APRE

Agenzia per la Promozione della Ricerca Europea

La visione nazionale e la presenza italiana nel Cluster 4 Digital, Industry and Space

Fosca Giannotti,

Rappresentante nazionale nel Comitato di Programma di Horizon Europe Cluster 4 “Digital,

Industry and Space” - Scuola Normale di Pisa, associato ISTI-CNR

CLUSTER 4 DIGITAL, INDUSTRY and SPACE

Overview della partecipazione italiana 2021/2022

APRE

GLOSSARIO

Tasso di successo = viene calcolato in percentuale come rapporto tra le proposte valutate positivamente e quelle presentate. Il tasso di successo viene calcolato a livello di singolo paese o nel complesso della call.

Rientro nazionale o ritorno= viene calcolato in percentuale come rapporto tra quanto ottiene un paese e quanto è stato assegnato sull'intero programma/bando/call.

 # Partecipazioni o numerosità = numerosità delle singole partecipazioni al bando (coordinatori + partner). SI calcola sui singoli proponenti e non sulle proposte.

€ Requested EU contribution = contributo finanziario richiesto in fase di proposta dal singolo proponente.

Mainlist = proposte ammesse a grant preparation.

IT-CALL 2021 + 2022 | OVERVIEW

	# Partecipazione	€ Contributo finanziario
Main list	656	285.349.245 €
Reserve list	249	101.661.178 €
Below available budget	1579	661.682.678 €
Below Threshold	1061	515.116.881 €
Totale complessivo	**4016**	**1.940.272.588 €**

# Tasso di successo	€ Tasso di successo	# Rientro nazionale	€ Rientro Nazionale
16,3%	14,7%	11,3%	10,5%

CALL 2021 + 2022 | COMPETIZIONE EUROPEA

Paesi	# Partecipazione	€ Contributo finanziario	# Rientro	€ Rientro
DE	753	418.541.677 €	13,0%	15,4%
ES	814	366.086.073 €	14,1%	13,5%
IT	**656**	**285.349.245 €**	**11,3%**	**10,5%**
FR	502	260.620.383 €	8,7%	9,6%
EL	402	187.471.035 €	6,9%	6,9%
BE	345	170.169.082 €	6,0%	6,3%
NL	295	166.217.280 €	5,1%	6,1%

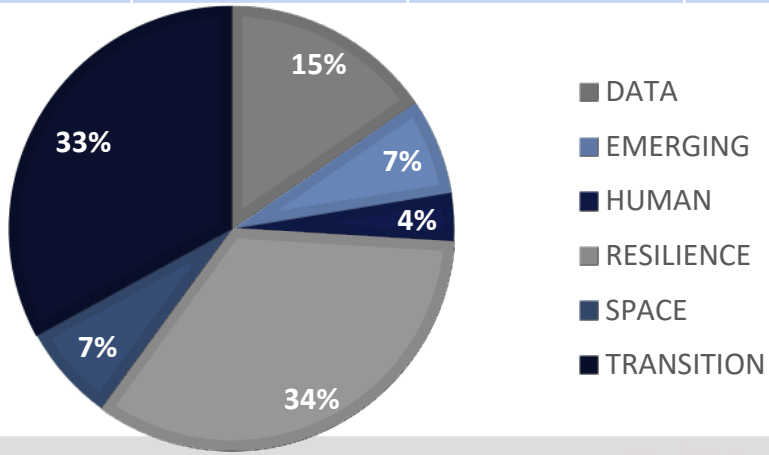
ITALIA #
3° posto

ITALIA €
3° posto

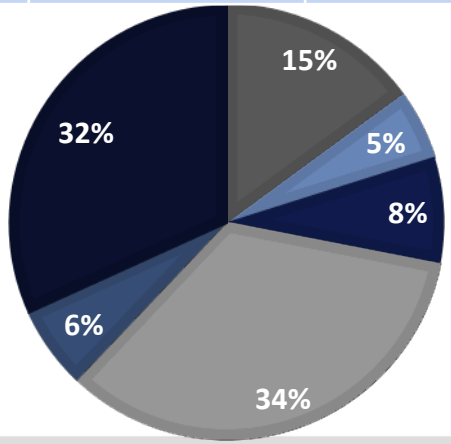
IT – CALL 2022 | DESTINATION

	Destination	DATA	EMERGING	HUMAN	RESILIENCE	SPACE	TRANSITION
Tasso di successo	# Numerosità partecipazione	13,62%	23,26%	7,81%	8,55%	31,75%	19,34%
	€ Contributo Finanziario	13,27%	17,27%	14,68%	6,34%	36,85%	18,77%
Rientro Nazionale	# Numerosità partecipazione	10,21%	7,04%	9,09%	11,48%	10,42%	14,42%
	€ Contributo Finanziario	9,31%	5,49%	14,15%	11,12%	8,82%	12,33%

