

Horizon Europe per il Made in Italy

Cluster Nazionale Made in Italy

23 Novembre 2021

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APRE- Agency for the Promotion of European Research



Agenda

🏠 Horizon Europe

- 🏠 General Introduction
- 🏠 Rules of participation

🏠 Cluster 2 – Culture, Creativity and Inclusive society

- 🏠 General Introduction
- 🏠 R&I opportunities – Cluster MinIT
- 🏠 Examples of European funded projects

🏠 Cluster 4 – Digital, Industry and Space

- 🏠 General Introduction
- 🏠 R&I opportunities – Cluster MinIT
- 🏠 Examples of European funded projects
- 🏠 Sources



“Europe must lead the transition to a healthy planet and a new digital world. But it can only do so by bringing people together and upgrading our unique social market economy to fit today’s new ambitions.”



Mariya Gabriel, European Commissioner for Innovation, Research, Culture, Education and Youth

*“The programme aims at giving Europe a new push to a global positioning. Horizon Europe is to be **the biggest and most ambitious EU Research Innovation programme ever**. It builds on the success of Horizon 2020 and improves it further by fostering a stronger support to **breakthrough innovation** through the European Innovation Council, by creating greater **impact** through R&I **missions** and by streamlining **partnerships** landscape.”*



The EC vision

Investing in R&I to shape our future

- Tackling **climate change** (35 % budgetary target)
- Helping to achieve **Sustainable Development Goals**
- Boosting the Union's **competitiveness and growth**





6 Commission priorities for 2019-24

A European Green Deal

Striving to be the first climate-neutral continent



A Europe fit for the digital age

Empowering people with a new generation of technologies



An economy that works for people

Working for social fairness and prosperity



A stronger Europe in the world

Europe to strive for more by strengthening our unique brand of responsible global leadership



Promoting our European way of life

Building a Union of equality in which we all have the same access to opportunities.



A new push for European democracy

Nurturing, protecting and strengthening our democracy





Horizon Europe



SPECIFIC OBJECTIVES



to develop, promote and advance scientific excellence, support the creation and diffusion of **high-quality new fundamental and applied knowledge, skills, technologies and solutions**, training and mobility of researchers, attract talent at all levels and contribute to full engagement of Union's talent pool in actions supported under this Programme; bottom up.



to generate knowledge, strengthen **the impact of research and innovation** in developing, supporting and implementing Union policies and support the access to and uptake of innovative solutions in European industry, notably in SMEs, and society to address global challenges, including climate change and the Sustainable Development Goals; top down.



Clusters in 'Global Challenges and European Industrial Competitiveness'

Clusters	Areas of intervention
Health	<ul style="list-style-type: none">• Health throughout the life course• Non-communicable and rare diseases• Tools, technologies and digital solutions for health and care, including personalised medicine <ul style="list-style-type: none">• Environmental and social health determinants• Infectious diseases, including poverty-related and neglected disease• Health care systems
Culture, creativity and inclusive society	<ul style="list-style-type: none">• Democracy and Governance• Social and economic transformations <p>Culture, cultural heritage and creativity</p>
Civil security for society	<ul style="list-style-type: none">• Disaster-resilient societies• Protection and Security <ul style="list-style-type: none">• Cybersecurity
Digital, Industry and space	<ul style="list-style-type: none">• Manufacturing technologies• Advanced materials• Next generation internet• Circular industries• Space, including Earth Observation• Emerging enabling technologies <ul style="list-style-type: none">• Key digital technologies, including quantum technologies• Artificial Intelligence and robotics• Advanced computing and Big Data• Low-carbon and clean industry• Emerging enabling technologies
Climate, Energy and Mobility	<ul style="list-style-type: none">• Climate science and solutions• Energy systems and grids• Communities and cities• Industrial competitiveness in transport• Smart mobility <ul style="list-style-type: none">• Energy supply• Buildings and industrial facilities in energy transition• Clean, safe and accessible transport and mobility• Energy storage
Food, bioeconomy, natural resources, agriculture and environment	<ul style="list-style-type: none">• Environmental observation• Agriculture, forestry and rural areas• Circular systems• Food systems <ul style="list-style-type: none">• Biodiversity and natural resources• Seas, oceans and inland waters• Bio-based innovation systems in the EU Bioeconomy

