



APRE

Agenzia per la Promozione
della Ricerca Europea

Il cluster 4 "Digital, Industry & Space" Obiettivi, peculiarità, bandi e scadenze

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17 Luglio 2023



Agenda

- ▣ Cluster 4 – Digital, Industry and Space
 - ▣ General Introduction
 - ▣ Highlights of the DRAFT of call 2024
 - ▣ Sources

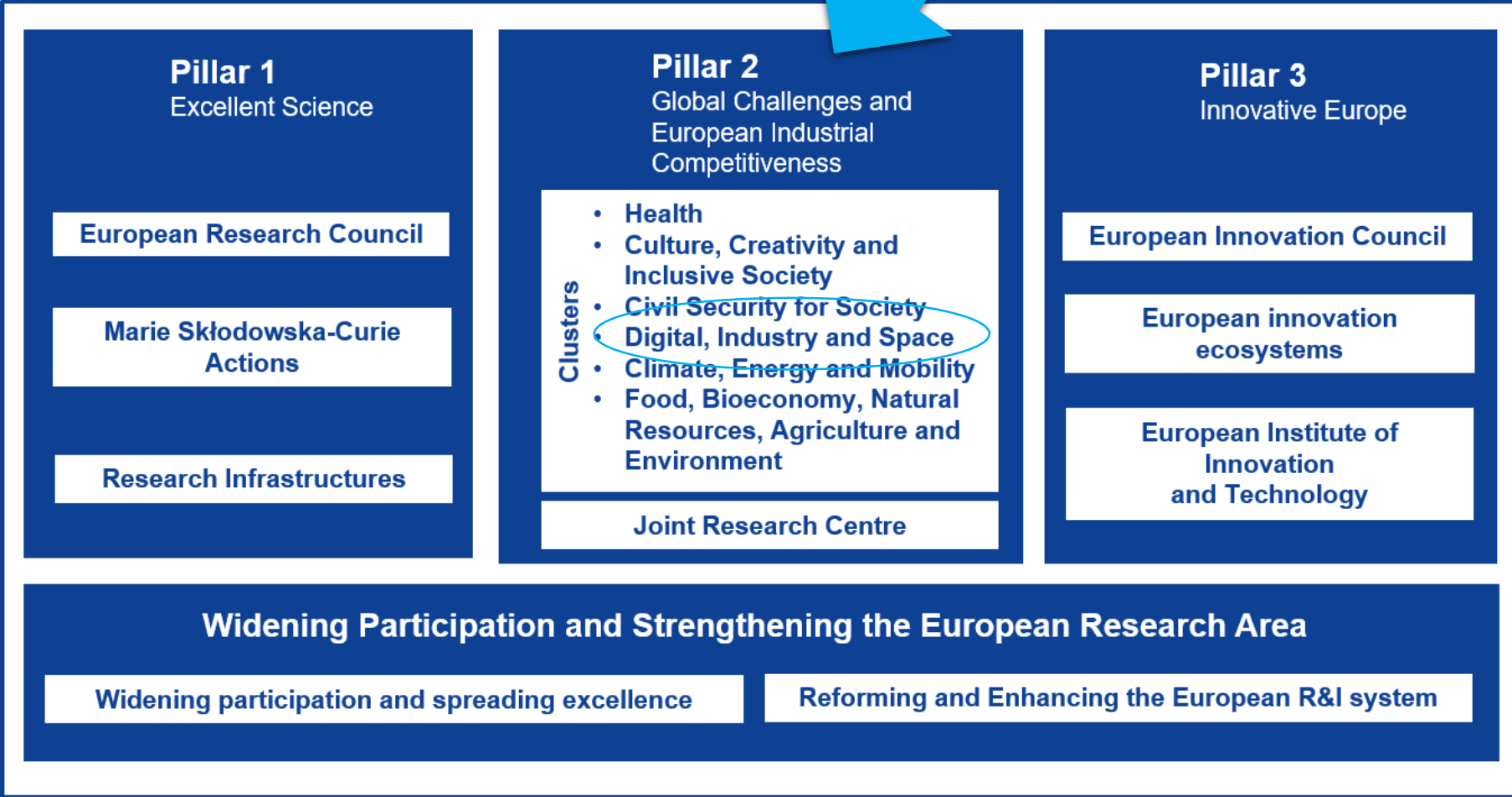


Horizon Europe





Digital, Industry and Space



Partnerships & Missions





CL4: Digital, Industry and Space - Objectives

- ↗ Global **leadership in clean and climate-neutral industrial value chains**, circular economy and climate-neutral digital systems and infrastructures (networks, data centres)
- ↗ Industrial leadership and **increased autonomy in key strategic value chains** with security of supply in raw materials
- ↗ **Sovereignty in digital technologies and in future emerging enabling technologies** by strengthening European capacities in key parts of digital and future supply chains
- ↗ Globally **attractive, secure and dynamic data-agile economy** by developing and enabling the uptake of the next-generation computing and data technologies and infrastructures (including space infrastructure and data)
- ↗ **Strategic autonomy in** conceiving, developing, deploying and using **global space-based infrastructures, services, applications and data**
- ↗ A **human-centred and ethical development** of digital and industrial technologies



CLUSTER 4 – AREAS OF INTERVENTION

2021-2027

DIGITAL

INDUSTRY

SPACE



Key Digital Technologies



AI and Robotics



NGI



Advanced Computing and Big Data



Manufacturing



Advanced materials



Circular industry



Low carbon and clean industry



A globally competitive Space sector



New services from Space

Emerging enabling technologies: Graphene, Quantum Technologies, spintronics, smart materials

What does this mean for Cluster 4? Strategic Priorities

From EU priorities to Work Programme Destinations



Cluster 4 directly supports the following three Key Strategic Orientations outlined in the Strategic Plan 2021-2024:

- Promoting an open strategic autonomy by leading the development of key digital, and enabling and emerging technologies, sectors and value chains (A)
- Making Europe the first digitally enabled, circular, climate-neutral and sustainable economy (C)
- Creating a more resilient, inclusive and democratic European society (D)



Cluster 4 - Policy Framework



Recovery plan for Europe



Cluster 4 – Work Programme 2023-24 Overview



D1 - Climate neutral, circular and digitized production
TWIN-TRANSITION

Manufacturing Industry

A New Way to Build, accelerating disruptive change in construction

Energy Intensive Process Industries

D2 - Increased autonomy in key strategic value chains for resilient industry
RESILIENCE

Raw Materials for strategic autonomy and circular economy

Safe and Sustainable by Design Chemicals and Materials

Strategic Innovation Markets Driven by Advanced Materials

Improving the resilience of EU businesses

D3 - World leading data and computing technologies
DATA

Data sharing and analytics capacity

From Cloud to Edge to IoT

D4 - Digital and emerging technologies for competitiveness and fir for the Green Deal
DIGITAL-EMERGING

Open Source for Cloud/Edge Digital Autonomy

Photonics

AI, data and robotics

Graphene

Quantum

Emerging Techs

D5 - Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data
SPACE

Competitiveness

Access to Space

Galileo, EGNOS and Copernicus, PRS and GOVSATCOM

Copernicus service

Galileo and EGNOS

SSA, GOVSATCOM, Quantum

CASSINI & Space entrepreneurship

D6 - A human-centred and ethical development of digital and industrial technologies
HUMAN

AI based on trust

Internet of Trust

Extended Reality

Accelerating uptake of tech & innovation

Industry 5.0

Standardization

Digital Humanism

Energy efficiency and climate neutral process industries
Circularity and Zero Pollution in process industry
Clean Steel

Other Actions: NGI commons; Critical Raw Materials Exploration Investment Facility; UNECE resource management system; JRC & Action Plan on Critical Raw Materials; Raw Materials events; Support to Hydrogen



Cluster 4 Destinations and connected Expected Impacts

- 1 Destination 1 (WP2023-2024) - Climate neutral, circular and digitized production**
Expected Impact 2021-24: Global leadership in clean and climate-neutral industrial value chains, circular economy and climate-neutral digital systems and infrastructures
- 2 D2 (WP23-24) - Increased autonomy in key strategic value chains for resilient industry**
Expected Impact 2021-24: Industrial leadership and increased autonomy in key strategic value chains with security of supply in raw materials
- 3 D3 (WP23-24) - World leading data and computing technologies**
Expected Impact 2021-24: Globally attractive, secure and dynamic data-agile economy
- 4 D4 (WP23-24) - Digital & emerging technologies for competitiveness and fit for the Green Deal**
Expected Impact 2021-24: Sovereignty in digital technologies and in future emerging enabling technologies
- 5 D5 (WP23-24) - Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data**
Expected Impact 2021-24: Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data
- 6 D6 (WP23-24) - A human-centred & ethical development of digital and industrial technologies**
Expected Impact 2021-24: A human-centred and ethical development of digital and industrial technologies



