HORIZON-HLTH-2027-03-TOOL-08: Towards the next generation of frontier Artificial Intelligence models for healthcare

Call: Cluster 1 - Health (Single stage - 2027/2)	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of around EUR 2.90 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 2.90 million.
Type of Action	Coordination and Support Actions
Eligibility conditions	The conditions are described in General Annex B. The following exceptions apply: In order to achieve the expected outcomes, and safeguard the Union's strategic assets, interests, autonomy, or security, it is important to avoid a situation of technological dependency on a non-EU source, in a global context that requires the EU to take action to build on its strengths, and to carefully assess and address any strategic weaknesses, vulnerabilities and high-risk dependencies which put at risk the attainment of its ambitions. For this reason, participation is limited to legal entities established in Member States and Associated Countries. Proposals including entities established in countries outside the scope specified in the topic will be ineligible. For the duly justified and exceptional reasons listed in the paragraph above, in order to guarantee the protection of the strategic interests of the Union and its Member States, entities established in an eligible country listed above, but which are directly or indirectly controlled by a non-eligible country or by a non-eligible country entity, may not participate in the action unless it can be demonstrated, by means of guarantees positively assessed by their eligible country of establishment, that their participation to the action would not negatively impact the Union's strategic assets, interests, autonomy, or security. Entities established in an eligible country, but which are directly or indirectly controlled by China or by a legal entity established in China cannot submit guarantees.[418]

[418] The guarantees shall in particular substantiate that, for the purpose of the action, measures are in place to ensure that: a) control over the applicant legal entity is not exercised in a manner that retrains or restricts its ability to carry out the action and to deliver results, that imposes restrictions concerning its infrastructure, facilities, assets, resources, intellectual property or know-how needed for the purpose of the action, or that undermines its capabilities and standards necessary to carry out the action; b) access

	If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).
Award criteria	The criteria are described in General Annex D. The following exceptions apply: The thresholds for each criterion will be 4 (Excellence), 4 (Impact) and 4 (Implementation). The cumulative threshold will be 12.
Legal and financial set-up of the Grant Agreements	The rules are described in General Annex G. The following exceptions apply: 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 – the Framework Programme for Research and Innovation (2021-2027) – and in actions under the Research and Training Programme of the European Atomic Energy Community (2021-2025) [419].

Expected Outcome: This topic aims at supporting activities that are enabling or contributing to one or several expected impacts of destination "Developing and using new tools, technologies and digital solutions for a healthy society". To that end, proposals under this topic should aim to deliver results that are directed at, tailored towards and contributing to all the following expected outcomes:

- Researchers and innovators benefit from an improved understanding of how to develop and use the next generation of frontier Artificial Intelligence (AI) models for healthcare, including how to leverage AI Factories and how to combine and expand the capabilities of existing foundation models towards inclusive and personalised medicine.

- Researchers and innovators benefit from an improved understanding of how to leverage highly heterogeneous and multimodal health data spanning a range of anatomical scales (i.e. the micro to the macro level).

by a non-eligible country or by a non-eligible country entity to sensitive information relating to the action is prevented; and the employees or other persons involved in the action have a national security clearance issued by an eligible country, where appropriate; c) ownership of the intellectual property arising from, and the results of, the action remain within the recipient during and after completion of the action, are not subject to control or restrictions by non-eligible countries or non-eligible country entity, and are not exported outside the eligible countries, nor is access to them from outside the eligible countries granted, without the approval of the eligible country in which the legal entity is established.

419 This decision is available on the Funding and Tenders Portal, in the reference documents section for Horizon Europe, under 'Simplified costs decisions' or through this link: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/ls-decision_he_en.pdf

- Multidisciplinary stakeholders have access to a collaboratively created roadmap for developing the next generation of frontier AI models for healthcare.

Scope: The AI Continent Action Plan[420] identifies the health sector, encompassing life sciences, medical devices and healthcare delivery, as one of the key strategic sectors. The action will contribute to making European life sciences[421] and healthcare more impactful and productive by fostering the full integration of advanced AI in the health sector and biomedical research, along the objectives of the AI in Science strategy[422] and Apply AI strategy[423].