SPECIFIC OBJECTIVES



to foster **all forms of innovation**, facilitate technological development, demonstration and knowledge and technology transfer, strengthen deployment and exploitation of innovative solutions; bottom up



to optimise the Programme's delivery for **strengthening and increasing the impact and attractiveness of the European Research Area**, to foster the excellence-based participations from all Member States, including low R&I performing Member States, in Horizon Europe and to facilitate collaborative links in European research and innovation. Top down



European Partnerships relevant for MinIT

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.

7 Co-programmed partnerships (supported via HE)

Made in Europe (ex FoF)

Process4Planet - Carbon neutral Circular Industry

AI, Data and Robotics

Photonics

2 Istititutional partnerships (Art.187, Public-Private)

Circular Bio-based Europe JU (ex BBI JU)

Key Digital Technologies JU (ex ECSEL JU)

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

Driving Urban Transition

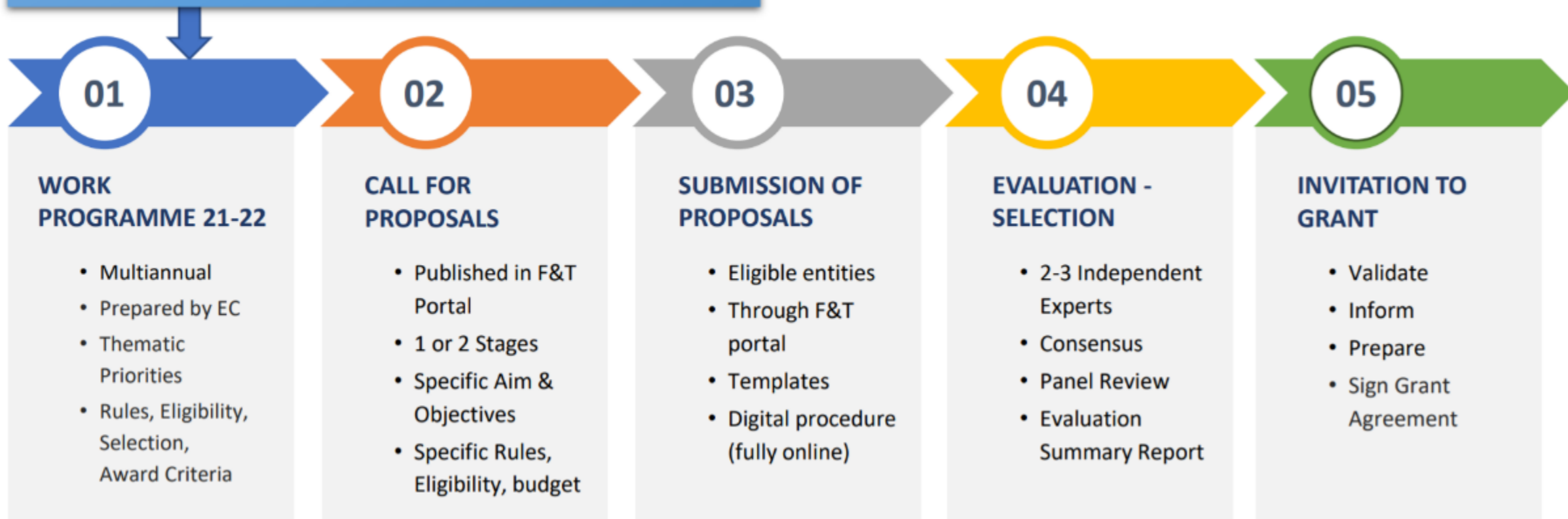


How to participate

Rules for participation



Horizon Europe Strategic Plan 2021-2024





Get ready for Horizon Europe Calls

How to prepare for HE



Study the Policies

- Strategic Plan 2021-24
- Strategic Plan Analysis
- General Intro of WP 2021-22



Identify your call

- Scan the WP to find a relevant call to your interests
- Study carefully the call text
- Study General Annex of WP