CLUSTER 4 | Overview Work Programme 2023 - 24

Versione WP:
published

Scadenze	
'23	28 e 29 Marzo+20 Aprile
'24	7 e 20 Feb + 19 Marzo

Topic	
'23	88
'24	42
	130

Budget	
'23	1390,23
'24	927
	2317,23



WP23-24 | OVERVIEW call 2023

Destination	CL4 components	Call	Deadline	Budget (mln €)	N° of topics
1	Industry	HORIZON-CL4-2023-TWIN-TRANSITION-01	20 Apr 2023	335	12
1	Industry	HORIZON-CL4-2023-TWIN-TRANSITION-01-TWO-STAGE	7 Mar 2023 (First Stage) 5 Oct 2023 (Second Stage)	12	1
2	Industry	HORIZON-CL4-2023-RESILIENCE-01-TWO-STAGE	07 Mar 2023 (First Stage) 05 Oct 2023 (Second Stage)	124	4
2	Industry	HORIZON-CL4-2023-RESILIENCE-01	20 Apr 2023	213,73	12
3	Digital	HORIZON-CL4-2023-DATA-01	29 Mar 2023	76	4
4	Digital	HORIZON-CL4-2023-DIGITAL-EMERGING-01	29 Mar 2023	108	5
4	Digital	HORIZON-CL4-2023-DIGITAL-EMERGING-01-CNECT	29 Mar 2023	129	9
5	Space	HORIZON-CL4-2023-SPACE-01	29 Mar 2023	137,5	14
6	Digital	HORIZON-CL4-2023-HUMAN-01	29 Mar 2023	53	12
6	Digital	HORIZON-CL4-2023-HUMAN-01-CNECT	29 Mar 2023	202	15



WP23-24 | OVERVIEW call 2024

Destinati on	CL4 components	Call	Deadline	Budget (mln €)	N° of topics
1	Industry	HORIZON-CL4-2024-TWIN-TRANSITION-01	7 Feb 2024	251	9
1	Industry	HORIZON-CL4-2024-TWIN-TRANSITION-01-TWO-STAGE	7 Feb 2024 (First Stage) 24 Set 2024 (Second Stage)	37	2
2	Industry	HORIZON-CL4-2024-RESILIENCE-01-TWO-STAGE	7 Feb 2024 (First Stage) 24 Set 2024 (Second Stage)	62	2
2	Industry	HORIZON-CL4-2024-RESILIENCE-01	7 Feb 2024	160,20	7
3	Digital	HORIZON-CL4-2024-DATA-01	19 Mar 2024	85	3
4	Digital	HORIZON-CL4-2024-DIGITAL-EMERGING-01	19 Mar 2024	136,5	5
4	Digital	HORIZON-CL4-2024-DIGITAL-EMERGING-01-CNECT	19 Mar 2024	88	6
5	Space	HORIZON-CL4-2024-SPACE-01	20 Feb 2024	46,30	4
6	Digital	HORIZON-CL4-2024-HUMAN-01	19 Mar 2024	61	4



2024 | Condizioni specifiche/criteri di eleggibilità aggiuntivi

Blind evaluation
(two-stage)

4 topics in with
FSTP

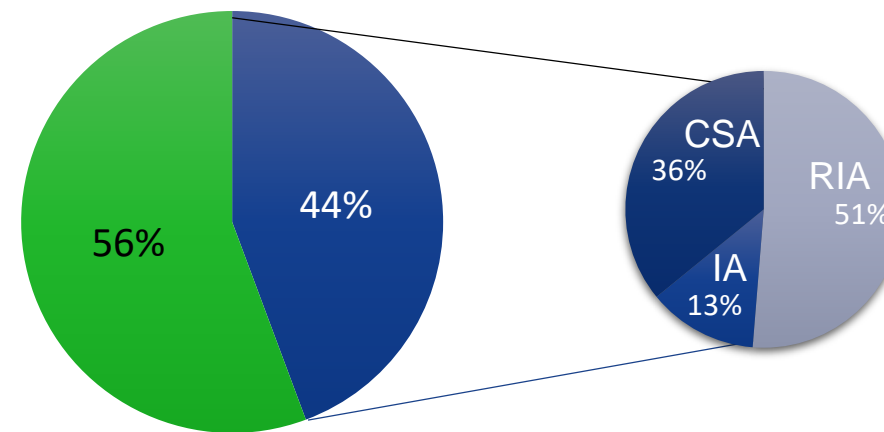
ART 22.5

- 3 topics in SPACE Destination 5

COLLABORATIONS

- International Cooperation: 3 topics
- Collaboration with JRC: 1 topics
- Collaboration with EIT: 4 topics

Lump Sum





TWO stages – Blind evaluation

(2023, solo Twin Transition e Resilience)



Blind evaluation (in 1st stage)

- There is no evidence that the current proposal evaluation system is systematically biased.
- There are understandable concerns that evaluation experts may be swayed – perhaps unconsciously – in favour of proposals from well-known organisations in countries with better performing R&I systems.
- ‘Blind’ evaluation is a way to remove any real or perceived effect of such reputational bias.
- Experts evaluate without knowing the identity of participants.
- The work programme will include an additional admissibility criterion: applicants can not be disclosed in the narrative part of the proposal.



JRC – Joint Research Center

JRC Mission: *As the science and knowledge service of the Commission our mission is to support EU policies with independent evidence throughout the whole policy cycle.*



Policy neutral: has no policy agenda of its own

More than **50** large scale research facilities
More than **110** online databases
15 Knowledge & Competence Centres

About **2 800** staff, nearly **70 %** of whom are **scientific/technical staff**

83 % of core research staff with PhDs

Over **1 100** scientific publications per year



JRC – Knowledge Centres





JRC in Cluster 4

JRC Support to Energy Intensive Technologies and Strategic

Technologies value chains:

- Transition of the energy-intensive industries
- Raw materials value chain analysis
- Raw materials ecosystems (EIGL, Foresight)

JRC Support to Safe and Sustainable by Design Chemicals

and Materials Criteria:

- To provide methodological guidance to applicant of the SSbD framework
- To evaluate the feedback received from MS and industry
- To refine and expand the current SSbD framework based on the input collected



JRC in HE – *General Annex*

- Where provided for in the **specific call conditions**, applicants may include in their proposals the possible contribution of the JRC but the JRC will not participate in the preparation and submission of the proposal.
- Applicants will indicate the contribution that the JRC could bring to the project based on the scope of the topic text
- After the evaluation process, the JRC and the consortium selected for funding may come to an agreement on the specific terms of the participation of the JRC.
- If an agreement is found, the JRC would accede to the grant agreement as beneficiary requesting zero funding and would accede to the consortium as a member



JRC in HE – *Involvement in actions*

JRC as Beneficiary [menzione nel topic]

- Requesting no contribution
- Signing the CA

JRC as a Non Beneficiary [NO menzione nel topic]

- light form of collaboration (e.g. agreement, membership in the scientific advisory board, etc.)



Cluster 4 Complementarities – European Partnerships

DID YOU KNOW?



European Partnerships are initiatives where the EU, together with private and public partners, commit to jointly support the development and implementation of a programme of research and innovation activities. The partners could represent industry, universities, research organisations, bodies with a public service remit at local, regional, national or international level or civil society organisations, including foundations and NGOs. Partnerships are not new - they were first introduced in 2002 as part of the European Research Area to overcome fragmentation of research effort.

3 Institutional partnerships (Art.187, Public-Private)

EuroHPC JU

Key Digital Technologies JU (ex ECSEL JU)

Smart Networks and Services JU (ex 5G PPP)

Next call
in 2023

7 Co-programmed partnerships

Made in Europe (ex FoF)

Process4Planet - Carbon neutral Circular Industry

Clean steel (ex SPIRE)

AI, Data and Robotics

Photonics

Globally competitive Space Systems (Proposed 2023)

1 Institutional partnership (Art. 185, Public-Public)

European Partnership on Metrology

Next call
in 2023



EU-wide collective effort					National regional and local			Financial instrument
Horizon Europe	Digital Europe	CEF	Creative Europe	Health	Cohesion	Agriculture Funds	RRF	InvestEU
Research Innovation	Strategic capacities computing, data, testbeds, etc. Advanced digital skills EU-Wide deployment	Infrastructure Broadband and 5G roll out Connecting Communities	Creative industry Media	Telemedicine eHDSI	Digital connectivity in white and grey areas Support to enterprises in line with Smart specialisation Digital skills for all citizens	Making use of Big Data for CAP monitoring Broadband rollout in rural areas	Connect Scale-up Modernise Reskill and Upskill 20% digital	Leverage private capital for investments in SMEs, research, digital, infrastructure, skills...



