PROVA SCRITTA 1 (Estratta)

Un docente del Politecnico di Milano, che non ha mai partecipato a bandi Horizon Europe, è interessato a presentare una proposta progettuale in qualità di coordinatore nell'ambito del bando in allegato. Il docente si rivolge al Servizio Ricerca dell'Ateneo per ricevere supporto nell'interpretazione del bando e nella presentazione della proposta

Il/la candidato/a è invitato a:

- redigere una email sintetica rivolta al docente, contenente gli elementi essenziali del bando allegato e i suggerimenti sui principali documenti di riferimento utili per la preparazione della proposta progettuale.
- preparare una presentazione in PowerPoint che illustri gli aspetti fondamentali del bando descrivendo le peculiarità del "type of action" previsto -evidenziandone le differenze rispetto ad altre tipologie di azioni finanziate dalla Commissione Europea- e fornendo indicazioni operative su come il docente dovrebbe organizzare le attività per la presentazione della proposta.

BANDO

HORIZON-CL4-2025-04-DIGITAL-EMERGING-05: Soft Robotics for Advanced physical capabilities (IA) (AI/Data/Robotics Partnership)

Call: DIGITAL - HADEA	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 10.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 20.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to start at TRL 4 and achieve TRL 7 by the end of the project

Expected Outcome: Increased exploitation of novel materials, design methods, and control techniques for soft robotics, enabling the creation of inherently safe and versatile robotic systems with applications in various industries, including healthcare, maintenance, manufacturing, and transportation.

Scope: Soft robotics represents an important avenue to advance robotics, particularly for enhancing safety and physical interaction. Its potential lies in creating systems with intrinsic and functional safety, capable of securely interacting with humans across various scenarios. By using compliant designs, these systems overcome the limitations of rigid robotic systems, such as limited adaptability and reduced safety around humans. Novel design methods, the use of smart materials, deformable physical architectures, and bioinspired approaches are key to improving robotic performance. However, significant challenges remain in learning, modelling, simulation, control, actuation, sensing, and the integration of soft electronics.

To address this, proposals should focus on exploiting novel materials and design methods for non-rigid structures, along with advanced control techniques for soft robotic systems.

Proposals should cover one or more of the following areas:

- Exploitation of novel materials suited to developing robotic systems, both as the main structure and of manipulators and end effectors.
- Design methods for non-rigid structures and the means to accurate and sense position where this may no longer involve fixed rotational or linear links
- Control methods for structures built from novel and soft materials or for structures that emulate rigid structures using soft materials.

The proposals should include at least three different demonstrators from different sectors that clearly show the advantage of soft robotics in the context of some chosen application scenarios.

All proposals are expected to incorporate mechanisms for assessing and demonstrating progress, including qualitative and quantitative KPIs, benchmarking, and progress monitoring. When possible, proposals should build on and reuse public results from relevant previous funded actions. Communicable results should be shared with the European R&D community through the AI-on-demand platform, and if necessary, other relevant digital resource platforms to bolster the European AI, Data, and Robotics ecosystem by disseminating results and best practices.

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

PROVA SCRITTA 2

Un docente del Politecnico di Milano, che non ha mai partecipato a bandi Horizon Europe, è interessato a presentare una proposta progettuale in qualità di coordinatore nell'ambito del bando in allegato. Il docente si rivolge al Servizio Ricerca dell'Ateneo per ricevere supporto nell'interpretazione del bando e nella presentazione della proposta.

Il/la candidato/a è invitato a:

- redigere una email sintetica rivolta al docente, contenente gli elementi essenziali del bando allegato e i suggerimenti sui principali documenti di riferimento utili per la preparazione della proposta progettuale;
- preparare una presentazione in PowerPoint che illustri gli aspetti fondamentali del bando descrivendo le peculiarità del "type of action" previsto -evidenziandone le differenze rispetto ad altre tipologie di azioni finanziate dalla Commissione Europea- e fornendo indicazioni operative su come il docente dovrebbe organizzare le attività per la presentazione della proposta.

BANDO

HORIZON-CL5-2025-03-Two-Stage-D5-09: Next generation aircraft autonomy technologies for cockpit / pilot assistance applications

Call: Cluster 5 Call 03-2025 (2-stage) (WP 2025)	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 3.50 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 7.00 million.
Type of Action	Research and Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 2-4 by the end of the project – see General Annex B. Activities may start at any TRL.
Legal and financial set-up of the Grant Agreements	Eligible costs will take the form of a lump sum as defined in the Decision of 7 July 2021 authorising the use of lump sum contributions under the Horizon Europe Programme.

Expected Outcome: Project results should contribute to the European civil aircraft cockpit technology roadmaps on crew assistance/automation/autonomy, with focus to next generation aircraft autonomy technologies for cockpit / pilot assistance applications.

Project results are expected to contribute to at least two of the following expected outcomes:

- Increasing safety in cockpits, by providing to the crew's assistance new systems or functionalities. with new capabilities for new aircraft platforms, new Human Machine Interface concepts and technologies.;

- Contribution to the roadmap of cockpits digitalisation and autonomy, by conceiving new cockpit capabilities, allowing an enhanced Human-System Relation (new ways for the crews to interact or collaborate with the cockpit). Technological breakthrough could bring to future cockpits the development potential necessary to take up the challenges of the next decades;

- Increased efficiency of cockpits performances: reduction of size, weight and power consumption (SWaP) of systems and equipment, reduced total lifecycle costs, integration levels by reduced production times and, first-time-right delivery.