Start building

- Study the new Proposal Template
- Prepare your concept
- Build your consortium
- Legal Documents (MGA, CA)

Horizon Europe Work Programmes

How an HE Work Programme is structured

Work Programme 2021-22

- General Intro
- MSCA
- RI
- 6 (1 per Cluster)
- EIC
- WIDENING



Documents :

- Strategic Plan 2021-24
- Work Programme 21-22
- Proposal Template
- Model Grant Agreement (MGA)



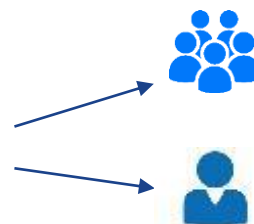
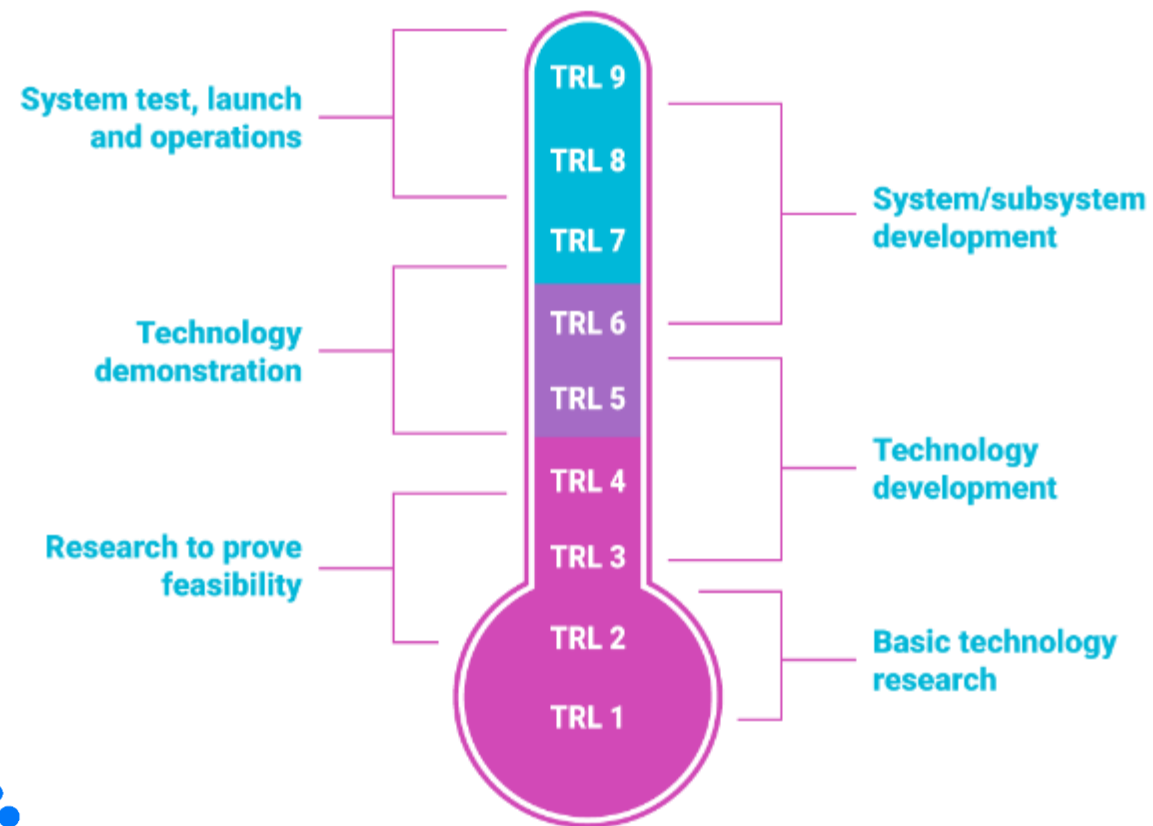
Type of Actions

🚩 **Research and Innovation Actions - RIA**
100% Funding Rate + 25% Indirect Costs

🚩 **Innovation Actions - IA**
70% Funding Rate + 25% Indirect Costs
(with exception of no-profit entities)

🚩 **Coordination and Support Actions - CSA**
100% Funding Rate + 25% Indirect Costs

Some calls may require
Financial Support to Third Parties





CL4 Type of Actions - Industry

- ↗ A pilot is applied to a number of topics for co-programmed partnerships, involving a lower funding rate of 60% (except for non-profit legal entities), in order to enhance industrial contributions.
- ↗ It applies to topics starting above TRL 4 and reaching TRLs 7 and 8.