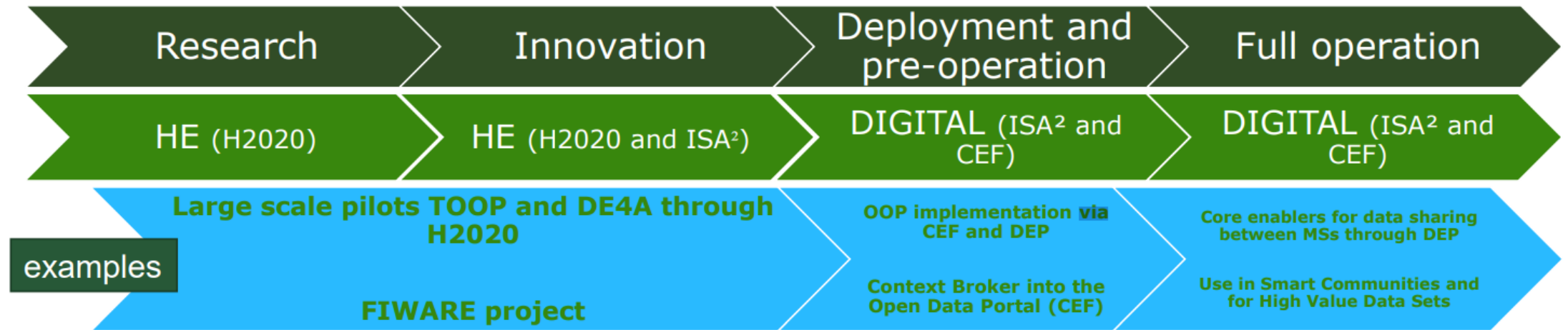


Horizon Europe

- > supports the early stages of the innovation chain
- > fund research and innovation (R&I) activities, including preliminary testing, proof of concept and pilot projects

Digital Europe

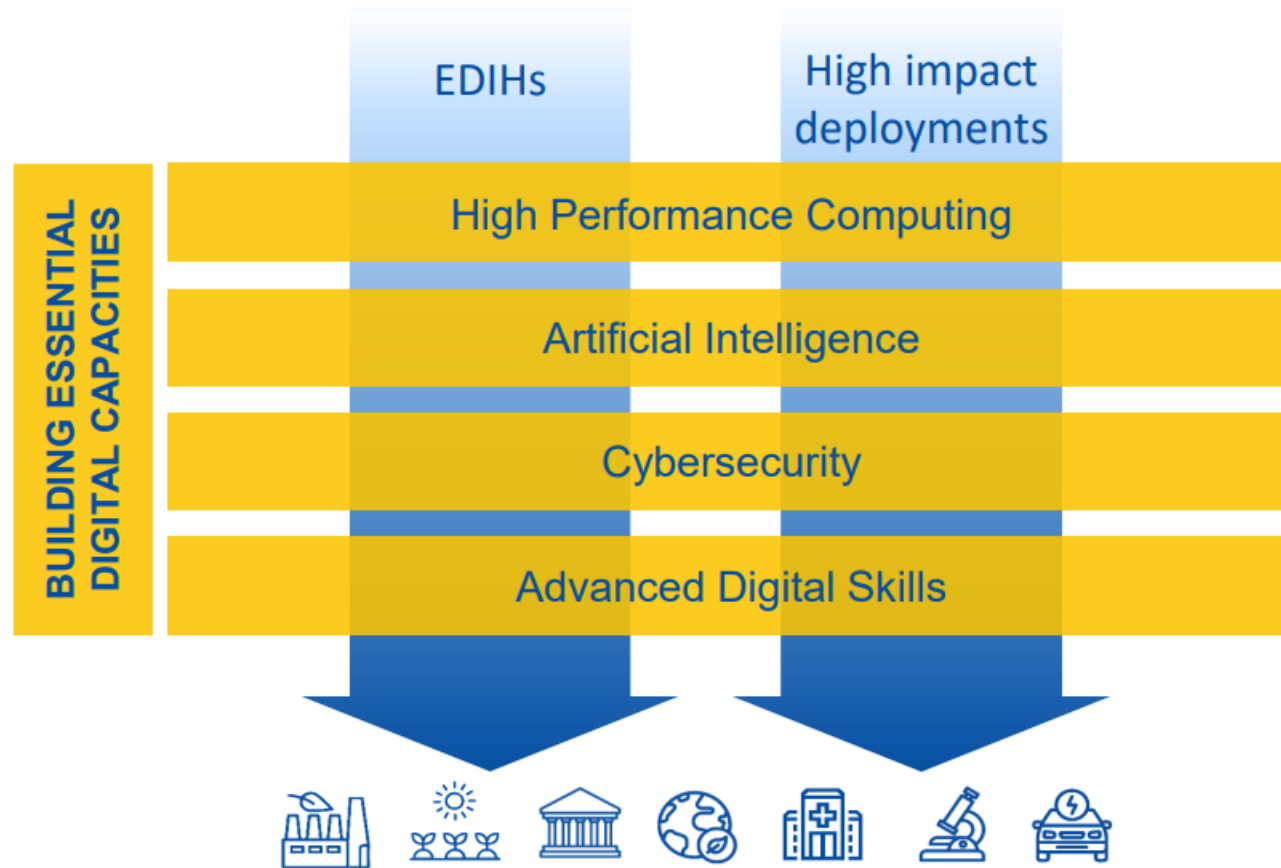
- > enables the technological deployment
- > large scale pilots in real conditions
- > take over successful research results and use them for new deployments

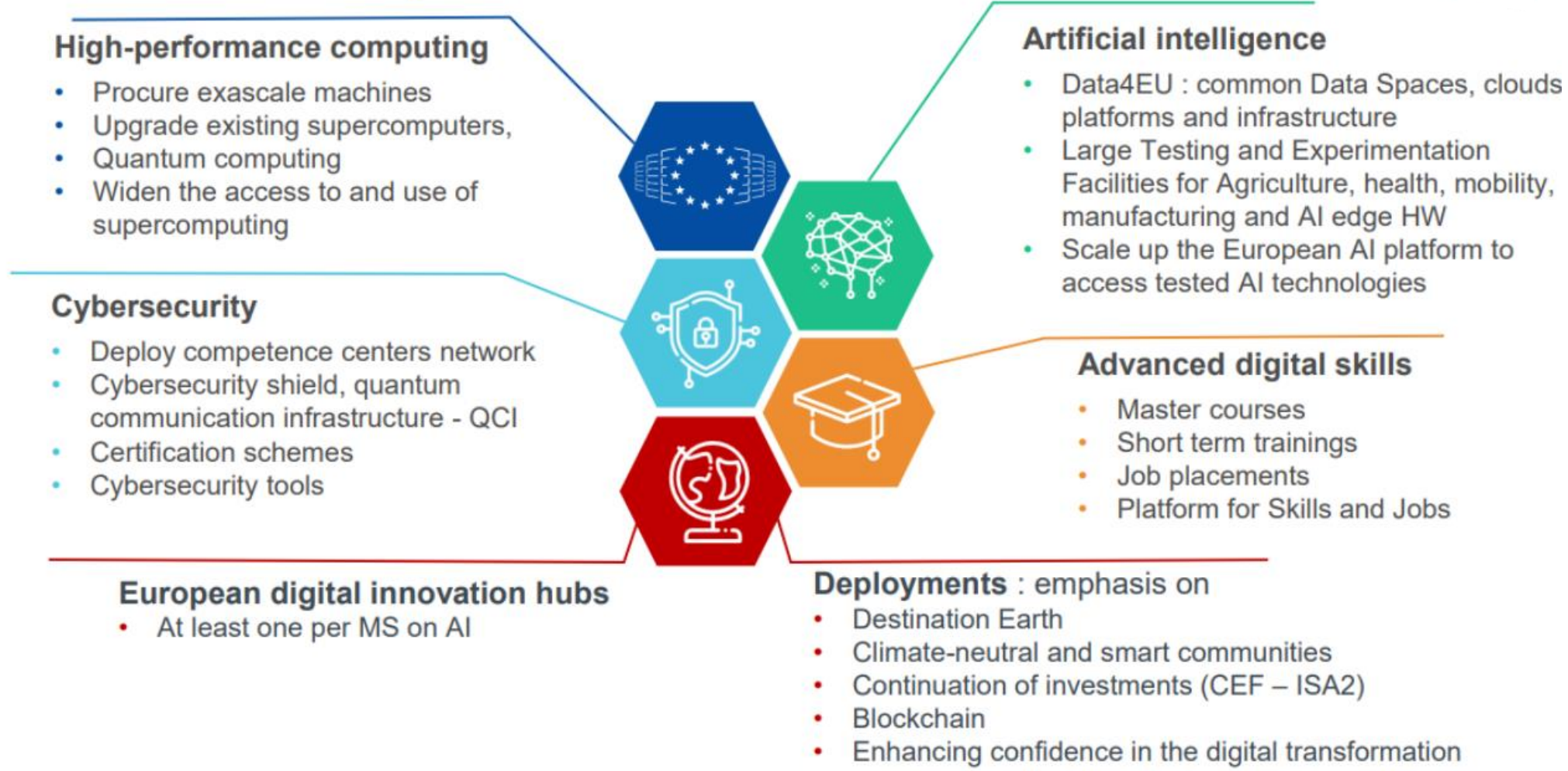


Horizon cluster 4, CEF Digital and Digital Europe programme will be managed by the same Executive Agency
→ ensure further coherence between the programmes



