

VI 3DP Pilot Funding Support Service

Information about a selection of Horizon Europe Innovation Actions and Research and Innovation Actions

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Any questions regarding the Vanguard Initiative 3DP Pilot ? Please contact Jean-François Romainville (network manager, IDEA Consult, jean-francois.romainville@ideaconsult.be)

Structure of the document and next steps

- Next slides:
 - Brief overview remaining 2021-2022 opportunities
 - Brief overview DRAFT opportunities 2023-2024 included as well !!! (version draft WP June 2022)
- Express interest using Online Spreadsheet: [here](#)
- Consult the full detail of the work programme 2021-2022 here: [wp-7-digital-industry-and-space_horizon-2021-2022_en.pdf \(europa.eu\)](#) (Final WP 2023-2024 not available yet)
- Interact among interested partners
- Join the Calls-dedicated meetings that we have fixed already ! See in **green** in the document

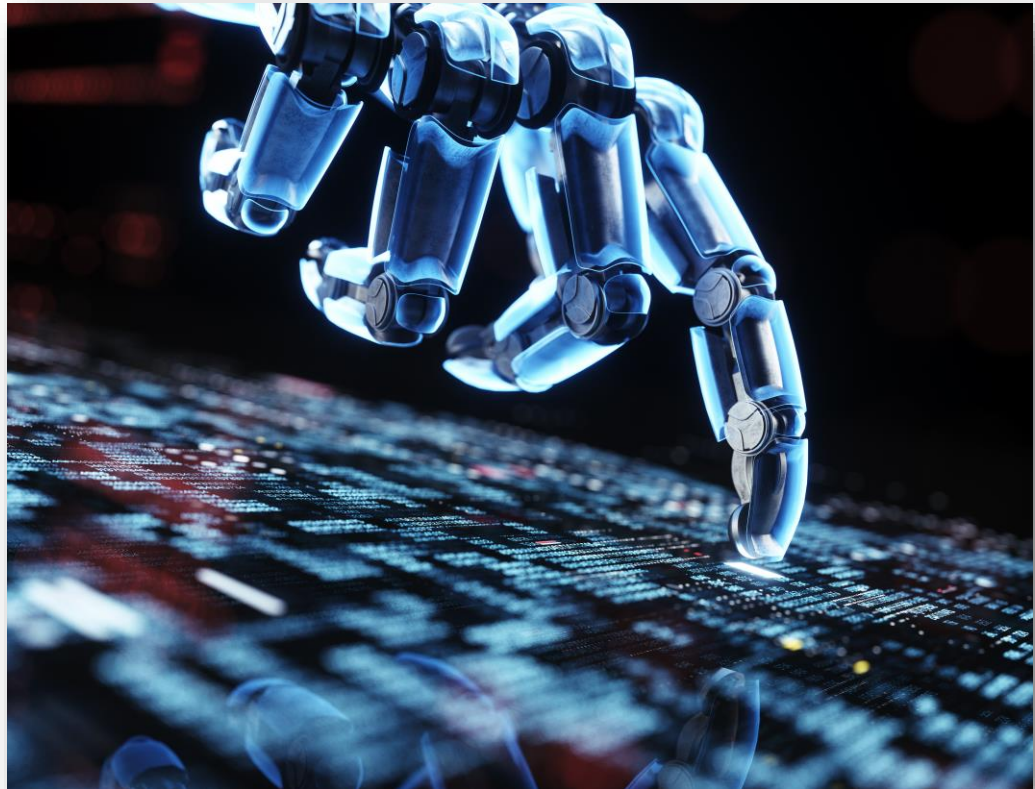
Digital and emerging technologies for competitiveness and fit for the green deal

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DIGITAL EMERGING 2022

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Research and Innovation Actions



HORIZON-CL4-2022-DIGITAL-EMERGING-02:

RIA

18: 2D materials-based devices and systems for energy storage and/or harvesting (RIA)



Open 16/06/22
– 16/11/22



9 mio. – 1
Project



START:

FINISH:

3-4 to 5

- Expected outcome:
 - Demonstrated added value of 2D materials (2DM) for energy storage devices and systems in applications where Europe can build competitive value chains.
 - New technology solutions for portable energy sources outperforming alternative technologies e.g. in terms of energy and power density, operational safety, long-term stability, mechanical flexibility, light weight, thin thickness, and low cost that will enable the rapid development of power-demanding smart devices, Internet of Thing (IoT) sensors and wearable electronics.
- **Scope** : Potential added value of 2DMbased energy storage like large energy storage technologies, beyond current Li-ion, for electric power grids/solar farms/wind farms with increased performances in terms of durability, safety, energy density and power density.
- Consortium and targeted actors: not specified
- Add Meeting link to your calendar on September 20th at 10am CEST: [Click here to join the meeting](#)