Made in Europe
Process4Planet
CleanSteel





How to participate

Eligibility Condition for RIA and IA: Consortium composition
at least three independent legal entities established in three different Member States or Associated Countries, of which at least one is an independent legal entity established in a Member State

Status of association (@ 10 November 2021)

- **Associated:** Norway and Iceland
- **Agreement signed:** Turkey, Moldova, Ukraine
- **Currently in ratification:** Ukraine
- **Formal negotiation concluded:** Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, Georgia, Israel, Montenegro, North Macedonia, Kosovo*, Serbia and Tunisia
- **On-going:** Morocco and UK

Plus:

- **Exploratory talks** with Canada

(*) This designation is without prejudice to positions on status, and is in line with UNSC 1244 and the ICJ Opinion on the Kosovo declaration of independence

https://ec.europa.eu/info/news/informal-exploratory-talks-association-horizon-europe-2021-jan-28_en

European Commission



International Cooperation with Horizon Europe Third Countries

- Low and middle income countries (with EU financial contribution)
- Other countries without EU funding



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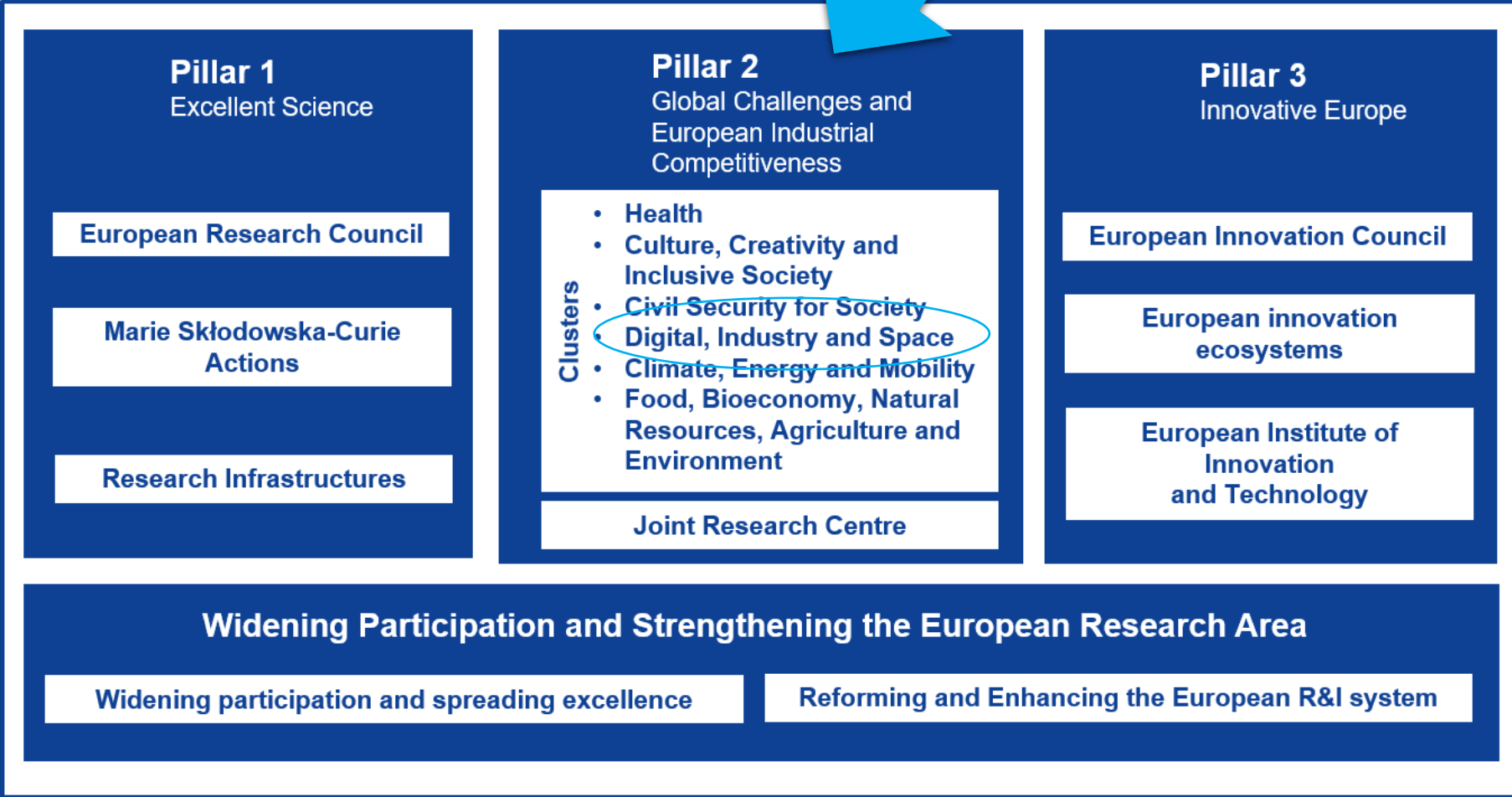


