to results and background). The beneficiaries of the grant should also reflect on the availability of the IPs for potential next steps of the activity.

Where applicable, proposers are invited to explore synergies with or build-upon past actions related to quantum technology and/or space gravimetry either at national or EU level.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

Heading 10 - Boosting Space through IOD/IOV opportunities

For a description of topics related to the IOD & IOV opportunities, please refer to please refer to "Indirectly managed actions by ESA" in the section "Other Actions" of this work programme.

Heading 11 - Boosting Space through support to entrepreneurship

For a description of topics related to Cassini Entrepreneurship, please refer to “Public Procurement” in the section “Other Actions” of this work programme.

Destination: Digital and industrial technologies driving human-centric innovation

Through the European Partnership on Virtual Worlds, Europe will drive investment in advanced hardware, immersive interaction, and seamless integration across the Telco-Cloud-to-Edge continuum, enabling lifelike multisensory experiences and fully interoperable platforms. These efforts will enhance Europe's capacity to innovate, deploy, and scale trustworthy virtual worlds, thereby strengthening competitiveness, resilience, and alignment with EU values.At the same time, a robust Web 4.0 architectural framework — underpinned by open-source solutions and shared standards — will be essential to ensure interoperability, decentralisation, and trust. By deepening Europe's engagement in international digital standardisation, the Union will help shape global norms in line with its strategic interests, technological sovereignty, and core values.

Legal entities established in China are not eligible to participate in both Research and Innovation Actions (RIAs) and Innovation Actions (IAs) falling under this destination. For additional information please see "Restrictions on the participation of legal entities established in China" found in General Annex B of the General Annexes.

Virtual Worlds – Web 4.0 (Partnership)

Proposals are invited against the following topic(s):

HORIZON-CL4-2026-04-HUMAN-01: Developing and demonstrating core technologies for Virtual Worlds and Web 4.0 (IA) (Virtual worlds Partnership)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 4.00 and 5.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 30.00 million.
Type of Action	Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, and security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions.

	For this reason, participation is limited to legal entities established in Member States, Iceland and Norway and the following additional associated countries: Canada, Israel, Republic of Korea, New Zealand, Switzerland, and the United Kingdom. In addition, entities established in third countries which may become associated to Horizon Europe during 2026 and 2027 may be eligible to participate in this topic if the third country is identified for this topic as an eligible country in the List of Participating Countries in Horizon Europe at the time of submission of the application[183]. In any case, the association agreement to the Programme must apply by the time of the signature of the grant agreement. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities assessed as high-risk suppliers of mobile network communication equipment within the meaning of 'restrictions for the protection of European communication networks' (or entities fully or partially owned or controlled by a high-risk supplier) cannot submit guarantees.[184]
Technology Readiness Level	Activities are expected to start at TRL 4 and achieve TRL 6 by the end of the project – see General Annex B.

Expected Outcome: Projects are expected to contribute to the following outcomes:

- eXtended Reality (XR), immersive and interactive technologies that bring full integration of Virtual Worlds and Web 4.0 technologies to the next level.

183 See the List of Participating Countries in Horizon Europe available at https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/list-3rd-country-participation_horizon-euratom_en.pdf.

184 The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

- The objective is to pave the way for the next generation of virtual worlds, enhancing immersive visualisation and interaction experience, immersing users at the centre of the Virtual Worlds applications, enabling seamless interaction and data exchange

The next generation of Virtual Worlds technologies will propose a deeper and closer-to-reality immersion, stimulating all senses to accurately capture and interpret user movements and environmental data, while providing realistic multi-modal tactile and kinesthetic haptic and force-feedback, retroactions for engaging and lifelike experiences. Real-time user interactions should be favoured by minimizing latency, increasing responsiveness and naturalness of interactions. The developed technologies will also dynamically respond to users' inputs and environmental changes.

Scope: Proposals will focus on and address the following:

- Asset and scene creation technology evolving in parallel to enable the generation of a human-centric, highly detailed and realistic environments to interact with,
- Use of Generative AI for more personalised and natural experiences,
- Visualisation and interaction through innovative immersive technologies to enhance the user experience through a seamless, inclusive and immersive involvement,
- Full integration and interoperability of XR and immersive domains and applications (including e.g. Digital Twins),
- Integration of XR applications and components with Telco-Cloud-to-Edge Continuum components, addressing challenges related to resource availability and reliability, while also balancing the requirements of rapid response time, spatial computing, contextual awareness and smart network functions.

The proposals should also advance on the development of technological standards, common data formats and protocols that would enable real-time, seamless and intuitive user-interaction and exchange of information between different systems and platforms in the future, as stepping stones towards Web 4.0.

This topic requires the effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

Proposals will include demonstrators of the developed technologies in real-world scenarios, illustrating the usefulness and efficiency of emerging technologies in Virtual Worlds in illustrative scenarios in the industrial and societal contexts, exploiting the Telco-Cloud-to-Edge Continuum and the 3C pilots on converged Telco Edge Cloud Infrastructure.

Proposals should demonstrate future synergies, provisions for future collaboration, and complementarity with other relevant actions carried out under call HORIZON-CL4-2027-04-

DATA-08: Demand-side 3C pilot demonstrators on converged Telco Edge Cloud Infrastructure. We consider that proposals with an overall duration of typically 36 months would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other durations.

This topic implements the co-programmed European Partnership on Virtual Worlds.

HORIZON-CL4-2026-04-HUMAN-02: Web 4.0 architectural framework and Open Internet Stack applications for virtual worlds (RIA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 2.80 and 8.40 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 16.80 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Procedure	The procedure is described in General Annex F. The following exceptions apply: To ensure a balanced portfolio covering all the areas described in the scope, grants will be awarded to proposals not only in order of ranking but at least also to one proposal that is the highest ranked within each area, provided that the proposals attain all thresholds. Only one proposal in the “Architectural Framework” area will be selected.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. For “Architectural Framework” Area Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 300 000 to allow 1/ cases where a given legal entity may receive several grants

	(e.g. from different calls) 2/ reaching the maturity level for third party's project to ensure sustainability with multiple awards. To support and mobilise internet innovators, a maximum of 70% of the total proposed budget could be allocated to financial support to third parties, selected through open calls. For the "Applications" Area Beneficiaries may provide financial support to third parties. The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 300 000 to allow 1/ cases where a given legal entity may receive several grants (e.g. from different calls) 2/ reaching the maturity level for third party's project to ensure sustainability with multiple awards. To support and mobilise internet innovators, a maximum of 20% of the total proposed budget could be allocated to financial support to third parties, selected through open calls.

Expected Outcome: *Common expected outcome*

Stimulate the emergence at European and global scale of Web 4.0 (such as standards, protocols, components and a framework for their interaction) and virtual worlds solutions.

Expected outcome for the "Architectural Framework" area

- An emerging Web 4.0 architectural framework made of cross-platforms, interoperable, trustable, safe and secure building blocks that rely on Open Source software
- A structured and agile eco-system of talented contributors driving the creation and evolution of commons based on Open Source software, open standards and open hardware and designs.

Expected outcome for the "Applications" area

- Open source and made in Europe, supporting trust and sovereignty, and delivering credible alternative choices for citizens, governments and companies including start-ups and SMEs.
- Interoperable, standards-based, decentralised solutions exploiting extended reality technologies.
- Compliant-by-design with EU rules and regulations. Paced for easy deployment by the rich European eco-systems of providers, integrators and verticals.

For both areas the outcome will bring synergies with actions under Virtual worlds, Open Internet Stack, 3C, as well as with other like-minded actions in Europe e.g. at Member States level and outside

Scope: Proposals should address one of the following areas and should clearly identify the area addressed.

1/ "Architectural Framework" area

Develop a human-centric Web 4.0 architectural framework encompassing interoperable layers from open hardware, web, AI agents, up to immersive and decentralised applications, utilizing cross-platform digital commons developed by European innovators (SMEs, start-ups, academia). Proposals should demonstrate immersive multi-modal user interaction and should enhance trust, privacy, portability, and advanced identity management, facilitating deployment of the EU Wallet while optimizing the balance between decentralization, security, and energy efficiency with verifiable metrics.

2/ "Applications" area

Proposals will cover the one or more of the following technologies:

- Alternative decentralised applications and services such as synchronous and asynchronous messaging, videoconferencing, collaboration and groupware or social media that can be exploited through Virtual Worlds technologies, including immersion and interaction.
- App-stores (incl. web-based) adapted for Virtual Worlds
- Shared, robust and trustworthy cross-technology Virtual Worlds for user and attribute management

Proposals will have to demonstrate (1) technical maturity in terms of scalability, resiliency, alignment with standards (2) critical mass of communities actively supporting the development (3) evidence of interest from users and deployers of the solutions.

Cross-cutting requirements for both areas:

Applicants should define the mechanisms for maturing building blocks e.g. security and accessibility audits, packaging of the software for easy deployment, localisation of the software in EU languages, documentation of best practices and advising on licensing.

Applicants should detail the path to growth for building blocks e.g. by defining a clear standardisation strategy, actively animating communities, creating momentum among like-minded efforts, defining how projects will gain critical mass and what services will be provided for reaching such stage, and providing a coherent picture of the portfolio for adopters

Applicants should create the conditions for successful collaboration and synergies with other European initiatives such as the Virtual Worlds/Web 4.0, 3C and Open Internet Stack initiatives as well as with like-minded funding efforts at national, European levels and beyond Europe such as Digital Commons initiatives.

Applicants should demonstrate their experience and understanding of Open Source communities and their expertise covering the full Open Source life cycle through proven track record including years of experience.

Beneficiaries that intend to transfer ownership or grant an exclusive licence must formally notify the granting authority (i.e. DG-CNECT and HaDEA) before the intended transfer or licensing takes place and the granting authority may up to four years after the end of the action object to a transfer of ownership or the exclusive licensing of results.

Financial support to third parties

If applicants opt for financial support to third parties, then they should target calls towards European Open Source communities – SMEs, research institutes and individual researchers and developers – with solid experience with development of solutions in line with EU rules and values. Applicants should provide the programme logic for the third-party projects, managing the projects lifecycle, and provide the necessary technical and non-technical support: these tasks cannot be implemented using the budget earmarked for the financial support to third parties.

HORIZON-CL4-2027-04-HUMAN-01: Advanced and Innovative hardware components for Virtual Worlds (RIA) (Virtual Worlds Partnership)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 4.80 and 5.60 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 39.00 million.
Type of Action	Research and Innovation Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Technology Readiness Level	Activities are expected to start at TRL 3 and achieve TRL 5 by the end of the project – see General Annex B.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of

	results, as set out in the specific provision of Annex 5.