HORIZON-CL4-2022-DIGITAL-EMERGING-02:

RIA

19: 2D materials-based devices and systems for biomedical applications (RIA)



Open 16/06/22
– 16/11/22



6 mio. – 1
Project



START:

FINISH:

3-4 to 5

- Expected outcome:
 - New technology solutions exploiting the unique properties of 2D materials (2DM) that would reduce cost and increase the efficacy of diagnostics or therapies, or provide new diagnostics or therapies for which there is currently no solution. It would strengthen Europe's industrial position in, early diagnostics, disease prediction and prevention, disease monitoring and reducing hospitalization time.
- **Scope** : Proposals should build on the multi-functionality allowed by 2DMs and demonstrate the advantages of combining e.g. biocompatibility, chemical stability, (bio-)sensing and actuating, and integration with flexible electronic technologies, in addition to versatile surface chemistry (for interface with biology) to allow continuous health monitoring and built-in pharmacological interventions
- Consortium and targeted actors: not specified
- Related efforts: Graphene Flagship initiative.
- Add Meeting link to your calendar on September 20th at 11am CEST : [Click here to join the meeting](#)

HORIZON-CL4-2022-DIGITAL-EMERGING-02:

20: 2D-material-based composites, coatings and foams (RIA)

RIA

3DP-
related
call



Open 16/06/22
– 16/11/22



9 mio. – 1
Project



START:

FINISH:

3-4 to 5

- Expected outcome:
 - new multifunctional recyclable materials enabling solutions to environmental challenges.
- **Scope** : Proposals should address 2D materials (2DM) composites, aero-gels and foams that can bring the full nanoscopic functionality of 2DM from nano- and microscale into the macroscopic world.
- Consortium and targeted actors: not specified
- Related efforts: Graphene Flagship initiative
- Add Meeting link to your calendar on September 20th at 1pm CEST: [Click here to join the meeting](#)

Climate neutral, Circular and Digitised Production

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TWIN TRANSITION 2023-2024

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Research and Innovation Actions



HORIZON-CL4-2024-TWIN TRANSITION-01:

RIA

01: Bio-intelligent manufacturing industries (Made in Europe) (RIA)



Open TBD



4-5 mio. –
5 Projects



START:

FINISH:

4 to 6

- **Expected outcome:**
 - Access to bio-intelligent production technologies;
 - Technological advances and improvements in sustainability (in particular SDGs 11, 12 and 13) arising from the integration of bio-intelligent principles, functions, structures and technologies in manufacturing;
 - Substitution of raw materials by bio-based materials, or implementation of bio-based or bio-intelligent manufacturing operations, and business models leading to regenerative production.
- **Scope :** The biological transformation of industry is a pioneering frontier that European and Associated Countries industries can harness to achieve their Green Deal Objectives while advancing production efficiency and competitive advantage.
- **Related efforts:** Made in Europe
- Add Meeting link to your calendar on September 20th at 2pm CEST: [Click here to join the meeting](#)

HORIZON-CL4-2023-TWIN TRANSITION-01:

IA

02: High-precision OR complex product manufacturing – potentially including the use of photonics
(Made in Europe and Photonics Partnerships) (IA)



Open TBD



5-6 mio. –
8 Projects



START:

FINISH:

5 to 7

Expected outcome:

- High-precision manufacturing and/or manufacturing of products with complex geometries,
- Highly resilient and flexible production lines, enabling highly customised products down to lot size one, across a wide range of markets, and ensuring strategic autonomy for the manufacturing industry of the Union And Associated Countries.
- Significant reductions in the use of materials, waste, defects and energy consumption.
- Fostering the competitiveness of the European manufacturing industry, in general and (in the relevant projects) in the field of laser machine tools and within the laser markets in particular.

- **Scope:** Products are increasingly complex, e.g. geometries, structures, embedded and structural electronics, micro- and nano-features or advanced and hybrid materials. Further constraints arise from new requirements of sustainability in production processes (resource and energy efficiency). In particular components and products have to be manufactured anticipating the fact that they would be disassembled, re-used, or re-manufactured or recycled.