IT – Distribuzione partecipanti per Destination



IT – Distribuzione contributo per Destination



Cluster 4: come è andato il 2022?

- Il **success rate** della partecipazione italiana è diminuito drasticamente dal 2021 al 2022, **dal 20% al 12%:**
  - In particolare, l'Italia **mantiene il terzo posto** sia in termini di posizionamento che contributo
  - **Meno proposte vincenti** con partner italiani presenti rispetto al 2021
  - **Meno coordinamenti italiani** rispetto al 2021
  - **Stabile il rientro nazionale** rispetto al 2021
  - Il **25%** della partecipazione italiana nel Cluster 4 è rappresentata da **pmi**, dato inferiore a quello europeo (29%).

Cluster 4: come è andato il 2022?

- Buona, in particolare, la partecipazione italiana su **destionation 4 -** Digital and emerging technologies for competitiveness and fir for the Green Deal (ma rientro solo al 5%)
- Buona anche quella su **destination 5 -** Open strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data
- Il dato medio del **rientro rimane costante** tra il 7-11%, eccezione per **destination 1** «Climate neutral, circular and digitized production con rientro **del 14%**

CLUSTER 4 | Overview Work Programme 2023 -24

Versione WP:
Ottobre 2022

Adozione
25-28 Novembre

Pubblicazione
28 Nov – 1 Dic

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 2023per un	202	15

WP23-24|OVERVIEW call 2024

Destination	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

2023 | Condizioni specifiche/criteri di eleggibilità aggiuntivi

Blind evaluation (two-stage)

4 topics in destination 6 with **FSTP**

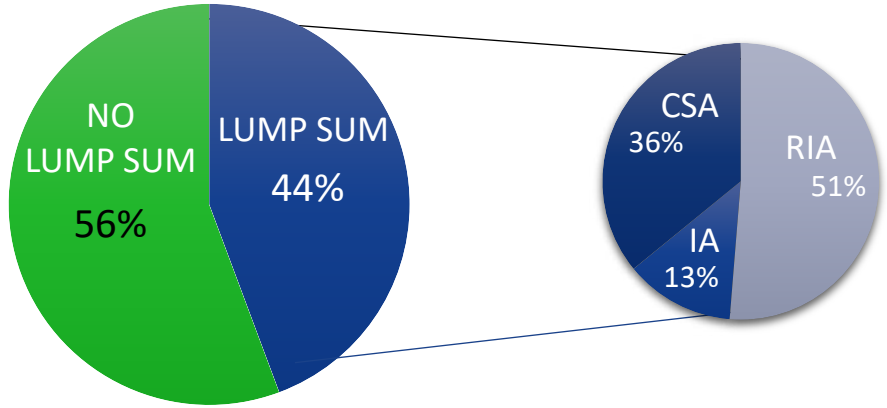
ART 22.5

- Limited participation in 6 out of 16 topics in destination 5
- Limited participation in 3 out of 14 topics in destination 4

COLLABORATIONS (17 topics)

- International Cooperation: 10 topics
- Collaboration with JRC: 3 topics
- Collaboration with EIT: 4 topics