DIGITAL EUROPE







Cluster 4 Complementarities – Digital Europe

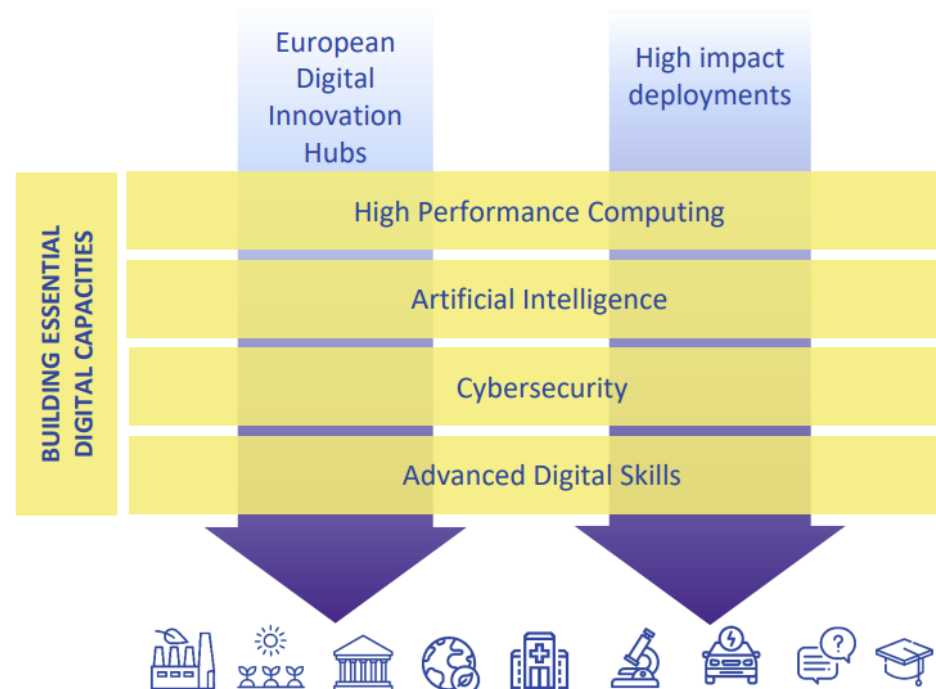
It will make use of the most recent research results, **but it will not support research**. For example, DE will support:

- The acquisition of HPC machines
- The set-up of sectorial data spaces, e.g. manufacturing
- The building or reinforcing of Testing and Experimentation Facilities
- The set up and delivery of Master courses in key advanced digital technologies

The programme has **specific restrictions to participation** of entities not in the EU or in the EEA.

Funding schemes:

- Grants with cost reimbursement 50% for everybody or with 75% for SMEs
- CSA at 100%
- Wider use of procurement





The banner features a blue background with a network of nodes and lines on the right side. At the top, there are logos for the European Commission, HNN3.0 HEALTH-NCP-NET, NFP@Health, COSMOS, IDEAL-IST, and NCP4 INDUSTRY. The main text is in white and orange. Below the main text, it says 'HYBRID EVENT' and 'Online & at the ISS - Italian National Institute of Health'. At the bottom, there is an orange bar with the text 'Local host organisations' and logos for the Ministero della Salute, APRE, ProMIS, and the Italian National Institute of Health.

European Commission | HNN3.0 HEALTH-NCP-NET | NFP@Health | COSMOS | IDEAL-IST | NCP4 INDUSTRY

Synergies across the EU funding programmes managed by the European Health and Digital Executive Agency (HaDEA)

20 JUNE 2023

HYBRID EVENT
Online & at the ISS - Italian National Institute of Health

Local host organisations

Ministero della Salute | APRE | ProMIS | ISS

<https://apre.it/evento/synergies-across-the-eu-funding-programmes-managed-by-the-european-health-and-digital-executive-agency-hadea/>



Digital Europe – Relevant Documents

European data strategy

https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-data-strategy_en

Sustainable and smart mobility strategy

https://transport.ec.europa.eu/transport-themes/mobility-strategy_en

DIGITAL Work Programme 2021-2022

[Work Programmes – DIGITAL \(web page\)](#) and [Main work programme](#).

Funding and tenders portal

[DIGITAL-2022-CLOUD-AI-03-DS-MOBILITY](#) (Deployment action – Call 3 open)

[DIGITAL-2021-CLOUD-AI-01-PREP-DS-MOB](#) (CSA – Call 1 closed)

Staff working document on data spaces

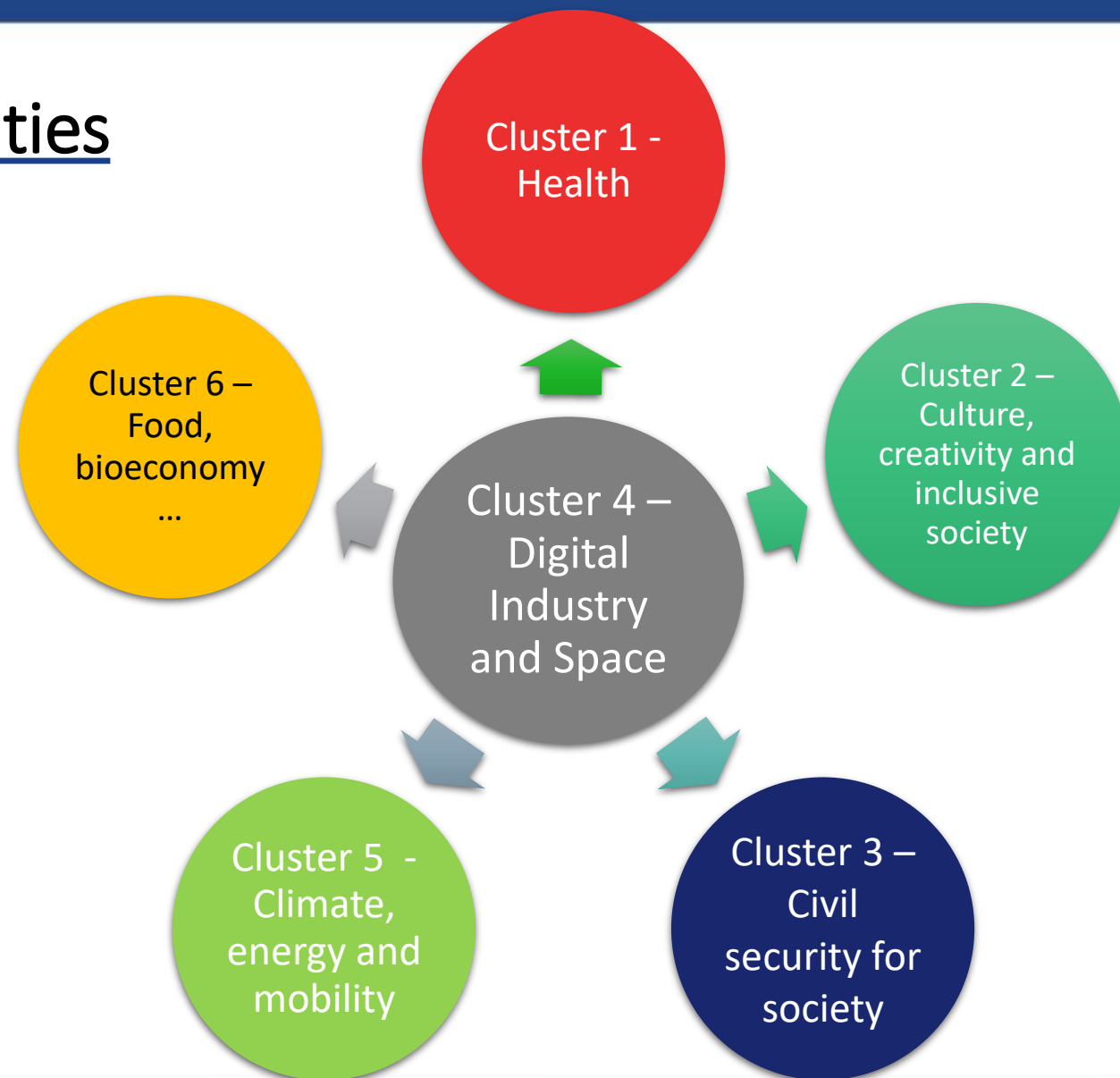
<https://digital-strategy.ec.europa.eu/en/library/staff-working-document-data-spaces>

Cross-clusters complementarities

Examples

Improving the resilience and preparedness of EU businesses, especially SMEs and Startups, and value chains in key sectors and demand-driven applications