Expected Outcome: Projects are expected to contribute to the following outcomes:

- Innovative and advanced XR hardware, advanced headsets, screens, wearables and haptic components, sensors and actuators, advanced chips for a deeper and closer-to-reality immersion, stimulating all human senses.

Scope: In the recent years, hardware for Virtual Worlds made major breakthroughs, democratising headsets, sensors, actuators or haptic equipment. To keep this momentum and advancing further, new generation of XR equipment, wearable solutions and haptic components, as well as non-invasive brain computer interfaces for handsfree interaction, hardware or technologies will put the users at the very centre of virtual experiences, for even greater and realistic immersion, aiming at blurring the lines between the real and digital environments. To ensure this next generation of engaging and lifelike immersion, all senses must be stimulated (sight, hearing, feel, touch, smell), for a fully immersive close-to-reality experience. Users will be submerged with realistic sensations making the experience as immersive as possible.

Proposals should investigate novel scientific approaches or push the limit of existing ones to improve the synchronization and integration of the different modalities.

Proposals are expected to integrate various components in fully tested devices, demonstrating the usefulness and efficiency of their system in illustrative scenarios in the industrial and societal contexts.

Proposals should focus on performant, reliable, miniaturised, interoperable advanced and innovative technologies, with inclusivity, energy consumption and energy efficiency at the centre of concerns.

This topic requires the effective contribution of SSH disciplines and the involvement of SSH experts, institutions as well as the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

The Consortium should pay attention to developing solutions that are reliable, robust and interoperable. Proposals should leverage existing open standards and technologies in the domain of Virtual Worlds, while contributing to ongoing standardisation work.

We consider that proposals with an overall duration of typically 36 months would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other durations.

This topic implements the co-programmed European Partnership on Virtual Worlds.

HORIZON-CL4-2027-04-HUMAN-02: Create a thriving and competitive Virtual Worlds and Web 4.0 ecosystem (CSA) (Virtual Worlds Partnership)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 3.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 3.00 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: Subject to restrictions for the protection of European communication networks.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5.

Expected Outcome: The co-programmed European Partnership for Virtual Worlds will help to develop and promote a thriving industrial and end-user ecosystem in the EU, covering all the aspects of the virtual worlds value chain. It will also actively engage with industrial and societal sectors to provide access to a broad range of resources, including funding, expertise and technology.

Project results are expected to contribute to the following expected outcomes:

1. The delivery of a revised and updated Strategic Research and Innovation Agenda (SRIA) for Virtual Worlds in Europe, for useful, open, interoperable, inclusive, sustainable and trustworthy virtual worlds systems and applications, ensuring these reflect EU values and principles.

2. Strengthening of the European Virtual Worlds Partnership by providing continuous support.

3. Reinforcement of the competitive ecosystem, with European companies playing a leading role in the adoption and acceptance, and in the development and deployment of Virtual Worlds technologies.

4. Reinforced links among initiatives in virtual worlds in Horizon Europe, Digital Europe Programme, and other programmes at EU, national and regional levels.

5. Widespread awareness and outreach programmes.

6. Increased adoption of virtual worlds that are open, accessible and inclusive, interdisciplinary, safe and respect ethical values and European legal framework, including regarding privacy, security in all Member States and Associated Countries.

7. Strengthening and promotion of standardisation methods for virtual worlds technologies and in support of the EU regulatory framework.

Scope: The objective of the CSA is to further develop and reinforce the community by strengthening and supporting the Virtual Worlds Partnership and its Strategic Research and Innovation Agenda for Virtual Worlds (SRIA). The CSA will also lay the grounds for a strong and inclusive network bringing together academia, industry, public actors and end-users, including major industrial European sectors and all relevant stakeholders. The CSA will ensure close coordination at regional, national and European level.

The CSA will also strongly continue to promote the adoption of Virtual Worlds technologies and solutions in all Member States and Associated Countries, with particular emphasis on geographical aspect and across the value chain.

To this end, the CSA will develop and implement outreach programmes aiming at better understanding and raising awareness to create acceptance and trustworthiness of Virtual Worlds solutions.

The CSA will also support standardisation efforts to support the uptake of interoperable, open, trustworthy and ethical Virtual Worlds solution, by mobilising and bringing stakeholders together and, when needed, organising European representation in existing or new standardisation working groups in support of the Commission regulatory framework.

Proposals should involve and be driven by representatives of the relevant actors of the field (e.g., academia, RTOs, industry including SMEs).

The Commission considers that proposals with an overall duration of typically 36 months would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other durations.

Proposals should involve the effective contribution of Social Sciences and Humanities (SSH) disciplines and SSH experts, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

This CSA should be prepared, managed and coordinated by key stakeholders in this field and directly support the Virtual Worlds Partnership.

This topic is implemented through the co-programmed European Partnership for Virtual Worlds and all proposals are expected to allocate tasks to cohesion activities with the

Partnership on Virtual Worlds and funded actions related to this partnership, including the CSA: HORIZON-CL4-2025-03-HUMAN-17.

This topic implements the co-programmed European Partnership on Virtual Worlds.

STANDARDISATION – INTERNATIONAL

Proposals are invited against the following topic(s):

HORIZON-CL4-2027-04-HUMAN-07: Facilitate the engagement of European stakeholders in international digital standardisation (CSA)

Call: DIGITAL	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 7.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 7.00 million.
Type of Action	Coordination and Support Actions
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: The granting authority may, up to 4 years after the end of the action, object to a transfer of ownership or to the exclusive licensing of results, as set out in the specific provision of Annex 5. Beneficiaries may provide financial support to third parties (FSTP). The support to third parties can only be provided in the form of grants. The maximum amount to be granted to each third party is EUR 60 000. As the primary purpose of the action is to support European experts in the global ICT standardisation scene, a minimum of 75% of the total requested EU contribution should be allocated to FSTP selected through open calls. Beneficiaries will define the process for the selection of specialists through open calls. They will also define the process that will lead to a selection of a pool of evaluators that will evaluate the applications received in the open calls. Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the

	Research and Training Programme of the European Atomic Energy Community (2021-2025) [185].

Expected Outcome: Proposals are expected to contribute to the following outcomes:

- Increasing the participation and influence of European experts in digital standardisation to promote EU values and strategic interests, contributing to strengthen EU competitiveness in the digital field.
- Improvement of the skills of European experts, especially from SMEs, R&I institutions, Open-Source community, academia and societal stakeholders, to successfully contribute and lead in the development of digital standards.
- Development and update of standardisation landscapes and gap analyses of key digital technologies as outlined in the Rolling Plan for ICT Standardisation.
- Provision of foresight analyses regarding standardisation in new emerging technologies to identify short and medium-term digital standardisation needs to support EU policies and anticipate appropriate participation by EU stakeholders.
- More awareness of the benefits and competitive advantages of standardisation, in particular for SMEs and researchers, and more visibility of the European digital standardisation ecosystem.

Scope: Contribute to the implementation of the EU Standardisation Strategy and other policy initiatives such as Europe's Digital Decade, Apply AI Strategy or the Competitiveness Compass, with an emphasis on supporting the EU's leading position in global standards-setting of key digital technologies.

The goals are inter alia to 1) strengthen the EU competitiveness in the digital domain; 2) contribute to EU tech sovereignty and 3) promote EU values and interests internationally, by empowering and financially supporting the active participation of European stakeholders in the development of digital international standards.

The objective is to reinforce the presence of experts from the EU and associated Horizon Europe countries in global digital standards setting, especially those coming from SMEs, R&I institutions, Open-Source community, academia and societal stakeholders.

To achieve this objective, proposals under this topic should provide for:

- Setting up of a management facility to support contributions and leadership (e.g. chairing of technical committees, convenor positions) of European specialists in activities in relation to global digital standardisation

[185] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- When relevant, support financially the hosting of international standardisation meetings (e.g. 3GPP, ISO/IEC JTC1) and workshops in Europe to ease the participation of European experts

- Landscape and gap analysis of standardisation activities in key digital priority areas, as outlined in the Annual Union Work Programme and the Rolling Plan for ICT standardisation, including identification of new emerging technology areas.

- Promotion of the relevance and benefits of digital standardisation, especially for strengthening the competitiveness of EU industry, driving sustainability, achieving tech sovereignty, and promoting EU values. The proposal shall build synergies with other similar EU- and national-funded initiatives. It shall also include actions, including development of tools and materials, to promote education and skills on standardisation.

The proposal should take into account the previous activities carried out at least in terms of educational material and facilities for funding experts within the topics ICT-40-2017 (implemented by the StandICT.eu project), ICT-45-2020 (implemented under StandICT.eu2023 project), HORIZON-CL4-2022-RESILIENCE-01-21 (implemented under StandICT.eu 2026) and HORIZON-CL4-2024-HUMAN-03-04 (implemented under StandICT.eu 2029).

See website: http://www.standict.eu.

Other actions not subject to calls for proposals

Public procurements

Space

1. Heading 11 of Space - Boosting Space through support to entrepreneurship - CASSINI activities

The CASSINI Space Entrepreneurship Initiative will continue to provide support to space startup companies to enable their commercial growth. CASSINI enables Europe-wide business networks and innovation-friendly ecosystems, creating stronger links between space companies and customers on various markets. The objectives are to accelerate commercial growth and make companies investment-ready. With convincing growth plans and direct links to private investors, they are able to raise more venture capital. Synergies with the InvestEU programme and the EU Space programme are pursued.

In 2026, we will launch a new contract for the CASSINI Business Accelerator.

Indicative timetable: second quarter of 2026.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative budget: EUR 9.80 million from the 2026 budget

2. Space events, Studies and Platforms

Events, studies and online platforms are needed on specific activities in order to assemble, maintain and evolve the EU R&I Space ecosystem. These include:

- Events and publications (e.g., information, communication, dissemination etc.).
- Studies including trends, market and impact analysis.
- Online platforms gathering activities of the EU R&I Space ecosystem, supporting networking, exchange of best practices, analysis for policy-making, etc.

Indicative timetable: third quarter of 2026.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative budget: EUR 0.50 million from the 2026 budget and EUR 0.50 million from the 2027 budget

3. Boosting Space through Skills development

The activity will focus on upskilling and reskilling of students and active workers in the space sector through a framework contract with HaDEA. The activity will include support to Equality, Diversity and Inclusion (EDI) in the space sector. Indicative timetable: third quarter of 2026.

Indicative timetable: third quarter of 2026.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative budget: EUR million from the 2026 budget

4. Industry

4.1. Comparative study on strategies, practices and tools for knowledge valorisation in five jurisdictions outside the EU

This study aims to examine and compare the strategies, practices, and tools used for knowledge valorisation in five selected non-EU jurisdictions.