Horizon Europe per il Made in Italy





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 - Policy Framework





Cluster 4 Destinations

2021-22

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

Cluster 4 – Work Programme Overview



D1 - Climate neutral, circular and digitized production
TWIN-TRANSITION (KSO C)

Manufacturing

Circularity in Process Industries

Construction

D2 - Increased autonomy in key strategic value chains for resilient industry
RESILIENCE (KSO A)

Green and Sustainable Materials

Raw Materials

Resilience of EU businesses

D3 - World leading data and computing technologies
DATA (KSO A)

European data space

Data analytics capacity

From Cloud to Edge to IoT

D4 - Digital and emerging technologies for competitiveness and fir for the Green Deal
DIGITAL-EMERGING (KSO A)

Electronics, Processors and Photonics

AI, data and robotics

Connectivity technologies

Emerging Techs (Quantum, Graphene)

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

Competitiveness of space systems

Galileo, Egnos, Copernicus and SSA, GOVSATCOM

Space entrepreneurship ecosystems

D6 - A human-centred and ethical development of digital and industrial technologies
HUMAN (KSO D)

AI based on trust

Internet of Trust

Extended Reality

Digital learning technologies

Cross-cutting



Indicative Budget of Cluster 4 2021-27 budget of 15.348 bn€ (including NGEU)

For the WP 2021-2022, **budget is ~3.5 bn€**, distributed *approximately* as follows:

DESTINATION	BUDGET 2021-2022
Destination 'Climate neutral, circular and <u>digitised</u> production'	737.5 M€
Destination 'Increased autonomy in key strategic value chains for resilient industry'	776.4 M€
Destination 'World leading data and computing technologies'	346.0 M€
Destination 'Digital and emerging technologies for competitiveness and fit for the green deal'	750.0 M€
Destination 'Open Strategic autonomy in developing, deploying and using global space-based infrastructures, services, applications and data' (incl. Other Actions)	517.6 M€
Destination 'A Human-centred and ethical development of digital and industrial technologies'	327.0 M€
Other Actions (other than Space-related)	36.0 M€



European
Commission



Open Calls – Some examples

1

Climate neutral, circular and digitized production

- ❏ HORIZON-CL4-2022-TWIN-TRANSITION-01-07: Digital tools to support the engineering of a Circular Economy (Made in Europe Partnership) (RIA)
- ❏ Provide digital tools for engineers, technicians and operators on the factory floor, to build **agile, sustainable and responsive production** environment and supply chains: focus on areas such as material saving, repair, refurbishing, re-manufacturing, recycling, and reuse of products and components;
- ❏ **Reduction of the dependency from imported materials** (e.g. by material consumption reduction, material substitution and use of secondary raw materials);
- ❏ Define **specifications and standards** for data, products, and/or business processes and facilitate industry agreements on **circularity and sustainability**.