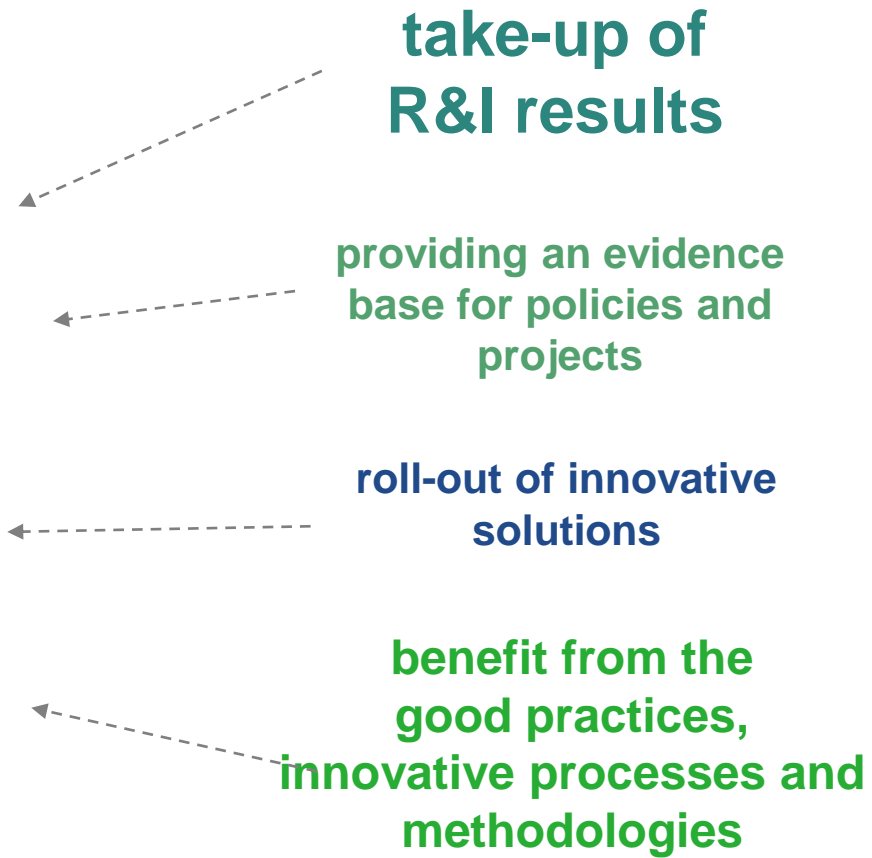
1. Circular value chains
2. Green, Sustainable and Smart Materials
3. Common European Data Spaces
4. Trustworthy AI applications
5. GNEOS, Copernicus applications





Complementarities with other EU Programmes

- 🏷 Digital Europe Programme
- 🏷 Space Programme
- 🏷 InvestEU Programme
- 🏷 Recovery and Resilience Facility (RRF)
- 🏷 Just Transition Fund (JTF)
- 🏷 European Social Fund Plus (ESF+)
- 🏷 European Regional Development Fund (ERDF)
- 🏷 European Agricultural Fund for Rural Development (EAFRD)





Policy and horizontal considerations



Open Science across the programme



Gender dimension in R&I content



Pathway to impact



Measures to maximise impact



Do no significant harm principle (DNSH)



Artificial intelligence

These aspects must normally be considered in all Horizon Europe calls (unless explicitly mentioned in the topic description).

Specific calls may include other aspects to take into account.



Policy and horizontal considerations



Trustworthy Artificial Intelligence

1.2 Methodology #@COM-RET-EN@##@COM-PL-CP@# [e.g. 14 pages]

- Describe and explain the overall methodology, including the concepts, models and assumptions that underpin your work. Explain how this will enable you to deliver your project's objectives. Refer to any important challenges you may have identified in the chosen methodology and how you intend to overcome them. [e.g. 10 pages]

⚠ This section should be presented as a narrative. The detailed tasks and work packages are described below under 'implementation'.

⚠ Where relevant, include how the project methodology complies with the 'do no significant harm' principle as per Article 17 of [Regulation \(EU\) No 2020/852](#) on the establishment of a framework to facilitate sustainable investment (i.e. the so-called 'EU Taxonomy Regulation'). This means that the methodology is designed in a way it is not significantly harming any of the six environmental objectives of the EU Taxonomy Regulation.

⚠ If you plan to use, develop and/or deploy artificial intelligence (AI) based systems and/or techniques you must demonstrate their technical robustness. AI-based systems or techniques should be, or be developed to become:

Part B - Page 7 of 23

Due diligence su qualsiasi tecnica o sistema AI su affidabilità e robustezza:

- Robusta, accurata e riproducibile, in grado di gestire e informare su possibili guasti, imprecisioni ed errori, in relazione al rischio connesso al sistema o algoritmo AI
- Che tenga conto del contesto e dell'ambiente in cui opera
- Salvaguardia dell'integrità fisica e mentale delle persone
- Capace di spiegare il proprio sistema decisionale, specialmente se ha impatto sulla vita delle persone

Tre valutatori per la due diligence

Ulteriori informazioni: <https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence>

Call: [insert call identifier] – [insert call name]

EU Grants: Application form (HE RIA and IA): V3.1 – 08.09.2022

- technically robust, accurate and reproducible, and able to deal with and inform about possible failures, inaccuracies and errors, proportionate to the assessed risk they pose*
- socially robust, in that they duly consider the context and environment in which they operate*
- reliable and function as intended, minimizing unintentional and unexpected harm, preventing unacceptable harm and safeguarding the physical and mental integrity of humans*



APPROFONDIMENTO TOPIC

Work Programme 2024

Destination 1: Climate neutral, Circular and Digitised Production: this destination will directly support the following Key Strategic Orientations (Orientamenti Strategici Chiave/Principali), as outlined in the Strategic Plan:

1. KSO C, 'Making Europe the first digitally led circular, climate-neutral and sustainable economy through the transformation of its mobility, energy, construction and production systems.'
2. KSO A, 'Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains to accelerate and steer the digital and green transitions through human-centred technologies and innovations.'
3. KSO D, 'Creating a more resilient, inclusive and democratic European society, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions.'

The focus can be, for example, on addressing demands in healthcare, automotive, maritime and aviation industries, energy generation or environmental areas.

The most relevant policies of the European Commission on this front are:

1. The [European Industrial Strategy of March 2020](#), and in particular the [Update of May 2021](#): there is now a renewed momentum in the EU to tackle its strategic dependencies as well as to boost its resilience across key strategic areas. The Covid-19 crisis revealed the importance of improving production response and preparedness of EU industry, in support of its long-term competitiveness.
2. The [Digital Decade](#) of March 2021, where the Commission presented a vision, targets and avenues for a successful digital transformation of Europe by 2030.
3. The [Circular Economy Action Plan](#) of March 2020 announced initiatives along the entire life cycle of products and aims to ensure that waste is prevented and the resources used are kept in the EU economy for as long as possible.
4. The [Fit for 55 Package of July 2021, delivering the EU's 2030 Climate Target on the way to climate neutrality](#), given the process industries' 20% share of global greenhouse gas emissions.
5. The [Zero Pollution Action Plan](#) of May 2021 addresses both pollution and waste, where research needs could be tackled and is particularly relevant to advanced materials and the process industries, as well as to the manufacturing industry.


Call - TWIN GREEN AND DIGITAL TRANSITION 01 - (2024) Opening date 19 Sept 2023 – Deadline 07 Feb 2024

Topics	Type of Action	Budgets	EU contribution per project	N°of projects	Topic features
HORIZON-CL4-2024-TWIN-TRANSITION-01-03: Manufacturing as a Service: Technologies for customised, flexible, and decentralised production on demand (Made in Europe Partnership)	RIA	35.00	5.00 to 7.00	5-7	Lump sum
HORIZON-CL4-2024-TWIN-TRANSITION-01-05: Technologies/solutions to support circularity for manufacturing (Made in Europe Partnership)	RIA	36.00	4.00 to 6.00	6-8	Int coop EIT
HORIZON-CL4-2024-TWIN-TRANSITION-01-32: Optimisation of thermal energy flows in the process industry (Processes4Planet partnership)	IA	30.00	10.00 to 15.00	2-3	
HORIZON-CL4-2024-TWIN-TRANSITION-01-34: Renewable hydrogen used as feedstock in innovative production routes (Processes4Planet Partnership)	RIA	20,00	10.00 to 15.00	2-3	
HORIZON-CL4-2024-TWIN-TRANSITION-01-35: Turning CO2 emissions from the process industry to feedstock (Processes4Planet partnership)	IA	30.00	8.00 to 10.00	3	funding rate 60%
HORIZON-CL4-2024-TWIN-TRANSITION-01-38: Hubs for circularity for industrialised urban peripheral areas (Processes4Planet partnership)	IA	40.00	15.00 to 20.00	2-4	
HORIZON-CL4-2024-TWIN-TRANSITION-01-41: Breakthroughs to improve process industry resource efficiency (Processes4Planet partnership)	RIA	30,00	10,00 to 12,00	3-5	Lump sum
HORIZON-CL4-2024-TWIN-TRANSITION-01-44: Digital transformation and ensuring a better use of industrial data, which can optimise steel supply chains (Clean Steel Partnership)	IA	10.00	3.00 to 5.00	2-3	Lump sum
HORIZON-CL4-2024-TWIN-TRANSITION-01-46: CO2-neutral steel production with hydrogen, secondary carbon carriers and electricity OR innovative steel applications for low CO2 emissions (Clean Steel Partnership)	RIA	20.00	3.00 to 5.00	4-7	



Call - TWIN GREEN AND DIGITAL TRANSITION 01 - TWO STAGE- (2024)

Opening date 19 Sept 2023

Deadline(s): 07 Feb 2024 (First Stage), 24 Sept 2024 (Second Stage)

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2024-TWIN-TRANSITION-01-01: Bio-intelligent manufacturing industries (Made in Europe Partnership)	RIA	25.00	4.00 to 5.00	5-6	Blind MANUFACTURING
HORIZON-CL4-2024-TWIN-TRANSITION-01-12: Enhanced assessment, intervention and repair of civil engineering infrastructure	RIA	12.00	5.00 to 6.00	2-3	Blind Lump Sum NEB

A New Way to Build, accelerating disruptive change in construction

- [Link: New European Bauhaus: beautiful, sustainable, together. \(europa.eu\)](https://europa.eu)

The New European Bauhaus initiative calls on all of us to imagine and build together a sustainable and inclusive future that is beautiful for our eyes, minds, and souls.