The comparative analysis will focus on how different countries approach the translation of publicly funded research results to create economic and societal value, considering the different legal, institutional, cultural, and economic contexts. The jurisdictions selected for this study -including developed and emerging economies - will provide a global perspective on best practices and innovative models that can inform EU policy and practice.

Key areas of focus will include: 1. Legal and policy frameworks supporting knowledge valorisation 2. Structures and funding mechanisms for technology and knowledge transfer 3. Industry-academia collaboration models 4. Entrepreneurship and startup/spinoff support ecosystems 5. Uptake of R&I results though standardisation 6. Knowledge valorisation metrics and evaluation methods.

The outcome of this study will contribute to a deeper understanding of international innovation ecosystems and offer insights into how the EU might enhance its competitive knowledge valorisation strategies in the current geopolitical landscape.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q2 of 2026

Indicative budget: EUR 0.15 million from the 2026 budget

4.2. Framework for effective licensing of intellectual assets stemming from publicly funded research

As also stressed by the Startup and Scaleup Strategy Staff Working Document, efficient commercialisation of the results stemming from publicly funded research is often hampered by the burdensome negotiation processes. R&I institutions need more support for the effective translation of their results into societal and economic value; licensing represents a critical mechanism for knowledge valorisation and technology transfer. This study aims to develop a comprehensive framework for the effective licensing of intellectual assets generated through publicly funded research.

The proposed framework will examine institutional policies, legal provisions and market-driven approaches that govern the licensing of intellectual property (IP) arising from EU universities and public research organisations. Special attention will be paid to ensuring that licensing strategies strike a balance between incentivising innovation, attracting commercial investment, and maintaining public benefit.

Key research areas include: 1. Types of licensing models (exclusive, non-exclusive, open, and hybrid approaches) 2. IP ownership policies and their influence on licensing practices 3. Valuation methods and negotiation strategies 4. Royalty- and revenue-sharing 5. Equity vs. royalty-based licensing in spinouts and startups.

The framework will be informed by stakeholder consultations, case studies, and comparative analysis of existing national and international models. Its goal is to support policymakers, knowledge and technology transfer professionals, and public research institutions in fostering IP commercialisation by enhancing the efficiency, transparency, and strategic impact of licensing.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q2 of 2026

Indicative budget: EUR 0.20 million from the 2026 budget

4.3. Research security and intellectual assets management (study)

Expected outcome: A set of practical recommendations addressed to (i) organisations for the development of a strategy to identify, assess and mitigate potential research security risks linked to intellectual assets developed in international collaborations; and (ii) innovators, researchers and their teams, so that they have concrete guidance and tools supporting them in the management of intellectual assets when research security may be involved.

Scope:

Global developments and the evolving geo-political context increasingly influence the way intellectual assets, including intellectual property, are valorised and managed. In this context,

risks related to undesirable transfer of knowledge, malign influence and ethical or integrity violations require rethinking the strategies for using and sharing intellectual assets and adequately balancing openness and protection.

The crucial role of intellectual assets management in research security has been recently recognised at the EU and international levels, for instance in the context of the European Economic Security Strategy [186] and Multilateral Dialogue on Principles and Values for Research and Innovation[https://research-and-innovation.ec.europa.eu/document/download/3b27e6ed-3d55-45f6-8ddc-98210bf90784_en?filename=ec_rtd_report-on-research-security-workshop.pdf%22%20\h].
The need to support universities and research performing organisations in the management of the intellectual assets in the context of international collaborations is also stressed by the recent proposal for a Council Recommendations on enhancing research security.[eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=COM:2024:26:FIN]

However, only limited national initiatives have been established so far to define what are the risks for research security entailed in the management of intellectual assets and what are the potential means to address them [187]. To this point, no harmonised set of principles and concrete recommendations have been developed at the EU level.

This study would fill this gap and provide recommendations helping R&I actors to identify the risks and the mitigation measures.

In particular, the study goals are:

1. Identifying the risks for intellectual assets management (e.g. with respect to licensing of patents related to critical technologies, export control of dual-use items or sharing of data and know-how but also covering undesirable transfer) from the research security perspective in the European R&I landscape;

2. Analysing existing research security practices and measures, as well as specific implementation tools, in Member States and in major international partners (other OECD countries) and their implication for intellectual assets management. The study should provide an assessment of the different ways in which such assets are typically managed, the risks that do or can arise in international cooperation activities, and how exactly Member States and other OECD countries have sought to address them);

3. Identifying gaps and challenges for research security in relation to intellectual assets management at the national and European levels;

186 Strategic Autonomy and European Economic and Research Security - European Commission (europa.eu)

187 Some national governments have issued guidelines on IP management for research security and provide practical support (e.g., Secure Innovation Company Guidance | NPSA in the UK, Contact Point for Knowledge Security in the Netherlands and Counter-foreign interference guidance for the academic sector in the Czech Republic).

4. Providing principles and concrete guidance addressed to all R&I ecosystem actors for the management of intellectual assets from the research security perspective, including in the context of EU funded programmes.

The study is **targeted** to organisations, innovators, researchers and their teams. The study should take due account of the different challenges faced by, and the needs of, public and private organisations.

The **duration** of the study is one year.

The **geographical scope** of the study will cover European countries. Inspiration could also be drawn from countries outside of Europe, such as the US, where similar guidelines and recommendations where developed.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q2 of 2026

Indicative budget: EUR 0.20 million from the 2026 budget

4.4. RDI database for evidence-based policy. Keeping data up-to-date and integrating new sectors for analysis

Objective: maintain and further expand the existing data base for the monitoring of private R&D&I investment data, to underpin data analyses for the monitoring and assessment of value and supply chains as well as analyses on economic and technologic conditions to inform R&I policies and R&D&I support to industries and in several technology areas. The latter currently include green technologies, advanced materials, biotechnologies and advanced manufacturing.

Following the Heitor report and the recommendation on the "*Launch of a technology monitoring initiative and ensure that it provides regular inputs to relevant Horizon programmes, councils, agencies, as well as a broader public.*", the database will be fed with data updates and data on new technology areas will be added from external data sources, taking into account their strategic importance, for example of micro-electronics; chips manufacturing, AI, quantum technologies, space, or also dual use and defence technologies.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q2 of 2026

Indicative budget: EUR 0.15 million from the 2026 budget and EUR 0.30 million from the 2027 budget

4.5. Raw materials events

It is envisaged to procure activities for the organisation of events (conferences, workshops or seminars), including the Raw Materials Week through Framework Contracts before the end of 2025.

DG GROW is organising the Raw Materials Week in the fourth calendar quarter of 2026 and 2027, covering set of events gathering raw materials R&I community, dissemination on R&I funding opportunities, Horizon projects results, matchmakings and the High-Level Conference on Raw Materials.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q2 of 2026

Indicative budget: EUR 0.80 million from the 2026 budget and EUR 0.80 million from the 2027 budget

4.6. Study for the Critical Raw Materials Centre

Complementary to the Critical Raw Materials Act and in line with the recommendations of the Draghi report, the Clean Industrial Deal announced that by Q4 2026, the Commission will set up a dedicated EU Critical Raw Material Centre. The Centre would improve competitiveness of the EU industry and security of raw material supply. The Centre would jointly purchase raw materials on behalf of interested companies and in cooperation with the Member States. Other tasks of the Centre could relate to coordinating strategic stockpiles, supply chain monitoring, designing financial products to invest in upstream supply in the EU and third countries. The materials scope of the Centre's activities would be the Strategic and Critical Raw Materials established in the CRM Act.

A service provider is to deliver a study and assist the Commission in preparation and implementation of the Centre.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q2 of 2026

Indicative budget: EUR 0.60 million from the 2026 budget

4.7. Anthropometric dataspace supporting standards development

The public procurement action (PP) will pilot an open-source dataspace of anthropometric data needed to develop and improve innovative human-centric industrial products and processes. Furthermore, such data will support the development of relevant European standards. The main objective of this action is to develop and maintain an open-source

dataspace where anthropometric data from different sources could be pooled and (re-)used for the R&I of innovative industrial products and process, including the development of (harmonised) standards, and made accessible for all possible users, including but not limited to SMEs, scale-ups and other industry. The action will explore and address barriers to collecting, storing, sharing and (re-)using such data. The action will explore and address cross-domain interoperability with other European Common Data Spaces (e.g., health, mobility, manufacturing) to valorise the results of this action in other sectors and unlock innovation potential beyond the anthropometric domain. The action is expected to have a duration of three years, one year to build the database, and two years to maintain and develop a sustainable self-financing model.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q2 of 2026

Indicative budget: EUR 0.65 million from the 2026 budget

4.8. Conferences, outreach, studies and other activities on the impact of Artificial Intelligence in R&I and other critical technologies

The adoption of Artificial intelligence technology and related tools in research and innovation has a tremendous potential to accelerate the discovery process, increase scientific productivity, as well as fast-track innovation processes to have a huge contribution to solving societal challenges. Further understanding and monitoring of the impact of AI in R&I is needed. At the same time, it is important to gauge the potential impact on the research and innovation ecosystems.

Actions are expected to be undertaken on the impact of Artificial Intelligence in R&I. These may include:

- Events and publications (e.g. information, communication, dissemination activities etc.);
- Studies including socio-economic and impact analysis studies;
- Policy support activities, including benchmarking activities, evaluation and impact assessments; and
- Maintenance and further development of the RDI Database to provide up-to-date data and analysis on key technologies and sectors, ensuring evidence-based policy support and regular inputs to Horizon Europe programming in line with priorities such as economic security and competitiveness.

Details will be provided in the texts of these calls for tender.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q2 of 2026

Indicative budget: EUR 0.50 million from the 2026 budget and EUR 0.70 million from the 2027 budget

4.9. Peer-to-peer learning pilot for capacity building of Technology Transfer Offices (TTOs)

This pilot will focus on the design, organisation and delivery of peer-to-peer learning actions aimed at building capacities in Technology Transfer Offices (TTOs) in universities and public research organisations. It should include one-on-one matchmaking among TTOs across EU member states and associated countries, ensuring geographical representation and variety in maturity and performance of TTOs; peer-to-peer learning actions could consist of staff secondment, visits, as well as online exchanges targeting specific challenges.