Deadline: [30 March 2022]

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2022-twin-transition-01-07>



Open Calls – Some examples

2

Increased autonomy in key strategic value chains for resilient industry

- ❏ HORIZON-CL4-2022-RESILIENCE-01-12: Functional multi-material components and structures (RIA) [30 March 2022]
- ❏ Contribute to **energy efficiency**, increase competitiveness of new multi-materials items and **multi-functional materials and products** for a wide range of applications in the additive manufacturing industries and in specific industrial sectors e.g. transport, **consumer customised goods**, communications, biomaterials, health and energy;
- ❏ Develop optimised structures in terms of operational performance and weight with a goal of reducing weight by 50% compared to traditional designs;
- ❏ Reduced lead-time of multimaterial products of 20% compared to today's design;
- ❏ implementation of innovative and **unconventional technologies** along the EU's manufacturing value chain;
- ❏ [...]

Deadline: [30 March 2022]

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2022-resilience-01-12>



Open Calls – Some examples

6

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

🔗 HORIZON-CL4-2022-HUMAN-01-14: eXtended Reality Technologies (RIA)

- 🔗 XR industrial and societal applications, integrating technologies such as advanced visualisation, 3D, Augmented and Virtual Reality experiences, human-machine interaction and cooperation, with a focus on well designed and **fully tested scenarios in real-world environment** by:
- 🔗 e.g. devising innovative digital interfaces that take advantage of spatial computing to allow users to **interact with real-time contextual information** activated by intuitive sensory triggers;
- 🔗 e.g. enabling the construction of compelling context-aware and **embodied experiences** by providing solutions for the creation of convincing digital avatars and agents, with natural looking and physically realistic behaviours, movements and expressions.



Deadline: [05 April 2022]

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/horizon-cl4-2022-human-01-14>