Lump Sum



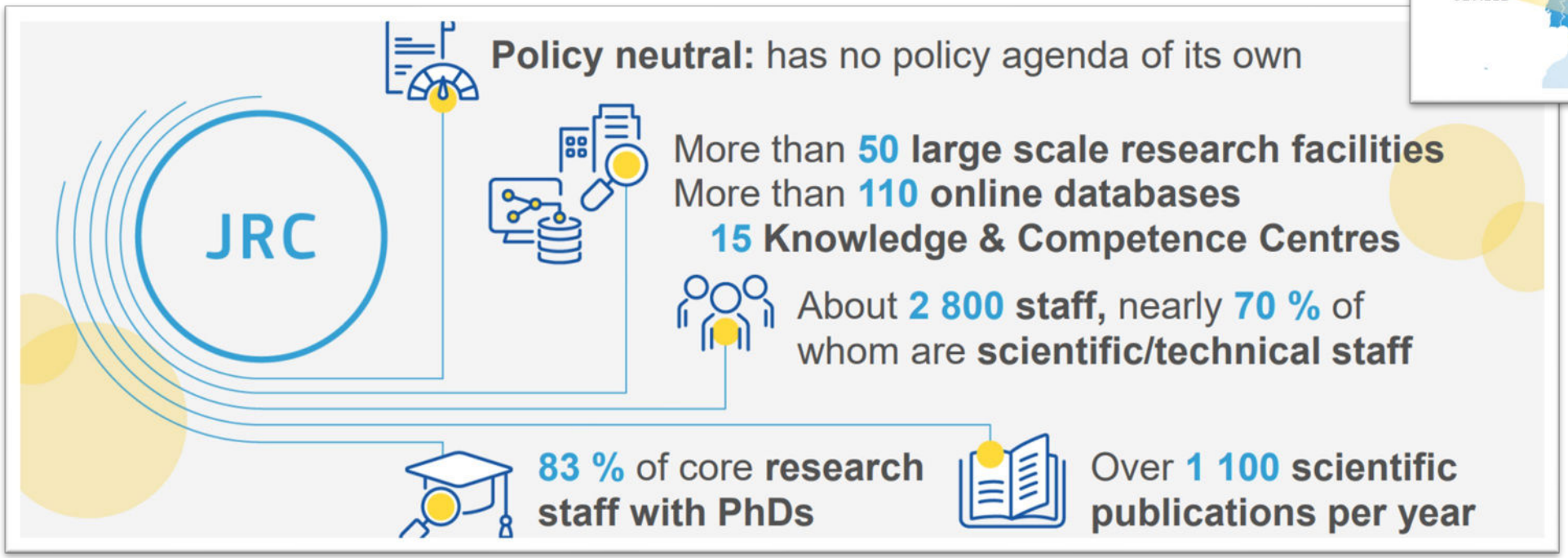
TWO stages – Blind evaluation
(2023, solo Twin Transition e Resilience)

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.*



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.)

2023 | Cooperazione Internazionale

Non è possibile includere in alcuna modo la Cina in qualsiasi Innovation Action!

TOPIC	COUNTRIES
HORIZON-CL4-2023-TWIN-TRANSITION-01-40: Sustainable and efficient industrial water consumption: through energy and solute recovery (Processes4Planet partnership)	with countries advanced in the field
HORIZON-CL4-2023-TWIN-TRANSITION-01-42: Circular economy in process industries: Upcycling large volumes of secondary resources (Processes4Planet partnership)	with countries advanced in the field
HORIZON-CL4-2023-DATA-01-04: Cognitive Computing Continuum: Intelligence and automation for more efficient data processing (AI, data and robotics partnership)	Especially with Japan and S. Korea
HORIZON-CL4-2023-DATA-01-06: Coordination and Support of Cognitive Computing Continuum research and policy	Especially with Japan and S. Korea
HORIZON-CL4-2023-DIGITAL-EMERGING-01-11: Low TRL research in micro-electronics and integration technologies for industrial solutions	Especially with leading semiconductor countries (e.g. Japan, South Korea, Taiwan)

2023 | Cooperazione Internazionale

Non è possibile includere in alcuna modo la Cina in qualsiasi Innovation Action!

TOPIC	COUNTRIES
HORIZON-CL4-2023-SPACE-01-71: Scientific exploitation of space data	with countries active in space exploration and space science
HORIZON-CL4-2023-HUMAN-01-63: Provide for a strong and sustainable pool of experts for European Standardisation: attract the students of university/HEI	encouraged
HORIZON-CL4-2023-HUMAN-01-64: Pre-normative research and standardisation in industrial ecosystems	encouraged
HORIZON-CL4-2023-HUMAN-01-01: Efficient trustworthy AI - making the best of data (AI, Data and Robotics Partnership)	encouraged
HORIZON-CL4-2023-HUMAN-01-23: Supporting the emergence of an open human-centric Metaverse	in relation to interoperability and standardisation.