The pilot should result in the development of skills of technology transfer professionals, the reinforcement of institutional capabilities of their TTOs, and improvement of the overall processes and practices for technology transfer and commercialisation at organisational level. It should also contribute to the dissemination of learnings from the initiative, guiding the further uptake of peer-to-peer models for technology transfer in host ecosystems and beyond.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative budget: EUR 0.50 million from the 2027 budget

4.10. Study to Develop Guidelines for Streamlining the Validation of Advanced Materials

Objective: Validation requirements for materials (e.g., safety, performance, environmental compliance) are essential for ensuring safe and high performing products. However, they often pose significant challenges for innovative solutions due to ambiguity in interpretation, complexity of different regulatory frameworks, time delays in testing and validation or high costs, all of which can disproportionately affect startups and SMEs and, furthermore, delay the time-to-market for innovative materials that contribute to a more competitive and resilient industry.

The objective of this action is to develop guidelines that help to accelerate the validation process for advanced materials and, overall, mitigate barriers to market uptake, particularly for startups and SMEs. Separate guidelines will be developed to address the specific needs of high-impact sectors, such as energy, mobility, construction and electronics, among others.

This study will provide:

1. Sector-specific guidelines for high impact sectors.

2. Practical recommendations and best-practices, co-created with key stakeholders (eg., regulators, competent authorities, EU Member States, and industry).

3. A roadmap for streamlined validation, reducing barriers without compromising safety or sustainability.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q1 2027

Indicative budget: EUR 0.60 million from the 2027 budget

4.11. Support to implementation of Strategic Projects under the Critical Raw Materials Act

To support the Commission in implementing activities of projects recognised as Strategic Projects under the Critical Raw Materials Act, particularly on technological developments such as supporting pilot demonstrators development and market implementation of R&I solutions. This support will include organising advisory support for project finance, organising matchmaking and pitching possibilities with offtakers and financial institutions.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Q4, 2026

Indicative budget: EUR 2.00 million from the 2026 budget

5. Digital

5.1. Emergency response and resources allocation

As part of the European AI Office's activities in the policy area of AI for Public Good and AI for disaster management, innovative solutions and services are to be implemented to enhance emergency response in the face of natural disasters like flooding. This will be done through a combination of advanced technologies including AI, geographic information systems, and real-time data analytics empowering emergency responders to anticipate, optimize, and track resource allocation, coordinate response efforts more effectively.

The goal is to develop innovative AI models catering for an **open, modular, accessible, multi-hazard platform** by harnessesing the potential of artificial intelligence (AI) to significantly enhance emergency response capabilities during natural disasters, supporting them with actionable data. The ecosystem will leverage existing global, national and regional systems like the Global Wildfire Information System (GWIS) Decision Support System or the systems from the Copernicus Emergency Management Service such as the Global Flood

Awareness System, and link with EU initiatives providing relevant data, such as Copernicus or Destination Earth.

This proposal is to enable innovative AI-based enhancements of multi-hazard platforms in European Preparedness **for the benefit of the Union Civil Protection Mechanism (UCPM)**, which is currently being developed for forest fires under HE WP25, to address different disasters beyond wildfires, including floodings, and landslides.

The multi-hazard platform will improve the quantification of resources needed during crises, thereby enhancing the capacity of the rescEU platform for European preparedness and Crisis Coordination Hub. The Capabilities of multi-hazard platforms extended with AI-based enhancements extension to be procured by the EC should include:

- Development of real-time innovative ways of monitoring floods and, if feasible landslides for resource allocation related to emergency response. This includes the development of AI-based methods to enrich hazard and impact monitoring as well as the collection of relevant data where necessary. State-of-the-art experts doing research and innovation in these areas will be called upon to define and design the AI models.
- Integration into the existing multi-hazard platform
- Pre-operational testing in the EU under the European Civil Protection Mechanism, but also in low-income areas.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Third quarter of 2026

Indicative budget: EUR 5.00 million from the 2026 budget

5.2. AI powered Digital Twin for Reconstruction

To extend the production version of the AI-based solution for a Local Digital Twin for Reconstruction built under WP25, under AI for Public Good with innovative features. The tool will allow urban planners to simulate and evaluate potential rebuilding scenarios based on damage assessments and precise reconstruction costs.

The Local Digital Twin for Reconstruction will improve the Crisis Coordination Hub and the management of the reconstruction of cities in the EU as a result of natural or human-made disasters.

The extensions will address:

- Innovative and state-of-the-art AI models to plan reconstruction beyond buildings to also include utility infrastructure such as water and electricity networks.

- Self-learning capabilities for effective assessment and expenditure control of reconstruction also to be developed.

- Alignment with Mission call for 2025 focusing on Digital Twins[188] for urban planning to ensure reusability of relevant results and common approaches. Particularly in the area of support for decision-making and prioritization of policies and investment for sustainable, energy-efficient, and climate-neutral measures. Also more efficient urban planning and reconstruction by using more environmentally friendly materials contributing to planet diversity and biodiversity.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: Third quarter of 2026

Indicative budget: EUR 6.00 million from the 2026 budget

5.3. Digital conferences, outreach, studies and other activities

In addition to calls for proposals, other actions are also expected to be undertaken on specific activities that DG CONNECT will support. These include:

- Other events and publications (e.g. information, communication, dissemination etc.).

- Studies including socio-economic and impact analysis studies, and studies to support the monitoring, evaluation and strategy definition for the ICT priority of Cluster 4 in Horizon Europe. It should be noted that internal outsourcing of studies to other Commission departments based on Administrative Agreements can be used as an alternative to public procurement.

- R&I-releted policy support activities, including benchmarking activities, evaluation and impact assessments, the development of ad hoc support software. It should be noted that internal outsourcing of studies to other Commission departments based on Administrative Agreements can be used as an alternative to the public procurement.

Form of Funding: Procurement

Type of Action: Public procurement

Indicative timetable: 2nd quarter of year 2026 and 2027

Indicative budget: EUR 4.00 million from the 2026 budget and EUR 4.00 million from the 2027 budget

188 https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/HORIZON-MISS-2025-04-CIT-02

Subscription Actions

1. Support to Hydrogen in the Economy

The Commission represents the European Union in the International Partnership for Hydrogen and Fuel Cells in the Economy. This is of direct relevance to the energy-intensive industries covered under Cluster 4. The annual financial contribution will be paid to the entity responsible for managing it.

Type of Action: Subscription action

Indicative budget: EUR 0.05 million from the 2026 budget and EUR 0.05 million from the 2027 budget

Other budget implementation instruments

1. Project monitoring and use of individual experts (space)

This action will support the use of appointed independent experts by DEFIS and HADEA for the monitoring of running actions (grant agreement, grant decision, public procurement actions, financial instruments) funded under Horizon Europe, previous Framework Programmes for Research and Innovation and relevant PPPA actions, and where appropriate include ethics and gender equality checks.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative budget: EUR 1.00 million from the 2026 budget and EUR 1.00 million from the 2027 budget

2. Project monitoring and use of individual experts (Industry)

This action will support the use of appointed independent experts by HaDEA and RTD for the monitoring of running industry actions (grant agreement, grant decision, public procurement actions and financial instruments) funded under Horizon Europe and previous Framework Programmes for Research and Innovation, and where appropriate include ethics checks, as well as compliance checks regarding the Gender Equality Plan eligibility criterion. Independent experts may additionally be tasked to advise on EU research and innovation policy, including on policies related to Advanced Materials, Industry 5.0, AI in Science, Biotechnology, Semiconductors, Economic Security and Critical Technologies.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative budget: EUR 1.50 million from the 2026 budget and EUR 1.60 million from the 2027 budget

3. Commission expert group: "RAISE High-level Academic Advisory Board"

The "RAISE High-level Academic Advisory Board" was announced in the European AI in Science Strategy (COM(2025) 724)[1] to support the Commission with strategic advice on the implementation of the Strategy and the development of RAISE, the Resource for Artificial Intelligence (AI) Science in Europe. At present, this group with an advisory function is to be implemented as a Commission expert group. This expert group will provide independent scientific guidance as to AI science, i.e. the development of AI technologies and their application across scientific disciplines. The expert group will be composed of leading academics in AI science, underpinning the credibility, inclusiveness, and long-term sustainability of RAISE.

A special allowance of EUR 450[189] in the form of a daily unit cost for each full working day spent assisting the Commission, or a special allowance of EUR 225 for each half working day, will be paid to the experts appointed in their personal capacity who act independently and in the public interest. This amount is considered to be proportionate to the specific tasks to be assigned to the experts, including the number of meetings to be attended and possible preparatory work.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative budget: EUR 0.12 million from the 2026 budget

4. Use of individual experts to support raw materials policy (GROW and HaDEA)

This action will support the use of appointed individual independent experts for advising and assisting the Commission services (GROW) with the implementation of the European Critical Raw Materials Act. Individual experts will support the Commission in the assessment of applications for the recognition of a critical raw materials project as a Strategic Project. In this context, the experts will assess proposed projects that can cover extraction, processing or recycling of raw materials in terms of their R&I maturity, appropriateness of proposed R&I solutions, involvement in EU or national R&I funded projects, technological and patent risks, technical feasibility, financial maturity, compliance with environmental-, social- and governance-related standards as well as with the United Nations Framework Classification for Resources. The tasks of individual experts would include remote analysis, preparatory work, drafting of reports as well as participation in discussions and meetings with other experts and Commission services. The experts will be highly qualified and specialised, and will be selected on the basis of objective criteria, following an open call for expressions of interest. A special allowance of EUR 450/day will be paid to the expert appointed in its personal capacity who acts independently and in the public interest.

Form of Funding: Other budget implementation instruments

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189 Commission decision establishing horizontal rules on the creation and operation of Commission expert groups, C(2016)3301

Type of Action: Expert contract action

Indicative budget: EUR 0.93 million from the 2026 budget

5. Use of individual experts to support raw materials policy (HaDEA)

This action will support the use of appointed individual independent experts for advising and assisting the Commission services (HaDEA) with the implementation of the European Critical Raw Materials Act. Individual experts will support the Commission in the assessment of applications for the recognition of a critical raw materials project as a Strategic Project. In this context, the experts will assess proposed projects that can cover extraction, processing or recycling of raw materials in terms of their R&I maturity, appropriateness of proposed R&I solutions, involvement in EU or national R&I funded projects, technological and patent risks, technical feasibility, financial maturity, compliance with environmental-, social- and governance-related standards as well as with the United Nations Framework Classification for Resources. The tasks of individual experts would include remote analysis, preparatory work, drafting of reports as well as participation in discussions and meetings with other experts and Commission services. The experts will be highly qualified and specialised, and will be selected on the basis of objective criteria, following an open call for expressions of interest. A special allowance of EUR 450/day will be paid to the expert appointed in its personal capacity who acts independently and in the public interest.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative budget: EUR 0.93 million from the 2027 budget

6. External Expertise Digital (CNECT)

This action will support the use of appointed independent experts by CNECT for the monitoring of running digital actions (grant agreement, grant decision, public procurement actions, financial instruments) funded under Horizon Europe and previous Framework Programmes for Research and Innovation, and include ethics checks, where appropriate, as well as compliance checks regarding the Gender Equality Plan eligibility criterion.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative budget: EUR 1.80 million from the 2026 budget and EUR 1.80 million from the 2027 budget

7. External Expertise Digital (HADEA)

This action will support the use of appointed independent experts by HADEA for the monitoring of running digital actions (grant agreement, grant decision, public procurement actions, financial instruments) funded under Horizon Europe and previous Framework

Programmes for Research and Innovation, and include ethics checks, where appropriate, as well as compliance checks regarding the Gender Equality Plan eligibility criterion.

