

Towards a vibrant European network of AI excellence centres

a) Research and Innovation Actions (RIA)

As announced in the Communication on Artificial Intelligence for Europe, the Commission will invest in strengthening AI research excellence centres across Europe and facilitate their collaboration and networking. The objective of this action is to develop networks of excellence centres aiming at boosting the research capacity in Europe and the status of Europe as a research powerhouse for AI, and making it attractive for scientists and new talents. This initiative is also expected to contribute to the development of ethical and trustworthy Artificial Intelligence, the trademark for AI “made in Europe”.

Such networks are expected to mobilise researchers to collaborate on key AI topics, to reach critical mass on these topics and to increase the impact of the funding in progressing faster in joined efforts rather than working in isolation, with fragmented and duplicated efforts.

Objectives of the Networks:

- Up to four networks will be selected, focusing on scientific or technological major challenges, with the primary goal to reinforce Europe’s capacity and progress in critical technologies.
- In addition, building on existing efforts by the AI-on-demand platform and in cooperation with the coordination and support action of this topic, these networks will develop mechanisms to spread the latest and most advanced knowledge to all the AI-labs in Europe and prepare the next generation of talent in AI. Such mechanisms will have to be defined in the proposal.

- Another objective is also to develop synergies and cross-fertilization between industry and these networks of excellence centres, in particular through internships of academic staff (at all levels) in industry, or PhD programmes with industry.
- The set of networks will form a common resource and will become shared facility, as a virtual laboratory offering access to knowledge and expertise and attracting the talents. It should become a reference, creating an easy entry point to AI excellence in Europe and should also be instrumental for its visibility.

Composition of the Networks:

- Each network should be driven by leading figures in AI from major excellent research centers, bringing the best scientists distributed all over Europe. They will bring on board the necessary level of expertise and variety of disciplines and profiles to achieve their objectives.
- Industrial participation will be ensured through industrial research teams and also in bringing expertise to identify important technological limitations hampering deployment in industrial context. Such industrial involvement will thus help defining the research priorities of the network and will raise new research questions.
- Each network will have to demonstrate access to the required resources and infrastructure to support R&D, such as data, HPC (central, GPUs, edge computing), storage, robotics equipment, IoT infrastructure, support staff and engineers to develop experiments, etc. All available data sources, including Copernicus data where relevant, should be made use of.

Activities of the Networks: for each of the following activities, the most appropriate mechanisms should be selected and detailed in the proposal:

- In order to structure the activities, the proposals will focus on important scientific or technological challenges with industrial relevance and where Europe will make a difference, either in building on strengths, or strengthening knowledge to fill gaps critical for Europe.
- Based on these challenges, the networks will develop and implement common research agendas. The main vision and roadmap with targets within the projects, as well as methodology to implement and monitor progress will have to be specified in the proposal and can be further developed during the project.
- Progress will be demonstrated in the context of use-cases, also helping to foster industry-academia collaboration.
- Strong links will be developed among the members of the networks, notably through collaborative projects, exchange programmes, or other mechanisms to be defined by the consortia
- The proposals should define mechanisms to foster excellence, to increase efficiency of collaboration, and to develop a vibrant AI network in Europe.
- Each network will disseminate the latest and most advanced knowledge to all the academic and industrial AI laboratories in Europe, and involving them in collaborative projects/exchange programmes. (This could involve projects defined initially or via financial support to third parties[[The task may involve financial support to third parties, in line with the conditions set out in part K of the General Annexes.]][[The use of Financial Support to Third Parties for such activities is optional, up to

consortia to select the most efficient solution to reach this dissemination objective.]], for maximum 20% of the requested EU contribution).