Beautiful are the places, practices, and experiences that are:

- **Enriching**, inspired by art and culture, responding to needs beyond functionality.
- **Sustainable**, in harmony with nature, the environment, and our planet.
- **Inclusive**, encouraging a dialogue across cultures, disciplines, genders and ages.



Destination 2: Increased Autonomy in Key Strategic Value Chains for Resilient Industry

▣ This destination will directly support the following Key Strategic Orientations, as outlined in the Strategic Plan:

1. KSO C, ‘**Making Europe the first digitally-enabled circular, climate-neutral and sustainable economy** through the transformation of its mobility, energy, construction and production systems’
2. KSO A, ‘**Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains** to accelerate and steer the digital and green transitions through human-centred technologies and innovations’
3. KSO D, ‘**Creating a more resilient, inclusive and democratic European society**, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions.

Proposals for topics under this Destination should set out a credible pathway to contributing to the following expected impact of Cluster 4:

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

The COVID-19, the war against Ukraine and other crises have shown that global competitiveness and resilience are two sides of the same coin. Whilst Cluster 4 addresses KSOs A, C and D, KSO B is becoming increasingly important, given the role of the industry highlighted in the zero-pollution action plan.



Destination 2: Increased Autonomy in Key Strategic Value Chains for Resilient Industry

▮ The most relevant policies of the European Commission on this front are:

1. The [European Industrial Strategy of March 2020](#), and in particular the [Update of May 2021](#): there is now a renewed momentum in the EU to tackle its strategic dependencies as well as to boost its resilience across key strategic areas. The Covid-19 crisis revealed the importance of improving production response and preparedness of EU industry, in support of its long-term competitiveness. The Industrial Strategy Update and the accompanying Staff Working Document on strategic dependencies, showed that 99 products in the most sensitive ecosystems included materials on the list of critical raw materials.
2. The [Circular Economy Action Plan](#) of March 2020 announced initiatives along the entire life cycle of products. It targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and resources used are kept in the EU economy for as long as possible.
3. The [Chemicals Strategy](#) for Sustainability of October 2020 strategy aims to better protect citizens and the environment whilst boosting the innovation for safe and sustainable chemicals. It calls for actions in the frame of research and innovation to develop a Safe and Sustainable by Design (SSdB) framework and criteria and a Strategic Research and Innovation Agenda addressing research and innovation needs raised in the Strategy and beyond..



Destination 2: Increased Autonomy in Key Strategic Value Chains for Resilient Industry

- ☒ The most relevant policies of the European Commission on this front are:
 1. The [Zero Pollution Action Plan](#) of May 2021 set's out the objective that by 2050 air, water and soil pollution shall be reduced to levels no longer considered harmful to health and natural ecosystems, that respect the boundaries of the planet. The action plan aims to strengthen the EU green, digital and economic leadership, whilst creating a healthier, socially fairer Europe and planet. It provides a compass to mainstream pollution prevention in all relevant EU policies, to step up implementation of the relevant EU legislation and to identify possible gaps.
 2. The [Materials 2030 Manifesto](#) will enable the green and digital transition, anchoring on good design principles, combined with synergies between advanced materials, circularity, digital and industrial technologies. It calls for the evolution of materials research by uniting digital and material capacities and competences, combining technology push with market pull and united actions at Member States level, to benefit from Europe's strength.
 3. The [Digital Decade](#) of March 2021, where the Commission presented a vision, targets and avenues for a successful digital transformation of Europe by 2030.
 4. The [Fit for 55 Package of July 2021, delivering the EU's 2030 Climate Target on the way to climate neutrality](#), given the process industries' 20% share of global greenhouse gas emissions.
- ☒ **Business cases and exploitation strategies for industrialisation:** This section applies only to those topics in this Destination, for which proposals should demonstrate the expected impact by including a *business case and exploitation strategy for industrialisation*.



Call - HORIZON-CL4-2024-RESILIENCE-01-TWO-STAGE - (2024)

Opening date 19 Sept 2023

Deadline(s): 07 Feb 2024 (First Stage), 24 Sept 2024 (Second Stage)

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2024-RESILIENCE-01-35: Biodegradable polymers for sustainable packaging materials	IA	31.00	6.00 to 8.00	4-5	BLIND EVALUATION
HORIZON-CL4-2024-RESILIENCE-01-36: Advanced biomaterials for the Health Care	RIA	31.00	6.00 to 8.00	4-5	Lump sum BLIND EVALUATION

Strategic innovation markets driven by advanced materials


Call - HORIZON-CL4-2023-RESILIENCE-01 Opening date 19 Sept 2023 – Deadline 07 Feb 2024

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2024-RESILIENCE-01-01: Exploration of critical raw materials in deep land deposits	RIA	20.00	Around 5.00	5	
HORIZON-CL4-2024-RESILIENCE-01-04: Technologies for processing and refining of critical raw materials	IA	22.00	Around 7.30	3	
HORIZON-CL4-2024-RESILIENCE-01-08: Rare Earth and magnets innovation hubs	IA	32.00	Around 16.00	2	
HORIZON-CL4-2024-RESILIENCE-01-10: Addressing due diligence requirements in raw materials supply chains.	CSA	2.20	Around 2.20	1	Lump sum
HORIZON-CL4-2024-RESILIENCE-01-11: Technologies for extraction and processing of critical raw materials	CSA	15.00	Around 7.50	2	Lump sum Int coop
HORIZON-CL4-2024-RESILIENCE-01-24: Development of safe and sustainable by design alternatives	IA	59.00	Around 12,00-15,00	4-6	
HORIZON-CL4-2024-RESILIENCE-01-41: 'Innovate to transform' support for SME's sustainability transition	CSA	10.00	Around 5.00	2	Lump sum

Raw Materials for EU open strategic autonomy and successful transition to a climate-neutral and circular economy



Destination 3: World-leading Data and Computing Technologies

This destination will directly support the following Key Strategic Orientations, as outlined in the Strategic Plan:

1. **KSO A, ‘Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains** to accelerate and steer the digital and green transitions through human-centred technologies and innovations.’
2. **KSO C, ‘Making Europe the first digitally led circular, climate-neutral and sustainable economy** through the transformation of its mobility, energy, construction and production systems

Proposals for topics under this Destination should set out a credible pathway to contributing to the following expected impact of Cluster 4 as set out in Horizon Europe Strategic Plan:

Globally attractive, secure and dynamic data-agile economy, by developing and enabling the uptake of the next-generation computing and data technologies and infrastructures (including space infrastructure and data), enabling the European single market for data with the corresponding data spaces and a trustworthy artificial intelligence ecosystem.

As data becomes the new fuel of the economy and a key asset to address our societal challenges, the EU cannot afford to have the data of its businesses, public sector and citizens stored and exploited largely outside its borders. This is affecting not only our economic performance but also our security, safety and sovereignty.



Call - HORIZON-CL4-2023-DATA-01 Opening: 15 Nov 2023 - Deadline(s): 19 Mar 2024

Topics	Type of Action	Budgets	EU contribution per project	N°projects	Topic features
HORIZON-CL4-2024-DATA-01-01: AI-driven data operations and compliance technologies (AI, data and robotics partnership)	IA	38.00	8.00-10,00	4-5	funding rate 60% Data sharing and analytics capa
HORIZON-CL4-2024-DATA-01-03: Piloting emerging Smart IoT Platforms and decentralized intelligence	IA	45.00	Around 20.00-25.00	2-3	FSTP From Cloud to Edge to IoT for European Data



Destination 4: Digital & Emerging Technologies for Competitiveness and Fit for the Green Deal

▣ This destination will directly support the following Key Strategic Orientations, as outlined in the Strategic Plan:

1. KSO A, ‘**Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains** to accelerate and steer the digital and green transitions through human-centred technologies and innovations.’
2. KSO C, ‘**Making Europe the first digitally led circular, climate-neutral and sustainable economy** through the transformation of its mobility, energy, construction and production systems

Proposals for topics under this Destination should set out a credible pathway to contributing to the following expected impact:

1. **Open strategic autonomy in digital technologies and in future emerging enabling technologies**, by strengthening European capacities in key parts of digital and future supply chains, allowing agile responses to urgent needs, and by investing in early discovery and industrial uptake of new technologies.