Form of Funding: Other budget implementation instruments

Type of Action: Expert contract action

Indicative budget: EUR 0.60 million from the 2026 budget and EUR 0.50 million from the 2027 budget

Grants to identified beneficiaries

Industry

1. Presidency Event (conference) on AI in Science 2026

Expected Outcome: Informing of and providing a platform to debate and implement the AI in Science policies of the European Commission with stakeholders and Member States.

Scope: Two days of discussions and matchmaking on AI in Science issues and trends with high level policy decision makers at Member State, European and international level, as well as the scientific community.

This conference is organised by the rotating Presidency of the Council of the European Union, with the close involvement of the European Commission, DG Reasearch & Innovation.

The conference will raise awareness of the strategic importance of incorporating AI in science, bring together all stakeholders to discuss the challenges and opportunities and build a European AI in science community.

Specific conditions:

The evaluation committee will be composed fully of representatives of the European Commission.

Subcontracting is not restricted to a limited part of the action.

Legal entities:

A responsible ministry or agency of the EU Member State holding the Presidency

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 198(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative timetable: Q1 2026

Indicative budget: EUR 0.35 million from the 2026 budget

2. Presidency Event (conference) on AI in Science 2027

Expected Outcome: Informing of and providing a platform to debate and implement the AI in Science policies of the European Commission with stakeholders and Member States.

Scope: Two days of discussions and matchmaking on AI in Science issues and trends with high level policy decision makers at Member State, European and international level, as well as the scientific community.

This conference is organised by the rotating Presidency of the Council of the European Union, with the close involvement of the European Commission, DG Reasearch & Innovation.

The conference will raise awareness of the strategic importance of incorporating AI in science, bring together all stakeholders to discuss the challenges and opportunities and build a European AI in science community.

Specific conditions:

The evaluation committee will be composed fully of representatives of the European Commission.

Subcontracting is not restricted to a limited part of the action.

Legal entities:

A responsible ministry or agency of the EU Member State holding the Presidency

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 198(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative timetable: Q1 2027

Indicative budget: EUR 0.35 million from the 2027 budget

3. Presidency Event (conference): Technologies for Europe 2027

Events of a major strategic nature, which are focused and attract a broad spectrum of stakeholders, are important in assessing past activities, identifying policy options and priorities, and planning future actions.

The European Commission will support the organisation of a Presidency conference in 2027, in cooperation with a government holding the EU Presidency of the European Union at the time.

This event may cover aspects of industrial technologies, including the twin green and digital transformation of European industry, in particular green and circular technologies and materials, as well as relevant digital technologies.

This event is organised by the rotating Presidency of the Council, the latter of which is the named beneficiary of the grant in question, via a responsible ministry or agency of the EU Member State holding the Presidency.

Specific conditions:

The evaluation committee will be composed fully by representatives of EU institutions.

Subcontracting is not restricted to a limited part of the action.

Legal entities:

A responsible ministry or agency of the EU Member State holding the Presidency

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 198(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative timetable: Q1 2026

Indicative budget: EUR 0.20 million from the 2026 budget

4. Presidency Event (conference): Technologies for Europe 2028

Events of a major strategic nature, which are focused and attract a broad spectrum of stakeholders, are important in assessing past activities, identifying policy options and priorities, and planning future actions.

The European Commission will support the organisation of a Presidency conference in 2028, in cooperation with a government holding the EU Presidency of the European Union at the time.

This event may cover aspects of industrial technologies, including the twin green and digital transformation of European industry, in particular green and circular technologies and materials, as well as relevant digital technologies.

This event is organised by the rotating Presidency of the Council, the latter of which is the named beneficiary of the grant in question, via a responsible ministry or agency of the EU Member State holding the Presidency.

Specific conditions:

The evaluation committee will be composed fully by representatives of EU institutions.

Subcontracting is not restricted to a limited part of the action.

Legal entities:

A responsible ministry or agency of the EU Member State holding the Presidency

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 198(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative timetable: Q1 2027

Indicative budget: EUR 0.20 million from the 2027 budget

5. Presidency event: High-level Conference on Metrology

The action will support a high-level conference during the Lithuanian Presidency of the Council in 2027, focusing on the strategic importance of metrology collaboration in Europe for the competitiveness of the research and innovation ecosystem and industry. It will position metrology as a horizontal enabling infrastructure that supports the development, validation, standardisation, and adoption of critical technologies supporting EU's strategic autonomy.

The conference will bring together representatives of national authorities, national metrology institutes, research organisations, and industrial stakeholders to discuss the strategic role of metrology in the context of Europe's growing focus on resilience, competitiveness and technological sovereignty. The event will contribute to the broader discussion on how the European metrology ecosystem can evolve in the future to deliver greater impact, strengthen policy relevance, and reduce dependencies on third-country standards and measurement technologies in critical sectors.

Specific conditions:

The evaluation committee will be composed fully by representatives of EU institutions.

Subcontracting is not restricted to a limited part of the action.

Legal entities:

State Research Institute Centre for Physical Sciences and Technology (FTMC) / Valstybinis mokslinių tyrimų institutas Fizinių ir technologijos mokslų centras, Savanorių Ave. 231, 02300 Vilnius, Lithuania

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 198(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative budget: EUR 0.15 million from the 2027 budget

Digital

1. Organisation of the Presidency Event European Quantum Technologies Conference (EQTC) 2026

Expected Outcome: The EQTC 2026, the latest in the EQTC series, will be dedicated to reinforcing Europe's leadership in quantum technologies by fostering and promoting a collaborative ecosystem that includes academia, industry, and governmental bodies. This event will serve as a critical platform for discussing strategic directions, sharing innovations, and engaging the entire European quantum technology community.

Scope: This three-day conference will focus on a variety of quantum technologies such as quantum computing, quantum communication, quantum sensing and metrology, and quantum materials. High-level decision-makers from Member States, the European Commission, and key international stakeholders will engage in discussions aimed at advancing the quantum technology sector within Europe.

Specific conditions

The evaluation committee will be composed fully of representatives of the European Commission.

Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [190].

[190] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link:

Legal entities:

Responsible ministry or agency of the EU Member State holding the Presidency

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 198(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative timetable: Third quarter of 2026

Indicative budget: EUR 0.30 million from the 2026 budget

2. Organisation of the Presidency Event European Quantum Technologies Conference (EQTC) 2027

Expected Outcome: The EQTC 2027, the latest in the EQTC series, will be dedicated to reinforcing Europe's leadership in quantum technologies by fostering and promoting a collaborative ecosystem that includes academia, industry, and governmental bodies. This event will serve as a critical platform for discussing strategic directions, sharing innovations, and engaging the entire European quantum technology community.

Scope: This three-day conference will focus on a variety of quantum technologies such as quantum computing, quantum communication, quantum sensing and metrology, and quantum materials. High-level decision-makers from Member States, the European Commission, and key international stakeholders will engage in discussions aimed at advancing the quantum technology sector within Europe.

Specific conditions:

The evaluation committee will be composed fully of representatives of the European Commission.

Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [191].

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https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

[191] This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link:

Legal entities:

Responsible ministry or agency of the EU Member State holding the Presidency

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 198(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative timetable: Third quarter of 2027

Indicative budget: EUR 0.30 million from the 2027 budget

3. Presidency Event 2026

Expected Outcome: Informing of and providing a platform to debate and implement the digital policies of the European Commission with stakeholders and Members States.

Scope: Two days of discussions on European digital issues and trends with high level Digital Policy decision makers at Member State, European and international level. This particular conference, organised since 2011, is an outreach event on the EU's digital policies, bringing together a wide range of digital stakeholders.

Specific conditions:

The evaluation committee will be composed fully of representatives of the European Commission.

Legal entities:

Responsible ministry or agency of the EU Member State holding the Presidency

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 198(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

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https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

Indicative timetable: Third or fourth quarter of 2026

Indicative budget: EUR 0.50 million from the 2026 budget

4. Presidency Event 2027

Expected Outcome:

Informing of and providing a platform to debate and implement the digital policies of the European Commission with stakeholders and Members States.

Scope: Two days of discussions on European digital issues and trends with high level Digital Policy decision makers at Member State, European and international level. This particular conference, organised since 2011, is an outreach event on the EU's digital policies, bringing together a wide range of digital stakeholders.

Specific conditions:

The evaluation committee will be composed fully of representatives of the European Commission.

Legal entities:

Responsible ministry or agency of the EU Member State holding the Presidency

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant to identified beneficiary according to Financial Regulation Article 198(e) - Coordination and support action

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative timetable: Third or fourth quarter of 2027

Indicative budget: EUR 0.50 million from the 2027 budget

Heading 7 of Space - Monitoring Space

1. SST Sensors and Processing

Expected outcome

Projects developed under this topic are expected to contribute to the following outcomes:

- Increase the resilience of EU SST capabilities and the Union's strategic autonomy in the SST domain.

- Strengthen European cooperation and interoperability among institutional actors contributing to the delivery of SST public services while contributing to the global challenge of spaceflight safety.

- Improvement of efficient EU SST operational capabilities and of detection sensitivity by supporting space-tracking infrastructure located in and outside continental Europe.

Scope

The following sensors and data processing R&I activities should be addressed to tackle the above expected outcomes:

- To support the development or the upgrade of institutional Sensors & Processing capacities.

- To improve the efficiency of EU SST system architecture (accelerate sensors integration, improve real time monitoring of the network, ConOps etc) through necessary sensors upgrades.

- To improve sensors performances (e.g. measurements quality (noise; bias; measurements rates ...); tracks accuracy (track noise; track duration...)).

- To develop new techniques and technologies enhancing detection sensitivity of EU SST sensors (e.g. less than 10 cm at 1000 km cm in LEO, less than 30 cm in MEO/GEO). Note: Priority should be given to projects focusing on LEO detection even though preeminent proposals in other orbit regimes will be considered.