- **Related efforts:** Made in Europe and Photonics

- Add Meeting link to your calendar on September 20th at 3pm CEST: [Click here to join the meeting](#)

HORIZON-CL4-2023-TWIN TRANSITION-01:

RIA

03: Manufacturing as a Service: Customised production and services on demand, addressing customer needs and decentralisation (RIA)



Open TBD



5-7 mio. –
7 Projects



START:

FINISH:

4 to 6

- Expected outcome:
 - Availability of low-cost, industrial-grade technologies allowing to broaden the categories of products which can be custom-built on demand, at a price competitive with mass-manufactured products.
 - Integration of automation technologies allowing the flexible and distributed use of decentralised manufacturing and remanufacturing facilities, with minimal setup time and increased autonomy of systems and humans, reducing the required investments for manufacturers and the waste and emissions due to mass manufacturing and logistics.
 - Building customer-driven value networks, through technologies and models for collaborative product-service engineering and manufacturing.
 - Easy access to flexible and decentralised manufacturing and remanufacturing capacities, especially for SMEs.
- **Scope**: This topic aims at developing and integrating the technologies needed to make MaaS attractive under both technical and business perspectives, in the specific context of mass customised production. The high potential impact on the environmental, societal and business sustainability of manufacturing is due to the reduction of waste, the optimisation of logistics aspects, and the possibility to use state-of-the-art sustainable facilities for manufacturing and remanufacturing with limited upfront investments.
- Related efforts: Made in Europe
- Add Meeting link to your calendar on September 20th at 4pm CEST: [Click here to join the meeting](#)

HORIZON-CL4-2023-TWIN TRANSITION-01:

IA

04: Factory-level and value chain approaches for remanufacturing (Made in Europe Partnership) (IA)



Deadline 20
APR 2023



5-7 mio. –
5 Projects



START:

FINISH:

5 to 7

- **Expected outcome:**
 - Suitably scaled green and digital remanufacturing technologies that support circular value chains in industrial ecosystems;
 - Remanufacturing of both components and products towards full circularity while retaining value or functions of components;
 - Skills and education capabilities for remanufacturing.
- **Scope:** Remanufacturing technologies at the factory level and their integration into circular value chains, including the streamlining data to support remanufacturing. Remanufacturing should not be focused only on the reuse of raw materials but should be aimed at reusing and upscaling components, valorising them and retaining or upgrading their functionality. Components can be updated with new technology and be improved beyond their initial functionality.
- **Related efforts:** European Partnership Made in Europe
- **Add Meeting link to your calendar on September 22nd at 9am CEST: [Click here to join the meeting](#)**

HORIZON-CL4-2023-TWIN TRANSITION-01:

RIA

07: Achieving resiliency in value networks through modelling and Manufacturing as a Service. (RIA)



Deadline 20
APR 2023



4-6 mio. –
6 Projects



START:

FINISH:

3 to 6

Expected outcome:

- Availability of reliable models, simulators, digital twins, decision making and planning technologies for specific value networks, providing timely scoreboard views and enabling a better understanding of the impact of unforeseen events on manufacturing and industrial production.
- Availability of technologies to swiftly adapt logistics and production to varying external conditions, improving the resilience of the industrial systems and value chains, and the sustainability of the entire production process.
- Smart manufacturing networks that are resilient and capable of self-adaptation in response to external threats.

- **Scope :** This topic approaches MaaS from the value network perspective, aiming at exploiting the intrinsic flexibility and resilience provided by the possibility to use distributed and programmable resources on demand, under real-world conditions characterised by high volatility of the supply, the market requirements and the external constraints.

- **Related efforts:** European Partnership Made in Europe

- Add Meeting link to your calendar on September 22nd at 10am CEST: [Click here to join the meeting](#)

HORIZON-CL4-2023-TWIN TRANSITION-01:

RIA

31: Energy efficiency breakthroughs in the process industries (Processes4Planet partnership) (RIA)



Deadline 20
APR 2023



8-10 mio. –
3 Projects



START:

FINISH:

4 to 6

Expected outcome:

- Increase the energy efficiency of energy intensive industrial processes by reducing energy use by at least 30% or higher depending on the sector and the process as compared to current state of the art;
- Enable the techno-economic feasibility of novel technologies and processes, validated and demonstrated at suitable scale against state of the art of industrial processes;
- Enable the potential of an increased use of renewable energy;
- Contribute to achieving EU climate neutrality goal and becoming independent from fossil fuel and fossil fuel imports.

- **Scope:** To decarbonise the energy-intensive industries both, the availability of affordable renewable energy, and the increase of the industrial processes energy efficiency, will be needed. Today's energy efficiency improvements in conventional plants are about 1-2% annually. The use of digital technologies in process optimisation has the potential to further reduce this energy demand.