- Each network will develop interactions with the industry (inside the consortium and beyond), in view of triggering new scientific questions and fostering take-up of scientific advances
- Each network will develop collaboration with the relevant Digital innovation Hubs, to disseminate knowledge and tools, and understand their needs.
- Proposals will include common academic/industrial PhD programmes and post-PhD programmes with a focus on industrial challenges. The ambition is to establish a unique and world-recognised brand for a European programme for industrially-oriented PhDs in AI and to keep researchers in Europe after they complete their PhDs.
- These networks should also foster innovation and include mechanisms to exploit new ideas coming out of the network's work (for instance via incubators).
- Overall, each proposal will define mechanisms to become a virtual center of excellence, offering access to knowledge and serve as a reference in their chosen specific field, including activities to ensure visibility.

Technology focus:

Collaborative projects carried out in networks should focus on one or several of the following topics and would involve the necessary competencies available in the network to address these:

- Advances in foundations of AI (e.g.: learning and reasoning approaches) and approaches for trusted AI solutions (including explainable AI, unbiased AI, safety, reliability, verifiability etc.),
- Developing the next generation of intelligent robots,
- Advanced perception or interaction with humans (for human-centered AI) and environments,
- AI at the edge and hardware for AI.

Synergies with the AI-on-Demand platform:

The AI-on-demand platform should serve as the backbone of these networks in:

- Providing tools and algorithms, data, support services, also to the research community;
- Establishing the link to the community at large in order to spread the knowledge and develop collaborations.

The networks will aim at strengthening the AI-on-Demand-platform in enriching its capacity in terms of tools, competencies, services, to make it the reference and quality label for resource in AI. Being the one-stop-shop for AI resource in Europe, the tools, algorithms, resources developed in the networks of excellent centres will be made available to all via the AI-on-Demand platform.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 12 million would allow this area to be addressed appropriately.

Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

b) Coordination and Support Action (CSA)

The coordination and support action will help develop synergies and exchange between the selected projects, and with other relevant projects, such as the AI-on-demand platform, and the community at large, both academic and industrial. It will support the running projects in allowing economies of scales regarding common activities run by the individual networks (e.g.: organization of events, logistics support for calls for FSTEP, exchange mechanisms among labs, etc.), exchanges of best practices to reinforce and optimize cooperation, etc.

It is also expected to support the RIA projects in their dissemination activities towards industry, users, and citizens. Diversity and gender aspects should be addressed, when relevant.

In addition, due to the importance of equipping the professionals with the right skills in order to maximise the benefits offered by AI-based system, this action will support the academia, in cooperation with industry, via organisation of workshops, and other appropriate approaches, to identify AI courses and modules that could be integrated in non-ICT education master programmes, and corresponding mechanisms to foster such integration.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 2 million would allow this area to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

To ensure European strategic autonomy in such critical technology as AI, underpinning most of our future professional and private activities, with huge potential socio-economic impact, it is essential to reinforce and build on Europe's assets in AI, including its world-class researcher community, in order to stay at the forefront of AI developments.

As stated in the communication from the European Commission on Artificial Intelligence for Europe and the coordinated action plan between the European Commission and the Member States, while Europe has undeniable strengths with its many leading research centres, efforts are scattered. Therefore joining forces will be crucial to be competitive at international level. Europe has to scale up existing research capacities and reach a critical mass through tighter networks of European AI excellence centres. The objective is to foster cooperation among the best research teams in Europe, joining forces to tackle more efficiently major scientific and technological challenges in AI hampering deployment of AI-based solutions.

- Make Europe a research powerhouse for AI;
- Increase Europe's attractiveness for scientists, so that it notably becomes the nest for future generations of scientists and breakthrough in AI;
- Ensure Europe's leadership in key strategic research topics,
- Strengthen the AI-on-Demand platform with algorithms, tools solutions developed by the actions funded under this topic;
- Foster mobilization and commitment from the community, including high level experts to contributing to the AI-on-Demand platform, making it the reference resource for European researchers, developers, integrators and users;
- Reinforce Europe's research capacity in AI;
- Pave the way to enrich the education offer in order to equip a broad range of non-ICT professionals with the necessary AI skills, to make the best of this technology.

Last update: 12 April 2024

Permalink: https://cordis.europa.eu/programme/id/H2020_ICT-48-2020

European Union, 2024