Healthcare typically involves the combining of multimodal data, ranging from electronic health records through imaging and laboratory to molecular and omics data. This information combination is performed by specialists and is often challenging towards optimised patient care. In Europe, the growing amount of accessible multimodal health data, including via the forthcoming European Health Data Space (EHDS)[424], combined with the increasing availability of high-performance computing facilities (e.g. AI Factories), presents a unique opportunity to develop the next generation of frontier AI models for healthcare. This action anticipates and operationalises the use of such federated infrastructures for research and innovation. Moreover, regulations such as the EHDS regulation and AI Act[425] steer the direction into building an ecosystem fostering ethical and safe innovation on AI in healthcare.

AI models are becoming increasingly complex and able to tackle increasingly challenging tasks. This topic will lay the foundation for the development of the next generation of frontier AI models, paving the way for new, advanced AI-powered solutions to increase efficiency and efficacy in the health sector towards improved patient outcomes. It will leverage results, methodologies, data etc. of other relevant EU-funded projects.

Proposals should include all the following coordination and support activities, ensuring multidisciplinary approaches and a broad representation of stakeholders in the consortium (e.g. healthcare professionals, patients, biomedical scientists, AI developers, data engineers, ethics experts):

- Community building: build a large-scale and diverse pan-European community of stakeholders with the multidisciplinary expertise united as required to develop the next generation of frontier AI models for healthcare, with a view to leveraging as a community the potential of AI Factories. Where relevant, this should build on and strengthen existing

420 https://digital-strategy.ec.europa.eu/en/library/ai-continent-action-plan
421 https://research-and-innovation.ec.europa.eu/strategy/strategy-research-and-innovation/jobs-and-economy/towards-strategy-european-life-sciences_en; https://ec.europa.eu/commission/presscorner/detail/en/ip_25_1686
422 https://research-and-innovation.ec.europa.eu/research-area/industrial-research-and-innovation/artificial-intelligence-ai-science_en
423 https://digital-strategy.ec.europa.eu/en/consultations/commission-launches-public-consultation-and-call-evidence-apply-ai-strategy
424 https://health.ec.europa.eu/ehealth-digital-health-and-care/european-health-data-space-regulation-ehds_en
425 https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai, https://eur-lex.europa.eu/eli/reg/2024/1689/oj

EU-funded communities and networks, and could pave the way for a formalised long-term collaboration under one of the available EU instruments.

- Roadmap creation: review previous research to identify the most promising AI models and model development approaches. In addition, risk assess and review evidence on safety and efficacy of existing AI models with reference to the AI Act, related regulatory provisions (including any jurisprudence) and ethical and security considerations, so that frontier AI model development can proceed on a well-informed basis. Finally, create a roadmap for developing the next generation of frontier AI models.

- Dataset identification, curation, expansion and use: i) identification: identify the most suitable existing datasets for the development of frontier AI models for healthcare, ii) curation: identify how to validate the datasets, ensure dataset interoperability, and convert datasets into formats suitable for frontier AI model development, iii) expansion: identify additional datasets and/or annotations required for frontier AI model development, especially to ensure that datasets are representative and iv) use: identify methods and required infrastructure to allow privacy-preserving use and further expansion of the datasets in alignment with and through the EHDS.

- Frontier AI model preparatory activities: mapping approaches for training and evaluating frontier AI models (e.g. approaches to combine foundation models for life sciences and healthcare delivery in order to develop more advanced and multidisciplinary models towards personalised medicine). The approaches should cover all trustworthy AI aspects[426].

This action should take into account the results of other relevant projects on AI in health, in particular in the two GenAI4EU topics HORIZON-HLTH-2025-01-CARE-01: “End user-driven application of Generative Artificial Intelligence models in healthcare (GenAI4EU)” and HORIZON-HLTH-2025-01-TOOL-03: “Leveraging multimodal data to advance Generative Artificial Intelligence applicability in biomedical research (GenAI4EU)”, and leverage the AI Factories and specialised health data infrastructures funded under the Digital Europe Programme[427], biobanks, relevant ERICs[428], as well as the data resources accessible through the EHDS infrastructure starting in 2029, funded under EU4Health Programme (2021-2027)[429].

This topic requires the effective contribution of social sciences and humanities (SSH) disciplines and the inclusion of relevant SSH expertise, in order to produce meaningful and significant effects enhancing the societal impact of the related research activities.

426 https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai
427 https://digital-strategy.ec.europa.eu/en/activities/digital-programme
428 European Research Infrastructure Consortia: https://www.eric-forum.eu/the-eric-landscap
429 https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/eu4health_en