Budget Distribution per Call with deadlines in 2022

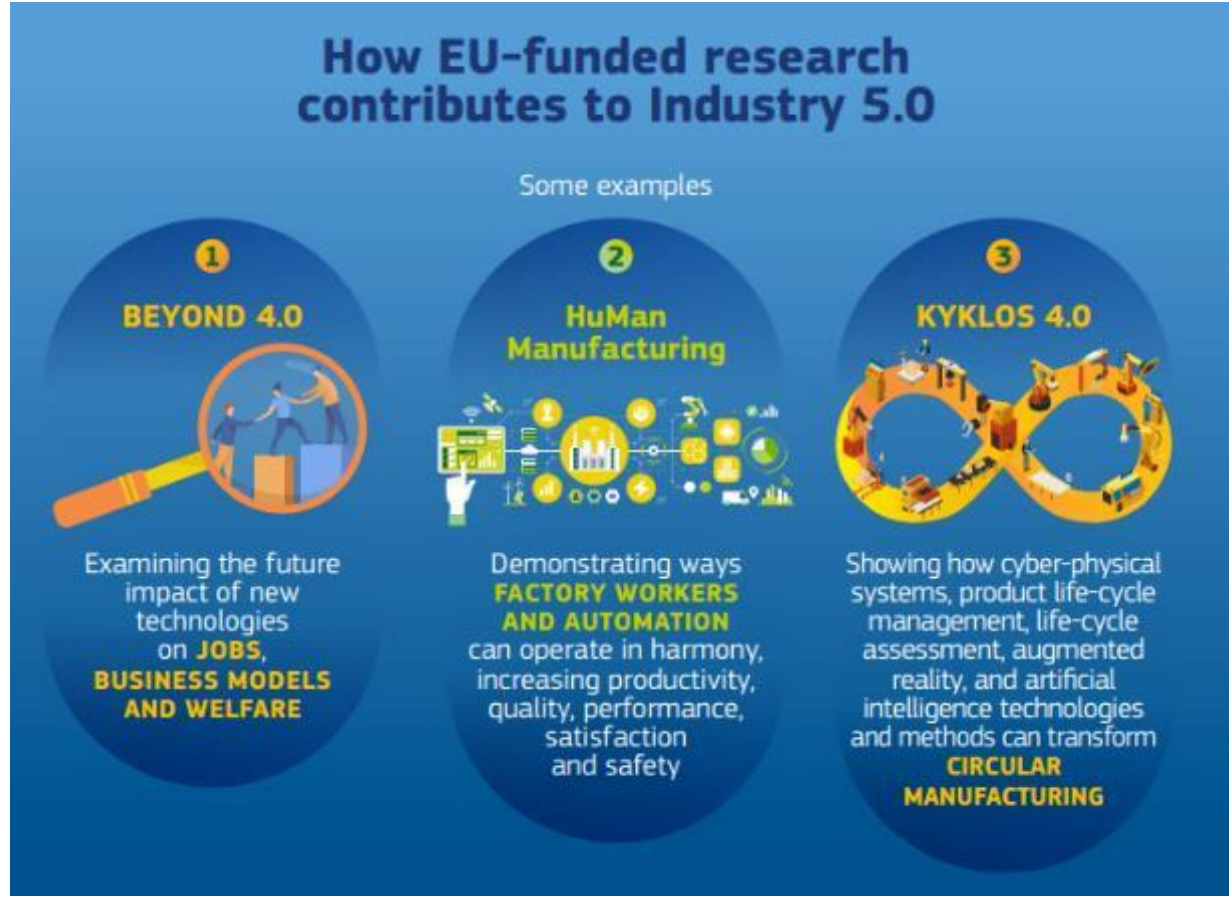


	Destination	Call	Opening Date	Deadline	Budget	F&T Links	n. Topic	% Share
1	1.Climate neutral, circular and digitized production	HORIZON-CL4-2022-TWIN-TRANSITION-01	12 Oct 2021	30-mar-22	334.50	Link	13	20,93 %
3	2.Increased autonomy in key strategic value chains for resilient industry	HORIZON-CL4-2022-RESILIENCE-01	12 Oct 2021	30-mar-22	402.20	Link	21	25,17 %
7	4.Digital and emerging technologies for competitiveness and fir for the Green Deal	HORIZON-CL4-2022-DIGITAL-EMERGING-01	23-nov-21	05-apr-22	200.00	Link	9	12,51 %
8	4.Digital and emerging technologies for competitiveness and fir for the Green Deal	HORIZON-CL4-2022-DIGITAL-EMERGING-02	16 Jun 2022	16-nov-22	43.50	Link	5	2,72%
11	6.A human-centred and ethical development of digital and industrial technologies	HORIZON-CL4-2022-HUMAN-01	23-nov-21	05-apr-22	121.00	Link	7	7,57%

http://download.apre.it/Cluster%204%20Open%20Calls_2022.pdf



EU Projects – R&I supported by European funding





EU Projects – R&I supported by European funding



THE PROJECT



What is BIOMAT

BIOMAT is a highly innovative 4-year European Project aiming to establish an Open Innovation Test Bed (BIOMAT-TB) for providing services to a wide range of European industries and SMEs in order to accelerate and facilitate the uptake of innovation in nano-enabled bio-based cellular materials.

INDUSTRIES

Furniture and Bedding Industry

BIOMAT is working on a new generation of chairs, sofas, and mattresses in the Furniture and Bedding industries. Single-bed, childbed mattresses and upholstered sofas and chairs based on nano-enabled soft and semi-soft bio-polyurethane foams, with a structure based on open-cell that increases density, durability, flexibility, strength, fatigue resistance, form stability, air permeability, and body support. These foams are also Volatile Organic Compounds (VOC) free. This is the Project Consortium's main goal for the Furniture & Bedding Industry, in response to the unsustainable petroleum-based PUR foams used in typical soft and semi-soft foams applications.

<https://biomat-testbed.eu/>



EU Projects – R&I supported by European funding

The screenshot shows the DigiPrime website interface. At the top left is the DigiPrime logo. The navigation bar includes 'Project', 'Pilots', 'Services', 'Partners', and 'Open Calls'. The 'Open Calls' menu is expanded, listing categories: 'Batteries', 'Textile', 'Mechatronics and Electronics', 'Cross-regional value-chain', 'Circular Innovation Hubs', and 'Integration'. The 'Textile' option is circled in green. Below the navigation is a large banner with the text 'Digital Platform for Circular Economy' and 'DigiPrime is a Digital Manufacturing Platform for Connected Circular Smart Factories'. At the bottom, there are five hexagonal icons representing: 'Information sharing', 'Circular profitability', 'Cross sectoriality', 'Innovation business models', and 'Standardization and legislation'.