Destination 4: Digital & Emerging Technologies for Competitiveness and Fit for the Green Deal

Destination is structured into the following headings and main Topics, which group topics together with similar outcomes to address a common challenge:

1. European Innovation Leadership in Photonics
2. AI, Data and Robotics
3. Open Source for Cloud/Edge and Software Engineering Fundamentals to support Digital Autonomy
4. European leadership in Emerging and Enabling Technologies
5. Flagship on Quantum Technologies: a Paradigm Shift
6. Graphene: Europe in the lead



Call - HORIZON-CL4-2024-DIGITAL-EMERGING-01 Opening: 15 Nov 2023 - Deadline(s): 19 Mar 2024

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2024-DIGITAL-EMERGING-01-03: Novel paradigms and approaches, towards AI-powered robots– step change in functionality (AI, data and robotics partnership)	RIA	30.00	Around 8.00	4	AI, Data and Robotics
HORIZON-CL4-2024-DIGITAL-EMERGING-01-04: Industrial leadership in AI, Data and Robotics boosting competitiveness and the green transition (AI Data and Robotics Partnership)	IA	60.00	Around 10.00	6	FSTP
HORIZON-CL4-2024-DIGITAL-EMERGING-01-22: Fundamentals of Software Engineering	RIA	13.50	4.00 to 6.00	2-3	Lump sum Open Source for Cloud/Edge and Software Engineering Fundamentals to support Digital Autonomy
HORIZON-CL4-2024-DIGITAL-EMERGING-01-54: Smart photonics for joint communication & sensing and access everywhere (Photonics Partnership)	RIA	18.00	3.00 to 5.00	4-6	European Innovation Leadership in Photonics
HORIZON-CL4-2024-DIGITAL-EMERGING-01-55: Photonics Innovation Factory for Europe (Photonics Partnership)	IA	15.00	15.00	1	European Innovation Leadership in Photonics


Call - HORIZON-CL4-2024-DIGITAL-EMERGING-01-CNECT Opening: 15 Nov 2023 - Deadline(s): 19 Mar 2024

Topics	Type of Action	Budgets	EU contribution per project	N°of projects	Topic features
HORIZON-CL4-2024-DIGITAL-EMERGING-01-21: Open Source for Cloud/Edge to support European Digital Autonomy	RIA	20.00	4.00 to 6.00	3-5	Open Source for Cloud/Edge and Software Engineering Fundamentals to support Digital Autonomy
HORIZON-CL4-2024-DIGITAL-EMERGING-01-23: Public recognition scheme for Open Source	CSA	2.00	Around 2.00	1	
HORIZON-CL4-2024-DIGITAL-EMERGING-01-31: Pilot line(s) for 2D materials-based devices	RIA	33.00	Around 33.00	1	Graphene and 2D materials: Europe in the lead
HORIZON-CL4-2024-DIGITAL-EMERGING-01-34: Synergy with national and regional initiatives in Europe	CSA	3.00	Around 3.00	1	
HORIZON-CL4-2024-DIGITAL-EMERGING-01-42: Stimulating transnational research and development of next generation quantum technologies, including basic theories and components	RIA	15.00	Around 15.00	1	FSTP Limited
HORIZON-CL4-2024-DIGITAL-EMERGING-01-45: Quantum sensing and metrology for market uptake	IA	15.00	4.00 to 5.00	3-4	Limited

Flagship on Quantum Technologies: a Paradigm Shift


Call - HORIZON-CL4-2023-DIGITAL-EMERGING-01-CNECT Opening: 1 Dec 2022 - Deadline(s): 29 Mar 2023

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2023-DIGITAL-EMERGING-01-40 Quantum Photonic Integrated Circuit technologies	RIA	12.00	4.00 to 6.00	2	EU-r Lump sum
HORIZON-CL4-2023-DIGITAL-EMERGING-01-41 Investing in alternative quantum computation and simulation platform technologies	RIA	20.00	7.00 to 12.00	2	EU-r
HORIZON-CL4-2023-DIGITAL-EMERGING-01-43 Framework Partnership Agreement for developing large-scale quantum Computing platform technologies	FPA	0	0	0	EU-r
HORIZON-CL4-2023-DIGITAL-EMERGING-01-50 Next generation quantum sensing and metrology technologies	RIA	10.00	2.00 to 3.00	3	Flagship on Quantum Technologies: a Paradigm Shift
HORIZON-CL4-2023-DIGITAL-EMERGING-01-56 Photonic Strategies and Skills Development (CSA) (Photonics Partnership)	CSA	4,00	1,00 to 3,00	2	European Innovation Leadership in Photonics
Overall budget		129.00			



Destination 5: Open Strategic Autonomy in Developing, Deploying and Using Global Space-Based Infrastructures, Services, Applications and Data

▣ This destination will directly support the following Key Strategic Orientations, as outlined in the Strategic Plan:

1. KSO A, '**Promoting an open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains** to accelerate and steer the digital and green transitions through human-centred technologies and innovations.'
2. KSO B, '**Restoring Europe's ecosystems and biodiversity, and managing sustainably natural resources** to ensure food security and a clean and healthy environment.'
3. KSO C, '**Making Europe the first digitally led circular, climate-neutral and sustainable economy** through the transformation of its mobility, energy, construction and production systems.'
4. KSO D, '**Creating a more resilient, inclusive and democratic European society**, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions.'



Destination 5: Open Strategic Autonomy in Developing, Deploying and Using Global Space-Based Infrastructures, Services, Applications and Data

Open strategic autonomy in developing, deploying and using global space-based infrastructures, services applications and data, including by reinforcing European independent capacity to access space, securing the autonomy of supply for critical technologies and equipment, and fostering the EU's space sector competitiveness.

This Destination is therefore structured along the following headings:

- ▣ 1. Foster competitiveness of space systems
- ▣ 2. Reinforce EU capacity to access to space
- ▣ 3. Evolution of services: Copernicus
- ▣ 4. Development of applications for Galileo, EGNOS and Copernicus and PRS and GOVSATCOM user activities
- ▣ 5. Innovative space capabilities: SSA, GOVSATCOM, Quantum
- ▣ 6. Targeted and strategic actions supporting the EU space sector

In addition, Other Actions related to this Destination cover:

1. the evolution of Sspace and ground infrastructures for Galileo/EGNOS;
2. actions preparing for the Secure Connectivity initiative proposed by the Commission in February 2022;
3. specific activities related to Space entrepreneurship ecosystems (incl. New Space and start-ups);
4. In-Orbit Demonstration and In-Orbit Validation.


Call - HORIZON-CL4-2024-SPACE-01 Opening: 21 Nov 2023 - Deadline(s): 20 Feb 2024

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2024-SPACE-01-35: Copernicus for Land and Water	RIA	4,00	1.00 to 2.50	5	Lump sum
HORIZON-CL4-2023-SPACE-01-12 Future Space Ecosystem and Enabling Technologies	RIA	15.00	0.50 to 2.50	7	Lump sum
HORIZON-CL4-2023-SPACE-01-13 Future Space Ecosystem: Management and Coordination Activity	CSA	2.00	Around 2.00	1	Lump sum
HORIZON-CL4-2023-SPACE-01-21 Low cost high thrust propulsion for European strategic space launchers - technologies maturation including ground system tests	RIA	20.00	Around 20.00	1	EU-r
HORIZON-CL4-2023-SPACE-01-22 New space transportation solutions and services	RIA	23.10	4.00 to 10.00	4	EU-r
HORIZON-CL4-2023-SPACE-01-23 Modern, flexible and efficient European test, production and launch facilities	RIA	10.00	2.00 to 5.00	3	EU-r

Foster competitiveness of space systems

Reinforce EU capacity to access to space


Call - HORIZON-CL4-2023-SPACE-01 Opening: 22 Dec 2022 - Deadline(s): 28 Mar 2023

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2023-SPACE-01-31 Copernicus for Atmosphere and Climate Change, including CO2	RIA	8.60	2.00 to 3.00	3	Lump sum
HORIZON-CL4-2023-SPACE-01-32 Copernicus for Emergency Management	RIA	3.00	Around 3.00	1	JRC Lump sum
HORIZON-CL4-2023-SPACE-01-33 Copernicus in-situ component	RIA	2.00	Around 2.00	1	Lump sum
HORIZON-CL4-2023-SPACE-01-34 Copernicus for Marine Environment Monitoring	RIA	5.00	Around 5.00	1	Lump sum
HORIZON-CL4-2023-SPACE-01-62 Quantum Communication Technologies for space systems	RIA	5.00	2.00 to 2.50	2	EU-r Lump sum
HORIZON-CL4-2023-SPACE-01-63 Quantum Space Gravimetry Phase-A Study	RIA	3.00	1.00 to 1.50	2	EU-r Lump sum
HORIZON-CL4-2023-SPACE-01-71	RIA	10.70	1.00 to 1.50	8	Int coop
HORIZON-CL4-2023-SPACE-01-72	RIA	20.00	2.00 to 3.00	7	EU-r Lump sum
Overall indicative budget		137.50			Targeted and strategic actions supporting the EU space sector