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.

Call 2023 opening soon

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

EuroHPC JU (https://eurohpc-ju.europa.eu/index_en)
Key Digital Technologies JU (https://www.kdt-ju.europa.eu/)
Smart Networks and Services JU (https://smart-networks.europa.eu/)

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 Istitutional partnership (Art. 185, Public-Public)

European Partnership on Metrology (https://www.euramet.org/)

Call 2023 opening soon

Cluster 4 Complementarities – Digital Europe

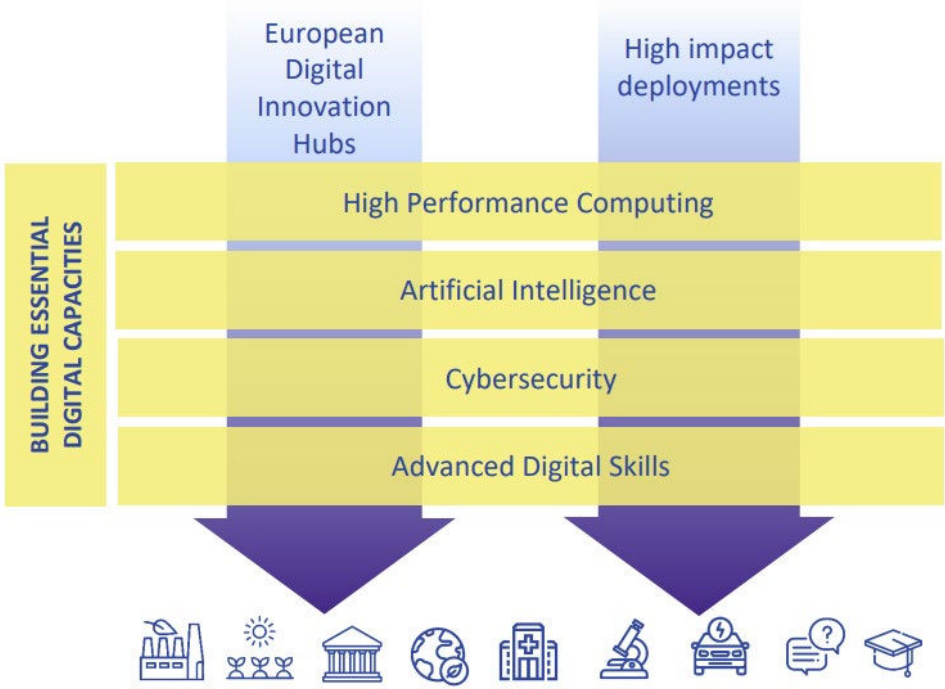
It will make use of the most recent research results, **but it will not support research**. For example:

- 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



Cluster 4 – Policy Framework

AMi2030
ADVANCED MATERIALS INITIATIVE

Policy and horizontal considerations

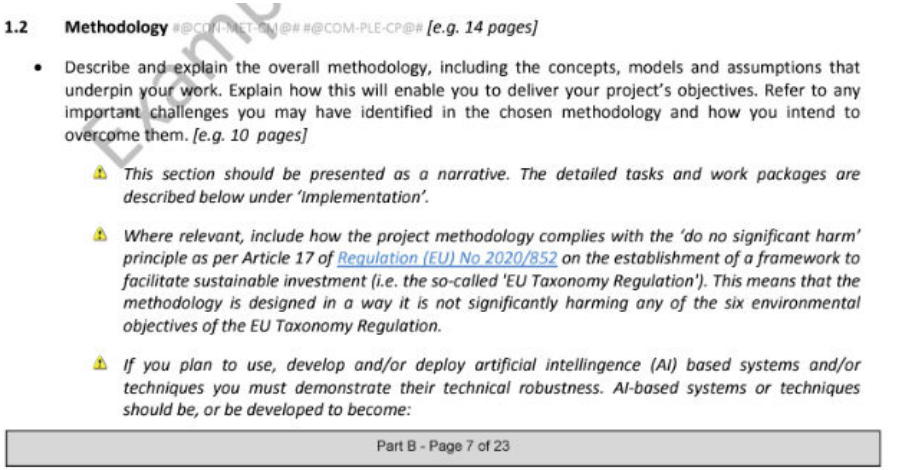
- Open Science across the programme
- Gender dimension in R&I content
- Pathway to impact
- Measures to maximise impact
- Do no significant harm principle (DNSH)
- Artificial intelligence

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-MET-BM@# #@COM-PLE-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

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*

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

APPROFONDIMENTO TOPIC
Work Programme 2023

1 Climate neutral, circular and digitized production

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.