<https://www.digiprime.eu/>



EU Projects – R&I supported by European funding

European Photonics Manufacturing Services Funded by EC

The image displays a collection of logos for various European Photonics Manufacturing Services funded by the EC. The logos are arranged in a grid-like fashion. At the top left is PhotonHub Europe. Below it is LAMCOAS. To the right of PhotonHub Europe is Pulsate. Below Pulsate is PIXAPP. To the right of PIXAPP is JePPiDX. Below PIXAPP is MedPhab. To the right of MedPhab is multiple. At the bottom left is the PHOTONICS²¹ logo, which includes the European Union flag and the text 'PHOTONICS PUBLIC PRIVATE PARTNERSHIP'. At the bottom center is the PASION logo. At the bottom right is the PHOTONICS MEDIA logo, which includes the text 'photonics.com'.

Webinar Recording: <https://t.co/JPTLbvHaga?amp=1>

Photonics21 Projects in Manufacturing:

www.photonics21.org/ppp-projects/

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: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-7-digital-industry-and-space_horizon-2021-2022_en.pdf
- ↗ Funding and Tender Portal: <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/home>
- ↗ Digital Europe Programme: <https://digital-strategy.ec.europa.eu/en/activities/digital-programme>



European NCP Networks

- **H2020 NCP Networks: Idealist2020; NMBP Team; Cosmos2020**



www.ideal-ist.eu



- Impact Canvas
- Partner Search
- Pre-proposal Check
- Toolbox
- Topic Tree
- ICT Projects Dashboard

- **LE NUOVE RETI:**
CLUSTER 4 DIGITAL, INDUSTRY, SPACE – IN PREPARAZIONE (NCP4INDUSTRY)

2021 2027

HORIZON
EUROPE



WWW.HORIZON-EUROPE.IT



Info, aggiornamenti e materiali sul nuovo Programma Quadro

GIORNATE HORIZON EUROPE



Eventi sul Programma Quadro e le sue dimensioni

GUIDA A HORIZON EUROPE



Passo, passo dentro il nuovo Programma Quadro

APRE BRIEF



I factsheet sui temi e gli aspetti salienti di Horizon Europe

AGENDA HORIZON EUROPE



I principali appuntamenti nazionali ed europei sul Programma Quadro

Registrati a **APREmailing**



www.apre.it

#2021horizoneurope

#HorizonEU

Seguici:   



Horizon Europe - Resources

Risorse sul sito APRE



<https://horizoneurope.apre.it/struttura-e-programmi/global-challenges-european-industrial-competitiveness/cluster-4/>

Horizon Europe Work Programme 2021-2022 - Digital, Industry and Space

VISITA >

General Annexes - Horizon Europe Work Programme 2021-2022

VISITA >

Horizon Europe Standard Proposal Template (RIA, IA)

VISITA >

Horizon Europe Standard Evaluation Form (RIA, IA)

VISITA >

Horizon Europe General Model Grant Agreement (RIA, IA)

VISITA >



APRE Resources



<https://apre.it/wp-content/uploads/2021/04/guida-Horizon-Europe.pdf>



https://apre.it/wp-content/uploads/2021/04/APREbrief_P ILLAR-2_cluster4.pdf



www.aprecon2021.it/aprebrief



Watch topic presentations and discussion : Cluster 4 WP

2022 INFODAYS

29 Nov, 30 Nov, 1 Dec

Please register under

Cluster 4 - Digital, Industry & Space | European

Commission (europa.eu)





2 December 2021 - 3 December 2021

Horizon Europe - Digital & Industry - Face2face Brokerage

PARTICIPANTS

Industry / Large Enterprise	87
Small or Medium Enterprise (SME)	237
University	156
Research organisation	121
Government	18
Association/Agency	33
Consultant	38
Other	40
Total	730

349

<https://digital-industry-2021.b2match.io/>





APRE

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