- **Related efforts:** European Partnership Processes4Planet

- Add Meeting link to your calendar on September 22nd at 11am CEST: [Click here to join the meeting](#)

HORIZON-CL4-2024-TWIN TRANSITION-01:

RIA

41: Breakthroughs to improve process industry resource efficiency (Processes4Planet partnership) (RIA)



Open TBD

DL 17 APR 2024



10-12 mio.
– 2 Projects



START:

FINISH:

4 to 6

- Expected outcome:
 - Achieve a step change in the process industry's green transformation by improving by at least 30 % the industrial processes resource efficiency compared to the state of the art;
 - Prove the techno-economic feasibility of novel technologies and processes, demonstrated and validated at suitable scale against current industrial processes to produce the same products;
 - Overall positive environmental and if relevant health and safety impact demonstrated;
 - Increase the competitiveness and resilience of the European process industry.
- **Scope :** Process industries will greatly benefit from radically new approaches that will lead to a much higher resource efficiency (including higher selectivity), producing less low-value by-products and waste and enabling to cope with higher variability of feedstock. To reach ambitious targets regarding resource efficiency, disruptive process technologies must be developed in addition to process efficiency options for existing technologies.
- Consortium and targeted actors: not specified
- Related efforts: Processes4Planet
- Add Meeting link to your calendar on September 21st at 9am CEST: [Click here to join the meeting](#)

HORIZON-CL4-2023-TWIN TRANSITION-01:

IA

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)



Open TBD
DL 20 APR 2023



4-6 mio. –
3 Projects



START:

FINISH:

5 to 7

Expected outcome:

- Innovative or improved melting processes for next-generation clean steel production,
- Integration of next generation melting technologies into an existing and optimised steelwork,
- Enhance the use of iron-bearing feedstock intermediate products with variable content of carbon and variable metallisation, including low-value iron-based sources. (e.g., DRI, recovered by-products) in melting processes.

■ **Scope :** Reduction of fossil fuel and reductant used in BF-BOF and EAF/DR-EAF steel production

■ **Consortium and targeted actors:** not specified

■ **Related efforts:** European Partnership on Clean Steel

■ Add Meeting link to your calendar on September 21st at 10am CEST: [Click here to join the meeting](#)

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

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SPACE 2023

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**Research and Innovation
Actions**



HORIZON-CL4-2023-SPACE-01:

RIA

21: Low cost high thrust propulsion for European strategic space launchers - technologies maturation including ground system tests (RIA)



22 DEC 2022 –
28 MAR 2023



20 mio. – 1
Project



3 to 7

- Expected outcome:
 - Innovation acceleration of enabling technologies (maturing, prototyping, on ground tests)
 - Selection of most promising technologies for cost-reduction possibilities in the current European launchers
 - Matured technologies up to TRL 5-6 by 2025, including prototyping and on ground tests at subsystem level
 - Cost reduction investigation and demonstration.

- **Scope :** Cost reduction and improving flexibility of European launch systems are the main challenges in order to foster European industry competitiveness on the global market. The propulsion systems represent a significant part of launch system costs. It is necessary to mature new or optimised low cost effective (lower number of parts, better operability), high performance (high thrust to weight ratio, high specific impulse) and green propulsion concepts, technologies and propellants for high thrust engines.