Climate neutral, circular and digitized production

Call - TWIN GREEN AND DIGITAL TRANSITION 01 - (2023) Opening date 1 Dec 2022 – Deadline 20 Apr 2022

Topics	Type of Action	Budgets	EU contribution per project	N°of projects	Topic features
HORIZON-CL4-2023-TWIN-TRANSITION-01-02 High-precision OR complex product manufacturing – potentially including the use of photonics (Made in Europe and Photonics Partnerships)	IA	48.00	5.00 to 6.00	8	Lump sum
HORIZON-CL4-2023-TWIN-TRANSITION-01-04 Factory-level and value chain approaches for remanufacturing (Made in Europe Partnership)	IA	38.00	5.00 to 7.00	6	EIT
HORIZON-CL4-2023-TWIN-TRANSITION-01-07 Achieving resiliency in value networks through modelling and Manufacturing as a Service (Made in Europe Partnership)	RIA	32.00	4.00 to 6.00	6	
HORIZON-CL4-2023-TWIN-TRANSITION-01-08 Foresight and technology transfer for Manufacturing as a Service (Made in Europe Partnership)	CSA	1,00	Around 1,00	1	Lump sum
HORIZON-CL4-2023-TWIN-TRANSITION-01-31 Energy efficiency breakthroughs in the process industries (Processes4Planet partnership)	RIA	32.00	8.00 to 10.00	3	Lump sum
HORIZON-CL4-2023-TWIN-TRANSITION-01-33 Electrification of high temperature heating systems (Processes4Planet Partnership)	IA	36.00	12.00 to 15.00	3	
HORIZON-CL4-2023-TWIN-TRANSITION-01-36 Modelling industry transition to climate neutrality, sustainability and circularity (Processes4Planet partnership)	RIA	13,00	6,00 to 7,00	2	Lump sum
HORIZON-CL4-2023-TWIN-TRANSITION-01-37 Hubs for circularity for near zero emissions regions applying industrial symbiosis and cooperative approach to heavy industrialized clusters and surrounding ecosystems (Processes4Planet partnership)	IA	40.00	15.00 to 20.00	2	
HORIZON-CL4-2023-TWIN-TRANSITION-01-40 Sustainable and efficient industrial water consumption: through energy and solute recovery (Processes4Planet partnership)	RIA	30.00	10.00 to 12.00	3	Int coop

MANUFACTURING

ENERGY INTENSIVE PROCESS INDUSTRY

Climate neutral, circular and digitized production

Call - TWIN GREEN AND DIGITAL TRANSITION 01 - (2023) Opening date 1 Dec 2022 – Deadline 20 Apr 2022

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2023-TWIN-TRANSITION-01-42 Circular economy in process industries: Upcycling large volumes of secondary resources (Processes4Planet partnership)	RIA	30.00	10.00 to 12.00	3	Int coop Lump sum
HORIZON-CL4-2023-TWIN-TRANSITION-01-43 Low carbon-dioxide emission technologies for melting iron-bearing feed materials OR smart carbon usage and improved energy & resource efficiency via process integration (Clean Steel Partnership)	IA	23.00	4.00 to 6.00	4	
HORIZON-CL4-2023-TWIN-TRANSITION-01-45 Circular economy solutions for the valorisation of low-quality scrap streams, materials recirculation with high recycling rate, and residue valorisation for long term goal towards zero waste (Clean Steel Partnership)	RIA	12.00	3.00 to 6.00	2	
Overall indicative budget		335.00			

ENERGY INTENSIVE PROCESS INDUSTRY

Climate neutral, circular and digitized production

Call - TWIN GREEN AND DIGITAL TRANSITION 01 - TWO STAGE- (2023)

Opening date 01 Dec 2022

Deadline(s): 07 Mar 2023 (First Stage), 05 Oct 2023 (Second Stage)

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2023-TWIN-TRANSITION-01-11 Intelligent data acquisition and analysis of materials and products in existing built works	RIA	12.00	5.00 to 6.00	2	NEB Lump sum BLIND EVALUATION
Overall indicative budget		12.00			

A New Way to Build, accelerating disruptive change in construction

Increased autonomy in key strategic value chains for resilient industry

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.