Evolution of services: Copernicus

Innovative space capabilities: SSA, GOVSATCOM, Q


Call - HORIZON-CL4-2023-SPACE-01 Opening: 22 Dec 2022 - Deadline(s): 28 Mar 2023

Topics	Type of Action	Budgets	EU contribution per project	N°of projects	Topic features
HORIZON-CL4-2023-SPACE-01-71 Scientific exploitation of space data	RIA	10.70	1.00 to 1.50	8	
HORIZON-CL4-2023-SPACE-01-72 Space technologies for European non-dependence and competitiveness	RIA	20.00	2.00 to 3.00	7	
Overall indicative budget		137.50			Targeted and strategic actions supporting the EU space sector



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

This destination will directly support the following Key Strategic Orientations, as outlined in the Strategic Plan:

1. **KSO D, Creating a more resilient, inclusive and democratic European society**, prepared and responsive to threats and disasters, addressing inequalities and providing high-quality health care, and empowering all citizens to act in the green and digital transitions

Proposals for topics under this Destination should set out a credible pathway contributing to the following expected impact:

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

*The rapid adoption of new technologies offers an immense potential for improved standards of living, safer mobility, **better healthcare**, new jobs, or the personalisation of public services. At the same time, it presents risks such as skills mismatches, digital divides, customer lock-in, or serious breaches of security or privacy*


Call - HORIZON-CL4-2023-HUMAN-01 Opening: 1 Dec 2022 - Deadline(s): 29 Mar 2023

Topics	Type of Action	Budgets	EU contribution per project	N°of projects	Topic features
HORIZON-CL4-2023-HUMAN-01-31 Toolbox for efficient IP licensing for market uptake and societal value creation	CSA	2.00	Around 2.00	1	Lump sum
HORIZON-CL4-2023-HUMAN-01-32 Piloting communities of expert facilitators to improve industry-academia-public sector co-creation	CSA	2.00	Around 2.00	1	EIT Lump sum
HORIZON-CL4-2023-HUMAN-01-33 Fostering knowledge valorisation through societal and cultural interactions	CSA	5.00	Around 1.00	5	Lump sum
HORIZON-CL4-2023-HUMAN-01-51 Pilots for an innovative human-centric industry	RIA	10.00	Around 10.00	1	EIT
HORIZON-CL4-2023-HUMAN-01-52 Drivers and success factors for progress towards Industry 5.0	RIA	4.00	Around 4.00	1	EIT
HORIZON-CL4-2023-HUMAN-01-53 Localised and Urban Manufacturing, supporting creativity and the New European Bauhaus	RIA	10.00	1.50 to 2.50	4	FSTP NEB

Systemic approaches for accelerating uptake of technology and in

Research and Innovation for Industri
5.0


Call - HORIZON-CL4-2023-Human-01 Opening: 01 Dec 2022 - Deadline(s): 29 Mar 2023

Topics	Type of Action	Budgets	EU contribution per project	N°of projects	Topic features
HORIZON-CL4-2023-HUMAN-01-62 Boosting industrial symbiosis by standardisation	CSA	2.00	Around 2.00	1	Lump sum
HORIZON-CL4-2023-HUMAN-01-63 Provide for a strong and sustainable pool of experts for European Standardisation: attract the students of university/HEI	CSA	3.00	2.50 to 3.00	1	Int coop Lump sum
HORIZON-CL4-2023-HUMAN-01-64 Pre-normative research and standardisation in industrial ecosystems	CSA	8.00	0.50 to 1.00	8	Int coop Lump sum European standards for industrial competitiveness
HORIZON-CL4-2023-HUMAN-01-91 International Hub for Digital Partnerships in the Indo-Pacific	CSA	3.00	Around 3.00	1	
HORIZON-CL4-2023-HUMAN-01-92 R&I cooperation with Sub-Saharan Africa	CSA	2.00	Around 2.00	1	
HORIZON-CL4-2023-HUMAN-01-93 R&I cooperation with Latin America	CSA	2.00	Around 2.00	1	International Cooperation
Overall indicative budget		53			


Call - HORIZON-CL4-2023-HUMAN-01-CNECT Opening: 1 Dec 2022 - Deadline(s): 29 Mar 2023

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2023-HUMAN-01-01 Efficient trustworthy AI - making the best of data (AI, Data and Robotics Partnership)	RIA	35.00	7.00 to 9.00	5	Int coop
HORIZON-CL4-2023-HUMAN-01-02 Large Scale pilots on trustworthy AI data and robotics addressing key societal challenges (AI Data and Robotics Partnership)	IA	24.00	Around 8.00	3	
HORIZON-CL4-2023-HUMAN-01-03 Natural Language Understanding and Interaction in Advanced Language Technologies (AI Data and Robotics Partnership)	RIA	20.00	6.00 to 8.00	3	
HORIZON-CL4-2023-HUMAN-01-04 Open innovation: Addressing Grand challenges in AI (AI Data and Robotics Partnership)	CSA	4.00	Around 4.00	1	FSTP
HORIZON-CL4-2023-HUMAN-01-05 Through AI from Disinformation to Trust	IA	10.00	Around 5.00	2	Lump sum

Leadership in AI based on trust



Call - HORIZON-CL4-2023-HUMAN-01-CNECT Opening: 1 Dec 2022 - Deadline(s): 29 Mar 2023

Topics	Type of Action	Budgets	EU contribution per project	N° projects	Topic features
HORIZON-CL4-2023-HUMAN-01-11 Next Generation Internet Fund	RIA	27.00	Around 27.00	1	
HORIZON-CL4-2023-HUMAN-01-12 Pilots for the Next Generation Internet	IA	14.00	3.00 to 5.00	5	
HORIZON-CL4-2023-HUMAN-01-13 Next Generation Internet International Collaboration - USA	RIA	4.00	Around 4.00	1	
HORIZON-CL4-2023-HUMAN-01-14 Next Generation Internet Commons Policy	CSA	2.00	Around 2.00	1	

An Internet of Trust


Call - HORIZON-CL4-2023-HUMAN-01-CNECT Opening: 1 Dec 2022 - Deadline(s): 29 Mar 2023

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2023-HUMAN-01-21 Next Generation eXtended Reality	RIA	26.00	5.00 to 8.00	4	
HORIZON-CL4-2023-HUMAN-01-22 eXtended Reality for Industry 5.0	IA	25.00	5.00 to 8.00	4	
HORIZON-CL4-2023-HUMAN-01-23 Supporting the emergence of an open human-centric Metaverse	CSA	2,00	Around 2.00	1	Int coop eXtended Reality
HORIZON-CL4-2023-HUMAN-01-65 Support facility for digital standardisation and international cooperation in digital partnerships	CSA	1.50	Around 1.50	1	Lump sum
HORIZON-CL4-2023-HUMAN-01-66 Promoting EU standards globally	CSA	3.00	Around 3.00	1	FSTP Lump sum European standards for indus competitiveness



Call - HORIZON-CL4-2023-HUMAN-01-CNECT Opening: 1 Dec 2022 - Deadline(s): 29 Mar 2023

Topics	Type of Action	Budgets	EU contribution per project	N°of projects	Topic features
HORIZON-CL4-2023-HUMAN-01-81 Digital Humanism - Putting people at the centre of the digital transformation	CSA	1.50	Around 1.50	1	Lump sum
HORIZON-CL4-2023-HUMAN-01-82 Art-driven digital innovation: Towards human compatible and ecologically conscious technology	CSA	3.00	Around 3.00	1	FSTP Lump sum NEB
Overall budget		202.00			Digital Humanism and human compatible technologies



Prossimi eventi Cluster 4

- 🏠 Infodays «Digital, Industry and Space dal 12 al 14 Dicembre
- 🏠 Brokerage Events:
 - Industry, 14 Dicembre
 - Digital, 15-16 Dicembre
 - Space, settimana 5-10 Dicembre
- 🏠 SpaceWeek 22 , 9-10 Novembre a Roma
- 🏠 EU Brokerage event dedicato alle Key Enabling Technologies 10 Novembre (Strasburgo – on site)
- 🏠 Euronanoforum 11-13 Giugno a Malmoe, Svezia
- 🏠 IndTech 2024 in Danimarca



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Impact Canvas

Partner Search

Pre-proposal Check

Toolbox

Topic Tree

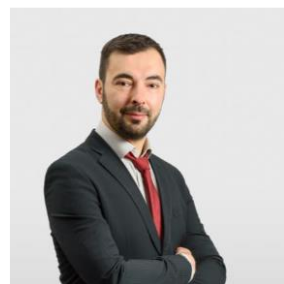
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References

- ↗ Horizon Europe: https://ec.europa.eu/info/horizon-europe_en
- ↗ European partnerships in Horizon Europe: https://ec.europa.eu/info/horizon-europe/european-partnerships-horizon-europe_en
- ↗ **Cluster 4 Work Programme:** [OPPORTUNITA' - CLUSTER 4: DIGITAL - INDUSTRY - SPACE](#)
- ↗ Funding and Tender Portal: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>
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General Annexes - Horizon Europe Work Programme 2021-2022

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Horizon Europe Standard Evaluation Form (RIA, IA)

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Horizon Europe General Model Grant Agreement (RIA, IA)

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