- To enhance the integration and combined analysis of data from multiple sources (including ground based) to improve detection accuracy, operational efficiency, and real-time data management, contributing to the EU's strategic autonomy and interoperability among institutional actors.

The selected proposal is expected to reach TRL 8 by the end of the project. The reference TRL (Technology Readiness Level) definition is the ISO 16290:2013 applicable to the space sector.

The selected proposal should explore synergies and be complementary to already funded actions in the context of technology development at component level. In particular, it is expected that proposals make use of existing European technologies and/or building blocks at component level contributing to European non-dependence and strengthen competitiveness. Furthermore, proposed activities should be complementary to national activities and activities funded by the European Space Agency (ESA).

Specific conditions

- In order to achieve the expected outcomes, and safeguard the Union’s strategic assets, interests, autonomy, or security, namely avoiding a situation of technological dependency on a non-EU source, in a global context that requires the EU to build on its

strengths and to carefully assess and address strategic weaknesses, vulnerabilities and high-risk dependencies, participation is limited to legal entities established in Member States. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible.

- For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security . Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees. The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established. [192]

- This is an Innovation Action (IA) with reduced funding rate (45%).

- The evaluation committee can be partially composed by representatives of EU institutions.

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192 *The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.*

Indicative timetable: in quarter Q4 of year 2027.

Legal entities:

EUSST Partnership

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant awarded without call for proposals according to Financial Regulation Article 198 (f)

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative budget: EUR 28.00 million from the 2027 budget

2. Consolidate commercial SST capabilities on sensors

Expected outcome

Projects developed under this topic are expected to contribute to the following outcomes:

- To reinforce European strategic autonomy and resilience in space surveillance and tracking capabilities (sensors and associated data processing) by leveraging innovation and competitiveness of the European industry and start-ups.
- To develop and/or improve existing commercially available assets and SST-related technologies fostering competition and market development, allowing the European SST industry and start-ups to be competitive on global markets.
- To complement, as defined by EUSST Partnership's architecture studies, existing Member States patrimonial SST capacities with European privately-owned ones, assuring interoperability and adopting global standards.
- To improve European SST operational capabilities and detection sensitivity by supporting the extension of space-tracking infrastructure located outside continental Europe.
- To prepare EU industry to capture new SST markets in the domains by proposing competitive, cutting-edge sensors.

Scope

The following sensors and data processing R&I activities should be addressed to tackle the above expected outcomes:

- Novel, cost-effective sensor concepts and technologies capable of detecting, tracking and surveying objects in order to improve the state-of-the-art performance according to the target orbit regime (e.g. less than 10 cm at 1000 km cm in LEO, less than 30 cm in MEO/GEO). Note: Priority should be given to projects focusing on LEO detection even though preeminent proposals in other orbit regimes will be considered.

- Autonomous sensor concepts to increase operational robustness, to reduce response times, to reduce operation costs, amongst others.

- Tools, techniques, and technologies necessary to significantly improve the efficiency of future or existing commercial sensor's network by streamlining the scheduling and tasking of its sensors.

- State-of-the-art technologies and concepts improving sensors' tracking and surveillance performances (measurements quality (noise; bias; measurements rates ...), tracks accuracy (track noise; track duration...), sensors' field of view…

- Cost-effective tracking and/or surveillance sensor concepts expanding orbital coverage of Member States patrimonial SST capacities and/or meeting commercial market needs.

- Any promising technology for precise tracking and data processing.

The expected outcomes will be achieved, and the scope will be covered through the use of FSTP (Financial Support to Third Parties) by the beneficiary. A "Third Party", submitting a FSTP proposal, could be either an entity or a consortium of entities.

FSTP proposals are expected to start between TRL 4 and TRL 5 and reach at least TRL 7 by the end of the project. The reference TRL (Technology Readiness Level) definition is the ISO 16290:2013 applicable to the space sector.

FSTP proposals under this topic should explore synergies and be complementary to already funded actions in the context of technology development at component level. In particular, it is expected that FSTP proposals make use of existing European technologies and/or building blocks at component level contributing to European non-dependence and strengthen competitiveness. Furthermore, proposed activities should be complementary to national activities and activities funded by the European Space Agency (ESA).

Specific conditions

- In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, namely avoiding a situation of technological dependency on a non-EU source, in a global context that requires the EU to build on its strengths and to carefully assess and address strategic weaknesses, vulnerabilities and high-risk dependencies, participation is limited to legal entities established in Member States. Proposals including entities established in countries outside the scope specified in the call/topic/action will be ineligible.

- For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security . Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees. The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established. [193]

- The support to third parties can only be provided in the form of grants.

- In accordance with article 207 of the EU Financial Regulation the maximum amount to be granted to each third party can exceed EUR 60,000. This derogation is justified by the fact that the foreseen actions to be funded by FSTP (which may be mono-beneficiary or involve a consortium) will be incorporating breakthrough and disruptive techniques and technologies to improve SST sensors performance and/or operations. Indeed, costly hardware (such as radar, optical…) development and implementation tests are sought on

193 *The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.*

this topic. The minimum amount of each FSTP proposal is expected to be in the range of EUR 3 to 4 million and the maximum amount is EUR 9 million.

- The funding rate for each FSTP grant is 65%. Third parties will finance the remaining 35% of the amount of the FSTP proposal.
- This is an Innovation Action (IA).
- The evaluation committee can be partially composed by representatives of EU institutions.

Indicative timetable: in quarter Q4 of year 2027.

Legal entities:

EU SST Partnership

Form of Funding: Grants not subject to calls for proposals

Type of Action: Grant awarded without call for proposals according to Financial Regulation Article 198 (f)

The general conditions, including admissibility conditions, eligibility conditions, award criteria, evaluation and award procedure, legal and financial set-up for grants, financial and operational capacity and exclusion, and procedure are provided in parts A to G of the General Annexes

Indicative budget: EUR 24.00 million from the 2027 budget

Scientific and technical services by the Joint Research Centre

1. Industrial Research & Innovation – Industrial R&D Investment Scoreboard and monitoring and analysis of data and dynamics

Objective: to generate data and analytical evidence on industrial R&D investments worldwide to support policy making and the response to changing policy needs and industrial and technological dynamics via continued monitoring, analysis and benchmarking of global and European R&D investment, establishing the EU Industrial R&D Investment Scoreboard as well as intelligence and analytics around the Scoreboard and its data. A main goal is the analysis of the EU's positioning with regard to competitiveness, sustainability, and economic security. Two annual Scoreboards will be developed to serve a policy tool regarding the directionality of corporate R&D, innovation activities and long-term analyses.

Scope: The previous monitoring of R&D investment activities already provides a number of indicators on corporate R&D intensity, type of invested technologies and economic strength. The objective of this action is to add indicators and dedicated analyses on R&D investments, technologies, assets, and positioning, targeting specifically the monitoring of industries that are critical to EU competitiveness and policy priorities, and enriching the indicators, using the

results of the study on indicators and the RDI database for evidence-based policy. Dedicated analyses will capture new and emerging trends to inform policy makers.

Type of Action: Provision of technical/scientific services by the Joint Research Centre - SLA in the form of administrative agreement.

Indicative timetable: Q1 of 2026

Indicative budget: EUR 1.00 million from the 2026 budget

2. JRC Support to implement Article 34 relating to the adoption of delegated acts to supplement Art 28, 29, 31 and 33 on alignment with other Union harmonisation legislation

CRMA Article 34 sets out that the Commission is empowered to establish delegated acts linked with article 28 to inter alia specify requirements for the technical design and operation of the data carrier, refer to technical standards to be used, set out rules on unique product identifier. GROW intends to work with JRC on this issue via an Administrative arrangement.

Under this action technological and methodological aspects will be elaborated, including building on R&I results from Horizon projects on traceability and due diligence of raw materials supply chains.

Type of Action: Provision of technical/scientific services by the Joint Research Centre - SLA in the form of administrative agreement.

Indicative timetable: Q1 of 2026

Indicative budget: EUR 0.40 million from the 2026 budget

3. JRC Support to Critical Raw Materials Act, Strategic Technologies value chains and Energy-Intensive Technologies

To continue the collaboration with the JRC on various aspects of raw materials value chain analysis, raw materials for industrial ecosystems, technological and R&I developments and trends, and the transition of energy-intensive industries (EIGL, Foresight).

Type of Action: Provision of technical/scientific services by the Joint Research Centre - SLA in the form of administrative agreement.

Indicative timetable: Q1 of 2026

Indicative budget: EUR 1.50 million from the 2026 budget

4. JRC support to Artificial Intelligence in Science policies with a focus on RAISE

Objective: The European Commission is analysing and monitoring the impact of Artificial Intelligence (AI) in Research and Innovation activities, and in particular its impact in science.

The goal is to design and deploy a set of policies that could facilitate the uptake of AI as key tool by EU scientists across all scientific disciplines.

As part of this effort the Commission is setting up RAISE (Resource for AI Science in Europe)[194] as a flagship initiative to pool European AI resources and provide with AI resources to the AI and scientific community in Europe.

This action has two main objectives:

- **Develop a pilot AI infrastructure for RAISE to support science with AI (approximately 85% of the budget)**. This infrastructure could become a resource for European scientists, starting by the RAISE beneficiaries, and an element to facilitate the pooling and connections of technical resources across Europe. The JRC will acquire infrastructure and licences needed to have State of the Art scientific AI tools and sovereign AI solutions; and will provide customer support to the users of these tools.

- **Support the AI in science policy with technical and scientific insights (approximately 15% of the budget)**. This action will support the implementation of the actions announced on the AI in science strategy[195], and in particular on the deployment of RAISE. The JRC will, among other activities, provide evidences for policy making (including papers and reports) and work with the European ecosystem of AI in science.

The action will be implemented, following Article 59 and Article 21.2.(g).(iii) of the Financial Regulation, in the form of an Administrative Agreement/Service Level Agreement.

Duration: 24 months

Type of Action: Provision of technical/scientific services by the Joint Research Centre - SLA in the form of administrative agreement.

Indicative timetable: Q4, 2026

Indicative budget: EUR 2.50 million from the 2027 budget

5. JRC support for monitoring the resilience of advanced materials value chains

Objective: Advanced materials value chains face critical vulnerabilities, including reliance on non-EU suppliers for (critical) raw material, precursors, intermediates, and processing capacities.