Scope: Next generation aircrafts will be even more digital and automated, with more interactive and automated cockpits. This will be even more reliant on automation evolution and it is expected to mitigate an always-increased complexity of aircraft systems and operations, ensuring safe and efficient operations. However, automation is also prone to significant errors when misused or misunderstood, especially if this is combined with new aircraft platforms (incl. new systems/capabilities) or new types of operations.

The projects should develop new technology bricks in line with the aircraft concepts proposed in the updated Horizon Europe Clean Aviation Strategic Research and Innovation Agenda and possibly exploit lessons learned from the H2020-CS2 Large Aircraft Disruptive Cockpit Demonstrator. Synergies may also be sought with Horizon Europe SESAR Single Person Operations projects.

The technology bricks should be aligned with the needs of future aircraft generations and operations, new requirements, and cockpit philosophy of European aircraft integrators for the next generations of aircrafts, while they should be cyber-resilient and controlled by a single pilot and without the assistance of an on-board human co-pilot. Development of simulation tools, use of artificial intelligence models, human factors, and cost-benefit analysis (CBA) of various technical solutions is within the scope of the topic. Interfacing with the European Union Aviation Safety agency (EASA) on safety and new testing and certification processes as well as alignment with the EASA AI roadmap should be considered, if applicable.

The focus is on development of new technologies up to TRL 4, rather than on integration and demonstration.

PROVA SCRITTA 3

Una docente del Politecnico di Milano, che non ha mai partecipato a bandi Horizon Europe, è interessata a presentare una proposta progettuale in qualità di coordinatore nell'ambito del bando in allegato. La docente si rivolge al Servizio Ricerca dell'Ateneo per ricevere supporto nell'interpretazione del bando e nella presentazione della proposta.

Il/la candidato/a è invitato a:

- redigere una email sintetica rivolta alla docente, contenente gli elementi essenziali del bando allegato e i suggerimenti sui principali documenti di riferimento utili per la preparazione della proposta progettuale;
- preparare una presentazione in PowerPoint che illustri gli aspetti fondamentali del bando descrivendo le peculiarità del "type of action" previsto - evidenziandone le differenze rispetto ad altre tipologie di azioni finanziate dalla Commissione Europea- e fornendo indicazioni operative su come la docente dovrebbe organizzare le attività per la presentazione della proposta.

BANDO

HORIZON-CL5-2025-02-D3-03: Novel approaches to geothermal resources development

Call: Cluster 5 Call 02-2025 (WP 2025)	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 10.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 20.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 6-7 by the end of the project – see General Annex B. Activities may start at any TRL.

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

- Developers and energy providers benefit from de-risking and cost reduction of geothermal resource development;
- Citizens benefit from energy efficient, sustainable, generation of electricity, direct heat, and/or heating and cooling from geothermal resources in a wide range of geological settings;
- Technology leadership, competitiveness, and technology export potential of European industry in the geothermal energy supply chain are increased;
- The technological innovation is environmentally sound, aligned with societal values, norms and behavioural aspects of end users and actors across the whole geothermal value chain, improving energy justice and citizenship.

Scope: Proposals should focus on the demonstration of innovative approaches to resource development in: (i) the area of shallow & low/mid enthalpy geothermal (0-500 meter-depth and temperature below 150ºC) and/or (ii) in the area of deep & high enthalpy geothermal (beyond 500 meter-depth and temperature above 150ºC). Proposals should also expressly identify whether they are addressing the area of (i) shallow geothermal; (ii) deep geothermal; or (iii) both shallow and deep geothermal.

Drilling and subsurface engineering account for a large part of the costs of geothermal projects, and on-field project development contains significant risks due to inherent geological uncertainties. Reducing costs upfront, improving performance, estimating uncertainty, and reducing risk can therefore boost the geothermal capacity deployment rate.

The scope covers advances beyond the state of the art in one/several of the following points:

- subsurface engineering;
- well design, drilling and completion;
- reservoir characterisation and development planning.

Proposals are expected to reduce project development time while ensuring safety of operations and adaptation to specific geothermal environments (including offshore), constraining and quantifying geological uncertainties, reducing field development and seismic risks.

The project must include a clear go/no-go milestone ahead of entering the demonstration phase of the project. Before this go/no-go milestone, delivery of the detailed engineering plans, a techno-economic assessment, and all needed permits for the demonstrator should be foreseen.

Environmental impact of the proposal should be assessed, and mitigation measures considered.

Where relevant, the project is expected to follow FAIR data principles and GDPR-compliant data sharing/access good practices developed by the European research infrastructures.

PROVA 1

Il/la candidato/a descriva le differenze e le caratteristiche degli schemi di finanziamento Horizon Europe "lump sum" rispetto a quelli a "costi reali" e l'impatto che i due schemi hanno rispetto alla preparazione di una proposta.

PROVA 2

Il/la candidato/a descriva gli elementi principali di un piano di disseminazione e la differenza rispetto al piano di sfruttamento dei risultati in un progetto finanziato dalla Commissione Europea.

PROVA 3

Il/la candidato/a indichi la differenza tra il Grant Agreement di Horizon Europe e il Consortium Agreement e descriva le caratteristiche di entrambi.

PROVA 4

Il/la candidato/a descriva i criteri e il processo di valutazione delle proposte Horizon Europe del secondo pilastro, inclusa la fase di individuazione degli esperti valutatori.

PROVA 5

Il/la candidato/a descriva le "partnership europee" nell'ambito di Horizon Europe ne indichi le caratteristiche e degli esempi concreti.

PROVA 6

Il/la candidato/a descriva i principali compiti e le responsabilità del coordinatore di una proposta progettuale europea, degli altri partecipanti incluse le parti terze.