Increased autonomy in key strategic value chains for resilient industry

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..

Increased autonomy in key strategic value chains for resilient industry

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*.

Increased autonomy in key strategic value chains for resilient industry

Call - HORIZON-CL4-2023-RESILIENCE-01-TWO-STAGE - (2023)
Opening 1 Dec 2022
Deadline 07 Mar 2023 (First Stage), 05 Oct 2023 (Second Stage)

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2023-RESILIENCE-01-32 Bioinspired and biomimetic materials for sustainable textiles	IA	31.00	6.00 to 8.00	4	BLIND EVALUATION
HORIZON-CL4-2023-RESILIENCE-01-33 Smart sensors for the Electronic Appliances market	RIA	31.00	6.00 to 8.00	4	Lump sum BLIND EVALUATION
HORIZON-CL4-2023-RESILIENCE-01-34 Advanced (nano and bio-based) materials for sustainable agriculture	RIA	31.00	6.00 to 8.00	4	BLIND EVALUATION
HORIZON-CL4-2023-RESILIENCE-01-37 Advanced materials for magnets in applications for the New Energies Market	RIA	31.00	6.00 to 8.00	4	BLIND EVALUATION
Overall indicative budget		124.00			Strategic innovation markets driven by advanced materials

Increased autonomy in key strategic value chains for resilient industry

Call - HORIZON-CL4-2023-RESILIENCE-01 Opening date 1 Dec 2022 **- Deadline** 20 Apr 2023

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2023-RESILIENCE-01-02 Innovative technologies for sustainable and decarbonised extraction	RIA	25.00	Around 5.00	5	Lump sum
HORIZON-CL4-2023-RESILIENCE-01-03 Technologies for processing and refining of critical raw materials	IA	22.00	Around 7.30	3	
HORIZON-CL4-2023-RESILIENCE-01-05 Recycling technologies for critical raw materials from EoL products	IA	28.00	Around 7.00	4	
HORIZON-CL4-2023-RESILIENCE-01-06 Earth Observation platform, products and services for raw materials	IA	20.00	Around 6.70	3	Lump sum
HORIZON-CL4-2023-RESILIENCE-01-07 Expert network on Critical raw materials	CSA	3.00	Around 3.00	1	Lump sum
HORIZON-CL4-2023-RESILIENCE-01-09 Recyclability and resource efficiency of Rare Earth based magnets	IA	20.00	Around 6.70	3	
Overall indicative budget		-----			

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

Increased autonomy in key strategic value chains for resilient industry

Call - HORIZON-CL4-2023-RESILIENCE-01 Opening date 1 Dec 2023 - Deadline 20 Apr 2023

Topics	Type of Action	Budgets	EU contribution per project	N° of projects	Topic features
HORIZON-CL4-2023-RESILIENCE-01-21 Innovative methods for safety and sustainability assessments of chemicals and materials	RIA	29,4	6.00 to 8.00	4	Safe and Sustainable by Design (SSbD) Chemicals and Materials JRC
HORIZON-CL4-2023-RESILIENCE-01-22 Integrated approach for impact assessment of safe and sustainable chemicals and materials	RIA	15.00	3.00 to 4.00	4	JRC
HORIZON-CL4-2023-RESILIENCE-01-23 Computational models for the development of safe and sustainable by design chemicals and materials	RIA	29,33	6.00 to 7.00	4	Lump sum
HORIZON-CL4-2023-RESILIENCE-01-39 Coordination and knowledge sharing across materials development communities	CSA	2.00	Around 2.00	1	Lump sum
HORIZON-CL4-2023-RESILIENCE-01-42 Boosting generation and diffusion of advanced technologies in SMEs based on a supply chain model	CSA	10.00	2.00 to 3.00	4	Lump sum
HORIZON-CL4-2023-RESILIENCE-01-44 Affordable Housing District Demonstrator	IA	10.00	Around 5.00	2	NEB Strategic innovation markets driven by advanced materials
Overall indicative budget		213,73			

World leading data and computing technologies

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.