Under this work, the JRC will analyze and monitor the resilience of advanced materials value chains, including strengths, capabilities and dependencies of the Union for advanced materials and related technologies, including emerging ones and the EU capacity to develop them, that can contribute to one or more of the following points:

194 https://research-and-innovation.ec.europa.eu/strategy/strategy-research-and-innovation/our-digital-future/european-ai-science-strategy/raise-resource-ai-science-europe_en

195 https://research-and-innovation.ec.europa.eu/document/download/c1afd7d0-ff65-4f84-be48-b0e0949596c5_en

- Substitute/reduce use of critical raw materials,
- substitute/reduce use of substances of concern,
- improve circularity,
- improve performance of technologies/products.

The work will build synergies and complement the Observatory of Emerging Technologies and the Observatory of Critical Technologies.

This work will be closely linked to the Technology Council for Advanced Materials, particularly for the selection of technologies and products to evaluate and discussions on final outcomes.

The action will be implemented, following Article 59 and Article 21.2.(g).(iii) of the Financial Regulation, in the form of an Administrative Agreement/Service Level Agreement.

Duration: 36 months

Type of Action: Provision of technical/scientific services by the Joint Research Centre - SLA in the form of administrative agreement.

Indicative timetable: Q4, 2026

Indicative budget: EUR 0.80 million from the 2027 budget

Indirectly managed actions

1. ESA.1 - Heading 5 of Space - Using Space on Earth - Satellite navigation - EGNSS Evolution : Technology and infrastructure-related R&I activities

Actions under this area will address upstream R&D activities. They will cover the maturing of the existing technologies and the development of new and emerging technologies , the engineering activities for the further evolution of Galileo and EGNOS existing systems including LEOPNT, technical studies for the assessment of exploratory system concepts and/or responding to new mission needs (e.g. RFI monitoring) and a changing environment, the development and maintenance of state-of-art system tools and technical test-beds, the implementation of actions agreed at Programme level to reduce the dependence of the supply chain on non-EU markets (e.g. ground clocks), and others.

These activities will be implemented by ESA under the Contribution Agreement between the Commission and ESA. The procurement actions under this section will affect the essential security interests of the Union, and will therefore require restricted participation that will be established in the tender specifications. In such case, participation should in principle be open only to entities established in the EU Member States. Participation of entities established in Horizon Europe associated countries or in third countries will be decided on a case-by-case

basis with the approval of the annual work plan submitted to Commission under the Financial Framework Partnership Agreement (FFPA).

Form of Funding: Indirectly managed actions

Type of Action: Indirectly managed action

Indicative budget: EUR 30.00 million from the 2026 budget and EUR 30.00 million from the 2027 budget

2. ESA.2 - Heading 3 of Space - Using Space on Earth - Telecommunications - IRIS2 infrastructure: Development and Validation

The Commission has adopted a regulation[196] for establishing the EU Secure Connectivity Programme in 2023, which will lead to the development and deployment of the IRIS^2 constellation. The future IRIS^2 system – Infrastructure for Resilience, Interconnectivity and Security by Satellites – should build upon the GOVSATCOM component of the EU Space Programme, which should also take advantage of additional national and European capacities. The concession contract for the public-private partnership that will implement the IRIS^2 system has been signed with the SpaceRISE consortium in December 2024.

This action should enable and support the development and validation actions for the construction of the initial space and ground infrastructure required for the provision of governmental services.

These activities have been entrusted to ESA under a dedicated Contribution Agreement between the Commission and ESA. In particular, ESA will perform infrastructure development and validation activities as required to achieve full validation activities (including performances) of IRIS^2, that will be implemented by the Concessionaire.

IRIS^2 development will include system architecture tasks, engineering and design of non-recurring items, development, manufacturing, security and technology EU non-dependence aspects and all necessary qualification and tests of space and ground segments. It will also include all the new developments that are needed to achieve the programme's objectives, as well as all the early validations deemed as necessary for an early elimination of the technical risks (e.g., interface and functional testing between blocks).

Some of the procurement actions under this section will affect the essential security interests of the Union and will therefore require restricted participation, that will be established on a case-by-case basis in the tender specifications. In such case, in accordance with Article 136 of the EU Financial Regulation, participation should in principle be open only to entities established in the EU Member States and other Secure Connectivity/IRIS^2 participating states pursuant to the international agreement concluded with those states.

Form of Funding: Indirectly managed actions

196 Regulation (EU) 2023/588

Type of Action: Indirectly managed action

Indicative budget: EUR 108.10 million from the 2026 budget and EUR 162.40 million from the 2027 budget

3. ESA.3 - Heading 10 of Space - Boosting Space through IOD/IOV opportunities - IOV-IOD service

To ensure EU non-dependence and competitiveness in technologies, there is a clear need for a regular, sustainable, cost-effective and responsive In Orbit Demonstration/Validation (IOD/IOV) service in the EU. Space flight heritage in real conditions and environment is often required to de-risk new technologies, products, concepts, architectures, services and operations techniques be that for unique or recurrent, institutional or commercial missions.

Intended results of the action is to provide a service for regular aggregation (if needed), launch and operations in orbit for IOD/IOV experiments; the objective is to have at least one opportunity every year during the Horizon Europe implementation period. This will contribute to reduce the time to market or operational use of new technologies, products, concepts, architectures, and operations techniques.

The IOD/IOV activities intend to provide a regular and cost-effective service and solution for common flight ticket actions (management, spacecraft design including reuse of existing solutions, assembly, integration and tests, launch and operations) based on EU solutions both for the spacecraft (i.e. platform, experiments aggregation, operations in orbit including preparation and associated Ground Segment) and for the launch services.

The scope of the activities may include mission design, integration and implementation, for all the necessary tasks to prepare, provide and operate spacecraft(s), together with the related ground segment, which accommodates the selected IOD/IOV experiments as well as the associated launch services.

For the aggregation and operations, the activities include:

- System studies, at ground and space level, including the compatibility with the available launchers;
- Input to the launch mission analysis performed by the launch service provider;
- Selection, assembly, integration and testing of the spacecraft(s) and related ground segment;
- Management of interfaces with and between the different IOD/IOV experiments, between the spacecraft and the launcher and between the spacecraft and the ground segment;
- Preparation of the spacecraft(s) for the flight;
- In-orbit testing and operations including data provision.

Concerning launch aspects, IOD/IOV activities should support the European launcher exploitation policy, therefore relying as far as possible on EU manufactured launcher solutions launched from the EU territory. The actions will include the provision of flight opportunities with EU manufactured launchers which encompass the mission analysis, the verification of interfaces between the spacecraft and the launcher, the preparation of launch campaign and the flight up to the injection of the spacecraft(s) on the required orbit(s).

These activities and associated procurement actions will be implemented by ESA in line with the Contribution Agreement between the Commission and ESA.

Form of Funding: Indirectly managed actions

Type of Action: Indirectly managed action

Indicative budget: EUR 8.00 million from the 2026 budget and EUR 2.00 million from the 2027 budget

4. EUSPA.1 - Applications for EGNSS and for Copernicus

We need to make the best use of EGNSS and Copernicus capacities for EU citizens, companies and society. Research and innovation will foster the development of EGNSS and Copernicus downstream applications and promote their adoption in the EU and worldwide. A call for proposals under this area will address downstream R&D activities to be launched by the European Union Space Programme Agency (EUSPA) in accordance with the specification included in Appendix below.

Legal entities:

European Union Agency for the Space Programme (EUSPA), Janovského 438/2 170 00 Prague 7 – Holesovice Czech Republic

Form of Funding: Indirectly managed actions

Type of Action: Indirectly managed action

Indicative budget: EUR million from the 2027 budget

Appendix to EUSPA.1
Call - EGNSS and Copernicus Downstream

HORIZON-CL4-2027-EUSPA-SPACE

Conditions for the Call

Indicative budget(s)[197]

Topics	Type of	Budgets	Expected EU	Indicative

197

	Action	(EUR million)	contribution per project (EUR million)[198]	number of projects expected to be funded
		2027		
Opening: 21 Oct 2027 Deadline(s): 22 Feb 2028				
HORIZON-2027-EUSPA-SPACE-51	IA	0	2.00 to 2.50	3
Overall indicative budget		0		

General conditions relating to this call

Proposals are invited against the following topic(s):

HORIZON-2027-EUSPA-SPACE-51: Galileo and Copernicus contribution to the EU Preparedness Union Strategy

Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 2.00 and 2.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 0 million.
Type of Action	Innovation Actions
Eligibility conditions	If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used). The following additional eligibility criteria apply: This topic requires participation, as beneficiaries, of at least two crisis or security practitioner[199] organisations or agencies, established in at least two different EU Member States or Associated Countries. For participants with practitioner status, applicants must fill in the table "Information

[198] Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.

[199] Crisis or security practitioners has the meaning of organisations or agencies actively engaged in crisis or security operations, involved in e.g., law enforcement, customs, environmental crime management, smuggling and trafficking fighting and counter-terrorism, border and maritime surveillance, critical infrastructure operators, public safety, fundamental rights, disaster first/second responders, civil protection authorities, humanitarian aid etc.

	about security practitioners" in the application form with all the requested information, following the template provided in the submission IT tool.
Technology Readiness Level	Activities are expected to achieve TRL 7-9 by the end of the project. The reference TRL definition is the ISO 16290:2013 applicable to the space sector. Activities may start at any TRL.
Legal and financial set-up of the Grant Agreements	Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [200].

Expected Outcome: This topic aims to support activities that contribute to one or more key objectives and actions set by the EU Preparedness Union Strategy, leveraging the European GNSS services and differentiators (e.g., OSNMA[201], EWSS[202], SAS[203], HAS[204], etc.) and/or Copernicus data and services.

To that end, proposals under this topic should aim to deliver results that are tailored towards and contributing to fostering the development and preparing for the commercialization of innovative space-based solutions that enhance EU preparedness with respect to threats and crises, such as the ones caused by natural hazards, man-made or technological disasters (e.g., pandemics, technological failures, mass service blackouts, etc.) and hybrid threats, like cyber-attacks and sabotage of critical infrastructure. The proposals shall aim at enhancing the interoperability among practitioners in EU Member States and improve the capability of the Crisis Response Coordination bodies, to anticipate, prevent, prepare for, respond to, and recover from a variety of risks and threats.

Projects' results are expected to create new EU Space-based commercial opportunities for innovative businesses serving practitioner organisations, while contributing to at least one of the following outcomes:

- Foster the development and validation of innovative space-based capabilities to assess risks and threats, helping the prevention of crises events and the protection of essential services, such as hospitals, schools, transport, and telecommunications.

200 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

201 Galileo Open Service Navigation Message Authentication (OSNMA)

202 Galileo Emergency Warning Satellite Service (EWSS)

203 Galileo Signal Authentication Service (SAS, http://spcomnav.uab.es/docs/conferences/Terris_ION-GNSS_2024.pdf)

204 Galileo High Accuracy Service (HAS)

- Operationalize next-generation systems for monitoring and early warning, providing vital information by combining observations with models to offer increasingly accurate predictions.