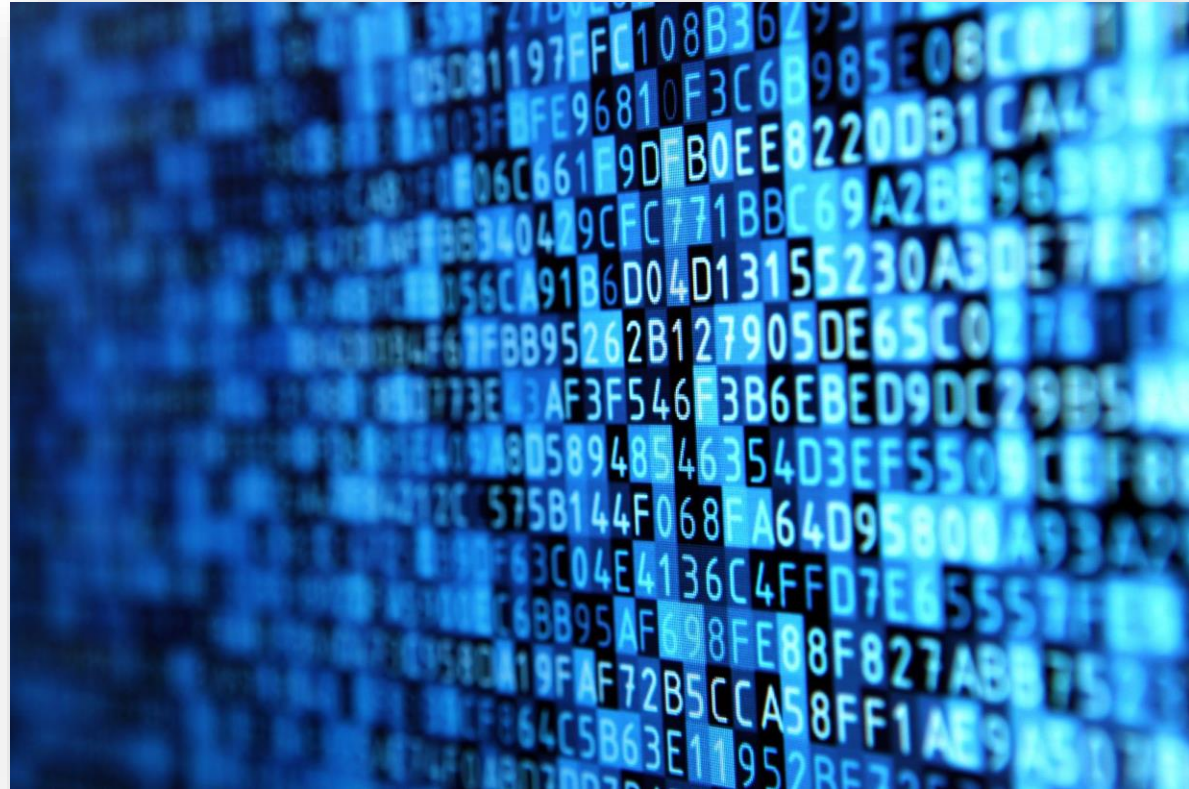
- Consortium and targeted actors: xxx

- Related efforts: /

- Add Meeting link to your calendar on September 21st at 11am CEST: [Click here to join the meeting](#)

Increased Autonomy in Key Strategic Value Chains for Resilient Industry

- **RESILIENCE 2023**
- **Coordination and Support Action**



HORIZON-CL4-2023-RESILIENCE-01:

CSA

41: 'Innovate to transform' support for SME's sustainability transition (CSA)



Open TBD



5 mio. – 2
Project



START:

FINISH:

n/a

- Expected outcome:
 - Support objectives of the European Green Deal and of the EU SME Strategy for a sustainable and digital Europe;
 - Increased resilience of SMEs, by fostering technological and social innovation in SMEs to support their transition to more sustainable business models and more resource-efficient and circular processes and infrastructures;
 - Increased competitive sustainability of SMEs through the uptake of advanced technologies;
 - Stronger innovation support ecosystems supporting the green, social and economic transition of SMEs, by leveraging synergies between existing EU networks and SME support initiatives.
- **Scope:** Achieving European Green Deal objectives, and notably a climate neutral and resource efficient economy, requires the full mobilisation of SMEs. The COVID-19 pandemic has also led to companies redesigning their supply chains and facing a new industrial revolution, brought on by a new generation of advanced technologies , which are underpinning the potential for competitive sustainability of SMEs.
- Consortium and targeted actors: not specified
- Add Meeting link to your calendar on September 21st at 1pm CEST: [Click here to join the meeting](#)

HORIZON-CL4-2023-RESILIENCE-01:

CSA

42: Boosting generation and diffusion of advanced technologies in SMEs based on a supply chain model (CSA)



Open TBD

DL 20 APR 2023



2-3 mio. –
4 Project



FINISH:

n/a

Expected outcome:

- Build a model for each industrial ecosystem to identify disruptions and technological opportunities for the uptake of advanced technologies in a supply chain;
- Alert on current disruptions and identify potential future disruptions;
- Identify potential alternate suppliers of critical advanced technologies;
- Launch one pilot project per each industrial ecosystem focused on building alliances among traditional and tech-savvy SMEs through industrial cluster organisations
- Explore concrete collaboration opportunities between different types of EU businesses, particularly tech-savvy SMEs and traditional SMEs;
- Increase the adoption of advanced technologies in traditional SMEs and help EU tech-savvy SMEs that developed critical technology applications to expand their market potential in the EU.

- **Scope :** All the EU industrial ecosystems should adapt to the post-crisis economic environment, with new consumer and industrial demand, changed competition and new resilience and sustainability objectives. This adaptation will be particularly challenging for SMEs.

- **Consortium and targeted actors:** not specified

- **Related efforts:** /

- Add Meeting link to your calendar on September 21st at 2pm CEST: [Click here to join the meeting](#)

Next steps

1. The Online Spreadsheet to indicate interest is available [here](#) (distinction is made between former EOIs and new ones)
 - One Sheet per opportunity
 - Please express interests/needs (incl. beyond AM!)
2. Please interact between interested partners