World leading data and computing technologies

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

Topics	Type of Action	Budgets	EU contribution per project	N°projects	Topic features
HORIZON-CL4-2023-DATA-01-02 Integration of data life cycle, architectures and standards for complex data cycles and/or human factors, language (AI, data and robotics partnership)	RIA	45.00	Around 9.00	5	Data sharing and analytics capacity
HORIZON-CL4-2023-DATA-01-07 Collaboration with NSF on fundamental research on new concepts for distributed computing and swarm intelligence	CSA	1.00	Around 1.00	1	
HORIZON-CL4-2023-DATA-01-04 Cognitive Computing Continuum: Intelligence and automation for more efficient data processing (AI, data and robotics partnership)	RIA	28.00	4.00 to 6.00	6	Int coop Lump sum
HORIZON-CL4-2023-DATA-01-06 Coordination and Support of Cognitive Computing Continuum research and policy	CSA	2.00	Around 2.00	1	Int coop
Overall indicative budget		76.00			From Cloud to Edge to IoT for European Data
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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

Digital and emerging technologies for competitiveness and fir for the Green Deal

Call - HORIZON-CL4-2023-DIGITAL-EMERGING-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-DIGITAL-EMERGING-01-01 Industrial leadership in AI, Data and Robotics – advanced human robot interaction (AI Data and Robotics Partnership)	RIA	30.00	Around 8.00	4	
HORIZON-CL4-2023-DIGITAL-EMERGING-01-12 Adaptive multi-scale modelling and characterisation suites from lab to production	RIA	22.00	5.00 to 7.00	4	AI, Data and Robotics
HORIZON-CL4-2023-DIGITAL-EMERGING-01-51 Pervasive photonics - multi-technology integration for digital infrastructure, sensors and internet of things (Photonics partnership)	RIA	18.00	3.00 to 5.00	4	
HORIZON-CL4-2023-DIGITAL-EMERGING-01-53 Versatile light sources and systems as tools for manufacturing and medical application (Photonics Partnership)	RIA	18.00	3.00 to 5.00	4	Lump sum
HORIZON-CL4-2023-DIGITAL-EMERGING-01-57 Advanced imaging and sensing technologies (IA)(Photonics Partnership)	IA	20.00	5.00 to 7.00	4	Lump sum
budget		108.00			European Innovation Leadership in Photonics

Digital and emerging technologies for competitiveness and fir for the Green Deal

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-01-02 Industrial leadership in AI, Data and Robotics – advanced human robot interaction (AI Data and Robotics Partnership)	IA	30.00	Around 10.00	3	AI, Data and Robotics
HORIZON-CL4-2023-DIGITAL-EMERGING-01-11 Low TRL research in micro-electronics and integration technologies for industrial solutions	RIA	35.00	3.00 to 4.00	10	Int coop European Leadership in Emerging and Enabling Technologies
HORIZON-CL4-2023-DIGITAL-EMERGING-01-32 Sustainable safe-by-design 2D materials technology	RIA	6.00	3.00 to 5.00	2	Lump sum
HORIZON-CL4-2023-DIGITAL-EMERGING-01-33 2D materials of tomorrow	RIA	12.00	3.00 to 4.00	3	Graphene and 2D materials: Europe in the lead

Digital and emerging technologies for competitiveness and fir for the Green Deal

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			

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

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.'

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

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.

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

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-01-11 End-to-end Earth observation systems and associated services	IA	10.10	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

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

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			

Evolution of services: Copernicus

Innovative space capabilities: SSA, GOVSATCOM, Quantum

Targeted and strategic actions supporting the EU space sector

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

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	**Targeted and strategic actions supporting the EU space sector**
Overall indicative budget		137.50			

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

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

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 innovation

Research and Innovation for Industry 5.0

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

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
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	
Overall indicative budget		53			

European standards for industrial competitiveness

International Cooperation

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

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 Trus	IA	10.00	Around 5.00	2	Lump sum

Leadership in AI based on trust

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

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

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

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
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

eXtended Reality

European standards for industrial competitiveness

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

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

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