- Improve the capability of crisis and security practitioners to respond in a timely and effective manner to crises; ensuring also more efficient recovery interventions.

- Develop processes, models and capabilities, which safeguard robust and reliable management of critical equipment, infrastructure, and materials.

Scope: Proposals shall be built on the exploitation of the distinguishing features of Galileo and Copernicus (including its Contributing Missions) and seeking to deliver innovative and commercial space downstream capabilities to underpin the implementation of the European Preparedness Union Strategy.

Specific focus shall be given to one or more of the following key objectives and actions of the aforementioned strategy, based on technologies and solutions that:

- **[Foresight and anticipation**:] Exploit Galileo and/or Copernicus data and services to strengthen the EU's comprehensive risks and threats assessment, contribute to and advance "crisis dashboards" for decision makers, improve capabilities aiming to establish an EU Earth Observation Governmental Service (EOGS);

- **[Resilience of vital societal functions**:] Explore the use of Galileo and/or Copernicus to manage EU stockpiling, and equip and support the Union Civil Protection Mechanism and the Climate Adaptation Plan;

- **[Population preparedness**:] Improve the link between early warning systems and derived guidelines to be developed by the Commission with Member States, based on Copernicus Emergency Management Service and/or the upcoming Galileo EWSS; Explore ways to integrate EWSS into existing national alert systems; Seek to increase awareness about risks and threats at EU, MS, and regional level.

- **[Crisis response coordination**:] Improve central and cross-sectoral crisis response coordination.

In all cases, the proposals are expected to address cybersecurity threats in the description of the solution(s).

The proposals shall seek to engage and validate such technologies with crisis and security practitioners, through the realisation of large-scale demonstration and implementation activities.

Developed applications should have a clearly defined commercial potential and should respond to user needs. The solution(s) developed is/are expected to achieve TRL 7-9 by the end of the project.

Proposals shall leverage Galileo European GNSS differentiators, such as Galileo OSNMA and/or SAS, to improve preparedness against spoofing threats to strategic sectors and applications for the EU Preparedness Union Strategy, such as transport, telecommunications or critical infrastructure.

Proposals should deliver new innovative applications, identifying and addressing existing gaps, leveraging the existing relevant sectorial regulations and policies and exploring how the solutions implemented using space data and services can address these regulations and be commercialised. Proposals should also highlight the expected impact and define a clear market uptake strategy, presenting a credible post-project pathway to operations.

The developed solutions may integrate other non-space technologies like IoT, big data, artificial intelligence and machine learning (AI/ML), smart autonomous drones, augmented/mixed reality, 5G, etc.

For proposals under this topic:

- A Business Plan should be provided as part of the proposal, to evidence the user requirements, the sustainability of the project, and opportunities for wide adoption in Europe according to standards and operational needs;
- Participation of industry, in particular SMEs and midcaps, is encouraged;

Proposals addressing Galileo PRS (Public Regulated Service) related applications are not in the scope of this action.

Proposals should seek to leverage and/or create synergies with relevant projects and activities funded under Horizon Europe Cluster 3: Civil security for society, reinforcing the cross-fertilization of research and innovation in this domain.

In this topic, the integration of the gender dimension (sex and gender analysis) in research and innovation content should be addressed only if relevant in relation to the objectives of the research effort.

5. Quantum Top-Up to InvestEU: Grand Challenge Phase 2

These activities will be implemented by the European Investment Bank (EIB) in accordance with the Quantum Top-Up Agreement to InvestEU between the Commission and the EIB:

1. The InvestEU Programme provides for a guarantee granted by the EU separately to the European Investment Bank (EIB) and to the European Investment Fund (EIF) for financing and investment operations to support the policy objectives of the Union laid down in the InvestEU Regulation.
2. In order to ensure coherent and effective support for EU policies, the InvestEU Regulation establishes a framework for Top-Up Operations to complement financing activities and reinforce the impact of EU interventions

This action introduces a dedicated Horizon Europe top-up (venture debt type of support) to InvestEU in support of Phase 2 of the Grand Challenges in the quantum technology sector. Accordingly, final recipients must also be successful applicants to the 'Phase 1' actions (resulting in the award of a Horizon Europe grant).

The objective is to accelerate the transition of advanced quantum technology solutions from prototypes to scalable, market-ready platforms. The top-up is necessary to **improve bankability of quantum technology projects**, ensuring technological maturity, financial viability, and alignment with market and end-user requirements.

This action intends to support European quantum technology start-ups and SMEs to advance solutions with clear market perspectives. Proposals should demonstrate tangible applications capable of integration into existing industrial and societal infrastructures.[205]

Submission is directly to the EIB via its venture-debt webpage and is subject to separate application and due diligence under EIB/InvestEU procedures (indicatively 3 - 4 months, depending on the project).

Proposals for financing in Phase 2 must be submitted to the EIB via its venture debt webpage (https://www.eib.org/en/products/equity/venture-debt/index). Selected entities may receive up to **EUR 30 million per project**, typically provided in two tranches of about EUR 15 million each, provided as venture debt financing by the EIB: an initial high-risk tranche under the InvestEU Thematic Innovation Product (with the Horizon Europe top-up) and may also include a subsequent lower-risk tranche under the InvestEU General Debt Product.

This initiative will reinforce Europe's technological sovereignty and strengthen its position as a global leader in quantum technologies, it will enhance the bankability of European quantum technology projects and accelerate the development of innovative solutions, by bridging the gap between research excellence and their large-scale industrial and societal deployment.

Form of Funding: Indirectly managed actions

Type of Action: Indirectly managed action

Indicative budget: EUR 100.00 million from the 2026 budget and EUR 28.00 million from the 2027 budge

[205] Operational scope and implementation (EIB-managed): Investment projects will be led by start-ups/SMEs selected by the EIB as final recipients and are expected to actively involve end-users to ensure relevance, early validation and commercialisation. To ensure alignment with concrete use-cases, applicants should work closely with at least two of the following: one lead user, one system provider, optionally a system integrator. The investment stage will focus on development up to TRL 8. For example, for Quantum sensing it should include: 1. Development and ruggedisation of Q-INS hardware meeting operational platform constraints. 2.Full-system integration and environmental testing under simulated conditions and prototype demonstration in operational environment. 3.Deployment of a complete and qualified system on platforms such as UAVs, ships, planes or underground vehicles with extensive KPI-based validation. 4.Co-design with end-users to ensure functional relevance and scalability. 5.Engagement with certification, standardisation, and potential commercial pathways. 6.Plans leveraging public-private financing for industrial scale-up. 7.Establishment of a resilient European supply chain from component manufacturing to system integration. 8.Promotion of European technological sovereignty and broader industrial adoption.

Form of Funding: Indirectly managed actions

Type of Action: Indirectly managed action

Indicative budget: EUR 100.00 million from the 2026 budget and EUR 28.00 million from the 2027 budget

Specific Grant Agreements

The following Specific Grant Agreement 'other actions' have been removed from the work programme, in view of the adoption of Council Regulation (EU) 2026/150 of 16 January 2026 amending Regulation (EU) 2021/1173 on establishing the European High Performance Computing Joint Undertaking ('EuroHPC JU'), which enlarged the mandate of the EuroHPC JU to encompass, inter alia, quantum technologies:

1. Quantum Computing – Call for the 2nd SGA for the Millenion FPA (trapped-ions)

2. Quantum Computing – Call for the 2nd SGA for the OpenSuperQPlus FPA (superconducting)

3. Quantum Computing & Simulation – Call for the 2nd SGA for the PASQuanS2 FPA

4. Quantum Communication – Call for the 2nd SGA for the QSNP FPA (QKD)

5. Quantum Testing Infrastructure – Call for the 2nd SGA for the Qu-Test FPA

6. Quantum Experimental Pilot Lines – Call for the 2nd SGA for the Qu-Pilot FPA

Budget[206] [207]

	Budget line(s)	2026 Budget (EUR million)	2027 Budget (EUR million)
Calls			
HORIZON-CL4-2026-01		318.60	
	from 01.020240	*318.60*	
HORIZON-CL4-2026-02-two-stage			98.00
	from 01.020240		*98.00*
HORIZON-CL4-2027-01			224.70
	from 01.020240		*224.70*
HORIZON-CL4-2027-02-two-stage			82.50
	from 01.020240		*82.50*
HORIZON-CL4-2027-06			33.60
	from 01.020240		*33.60*
HORIZON-CL4-2026-03		90.97	
	from 01.020240	*90.97*	
HORIZON-CL4-2027-03			68.12
	from		*68.12*

206 The budget figures given in this table are rounded to two decimal places.
The budget amounts are subject to the availability of the appropriations provided for in the general budget of the Union for 2026 and 2027.

207 The contribution from Cluster 4 for year 2026 is EUR 97.68 million for the Missions work programme part and EUR 17.97 million for the New European Bauhaus Facility work programme part.
The contribution from Cluster 4 for year 2027 is EUR 97.51 million for the Missions work programme part and EUR 17.40 million for the New European Bauhaus Facility work programme part.

	01.020240		
HORIZON-CL4-2027-07			
	from 01.020240		
HORIZON-CL4-2026-04		208.80	
	from 01.020240	*208.80*	
HORIZON-CL4-2027-04			272.00
	from 01.020240		*272.00*
HORIZON-CL4-2026-05		85.50	
	from 01.020240	*85.50*	
HORIZON-CL4-2027-05			25.00
	from 01.020240		*25.00*
Contribution from this part to call HORIZON-CL5-2026-10 under Part 8 of the work programme		15.00	
	from 01.020240	*15.00*	
Contribution from this part to call HORIZON-CL5-2027-04-Two-Stage under Part 8 of the work programme			10.00
	from 01.020240		*10.00*
Other actions			
Public procurement		30.55	7.40
	from 01.020240	*30.55*	*7.40*
Subscription action		0.05	0.05
	from 01.020240	*0.05*	*0.05*
Expert contract action		5.95	5.83

	from 01.020240	*5.95*	*5.83*
Grant awarded without a call for proposals according to Financial Regulation Article 198(e)		1.35	1.50
	from 01.020240	*1.35*	*1.50*
Grant awarded without a call for proposals according to Financial Regulation Article 198			52.00
	from 01.020240		*52.00*
Provision of technical/scientific services by the Joint Research Centre - SLA in the form of administrative agreement.		2.90	3.30
	from 01.020240	*2.90*	*3.30*
Indirectly managed action		246.10	222.40
	from 01.020240	*246.10*	*222.40*
Estimated total budget		1005.77	1106.40