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#### 1. INTRODUCTION

This is the third out of four open calls for individual researchers exchange under the ENFIELD¹ (European Lighthouse to Manifest Trustworthy and Green AI) project, co-funded by the European Union. Through the ENFIELD Exchange Scheme open calls and the Financial Support to Third Parties (FSTP) mechanism, the project aims to attract top-level researchers to conduct foundational research activities related to specific scientific/technological challenges in artificial intelligence, contributing to ENFIELD network creation and expansion to European AI labs.

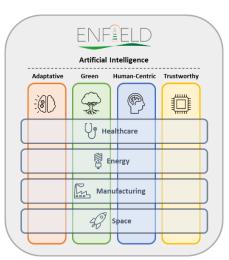
#### 2. BACKGROUND

Artificial Intelligence (AI) is transforming every aspect of modern society offering the potential for inclusive economic growth, societal benefits, and innovative solutions to global challenges. Nonetheless, AI tools can be error-prone, giving rise to concerns about legal liability and the preservation of fundamental human rights. Global leaders have discussed the need to address AI challenges and maximize its benefits and as a result, the European Commission launched important initiatives like HUMANE<sup>2</sup>, TAYLOR<sup>3</sup>, and ELISE<sup>4</sup> to ensure AI becomes more human-centric, safe, transparent, and to reinforce Europe's position in AI and Machine Learning (ML). However, there are certain AI perspectives and application areas that have not been tackled with sufficient attention by the funded Networks of Excellence, despite being of paramount importance to Europe in the present geopolitical and climate change circumstances. Thus, the ENFIELD project is dedicated to developing, maintaining, scaling-up and sustaining a vibrant European network on AI composed of 30 consortium members from 18 countries, including top-level education and research organisations, large scale businesses, SMEs, and public sector representatives jointly addressing critical issues of research and innovation frontiers in this new topic of the European AI Lighthouse.

## 3. OBJECTIVES AND CHALLENGES

# **Objectives**

ENFIELD aims to create a unique European Centre of Excellence that excels in fundamental research in the areas of **Adaptive**, **Green**, **Human-Centric**, and **Trustworthy AI**. These pillars are strategic and of paramount importance to successful AI development, deployment, and acceptance in Europe and will further advance the research within verticals of **Healthcare**, **Energy**, **Manufacturing**, and **Space** (Figure 1). By attracting the best talents, technologies, and resources from worldclass research and industry players in Europe, and by carrying out top-level research activities in synchronisation with industry challenges, the ENFIELD project will contribute to reinforce a competitive EU position in AI and create significant socio-



economic impact for the benefit of European citizens and businesses. Figure 1 - Conceptual view of ENFIELD.

<sup>&</sup>lt;sup>4</sup> https://www.elise-ai.eu/





 $<sup>^{\</sup>rm 1}$  Grant Agreement nº 101120657, funded by the European Union.

<sup>&</sup>lt;sup>2</sup> https://www.humane-ai.eu/about-project/

<sup>&</sup>lt;sup>3</sup> <u>https://tailor-network.eu/</u>



# **Challenges**

The researchers to be funded under ENFIELD project will need to conduct foundational research activities related to specific scientific/technological challenges in at least one of the following areas:

PILLARS			
Challenge	Pillar	Title	Possible Hosting
			Institutions
G-Al.1		Green Al Metrics	UCM, DTI
G-AI.2		Physics-Informed Machine Learning	KNOW, PREDICT
G-AI.3	L <sub>O</sub>	The Policy Landscape for Green AI	KNOW, TELENOR
G-Al.4	Green	Green Generative Language Models	SINTEF, TELENOR
G-AI.5		Energy-Efficient Large Language Models for Sustainable Software Engineering	SINTEF
G-Al.6		Green World Models	SINTEF
G-AI.7		Cooperative Multi-agent Green AI	SINTEF
A-AI.1		Adaptive AI for Environmental Monitoring: Multimodal Data Fusion for Context Aware Deployment	IMT
A-AI.2		Adaptive AI for Multimedia: Learned Compression and Real-Time Applications	IMT
A-AI.3		Adaptive AI on the Edge – Innovations for Resource-Constrained Systems	IMT
A-AI.4	tive	LLM on the Edge	IMT
A-AI.5	Adaptative	Adaptive Al-Powered Digital Twin for Innovating Healthcare Security and Resilience	NRS
A-AI.6	•	Adaptive AI for Generalizable and Multimodal Semantic Reasoning	IMT
A-AI.7		Zero-shot large-scale biomedical entity matching and linking	IMT
A-AI.8		Parameter Efficient Algorithms for Foundation models	TU/e
A-AI.9		Robustness and Generalization in single or multi-modal models	TU/e
HC-AI.1		Interpretability and uncertainty in predictive models	TELENOR
HC-AI.2	Human- Centric	Improving transparency and explainability of web-based AI systems through semi-structured natural language descriptions	TUC
HC-AI.3	Ŧ 9	Explainable AI for Multimodal and Sequential Data Analysis in Physical and Chemical Processes	TU/e
T-AI.1		Security and Robustness of AI systems	NTNU, TELENOR
T-AI.2	<u>&gt;</u>	Privacy and Compliance of AI systems	NTNU, TUC, TELENOR
T-AI.3	ort	Trustworthy ML based scheduling for the energy domain	MAGGIOLI, NTNU
T-AI.4	Trustworthy	AI in Distributed Systems	NTNU, TUC
T-AI.5	ΓĒ	Assessing Trustworthiness of Distributed AI Systems	TUC
T-AI.6		Brain-to-Speech Interface: From Neural Signals to Communication Restoration	BME
T-AI.7		Secure Voice Biometrics with Fake Voice Detection	BME
VERTICALS			
Challenge	Vertical	Title	Possible Hosting Institutions
VS.1		Synthetic dataset generation of foreign object debris on runways and FATOs	BAS
VS.2	Space	Detection of potential water illegal abstractions using Artificial Intelligence and Earth Observation	ECoE
VS.3		Causal Machine Learning model to identify agricultural practices aiding in yield productivity improvement using Earth Observation (EO) data.	ECoE
VM.1	Manufacture	Context-agnostic Computer Vision human detection	POLIMI
VM.2	Manuf	Machine Learning-based stress detection for human operators	POLIMI

Refer to oc3-2025-TES-01\_Catalogue\_of\_Challenges for details about each challenge, including the proposed scientific challenges, research activities and expected results.







#### 4. TIMETABLE

The indicative schedule for the different stages of the selection procedure is as follows:

	TIMETABLE
Call opening	15 February 2025
Deadline for submission	14 April 2025 - 17:00 (CET) – Brussels time
Evaluation	15 April 2025 – 14 May 2025
Information on evaluation results	15 May 2025
Contract signature	30 June 2025
Project execution timeframe	31 May 2026

Another ENFIELD call for proposals is foreseen for summer 2025.

#### 5. AVAILABLE BUDGET

A total budget of 1.100.000€ is allocated by ENFIELD for funding the participation of at least 76 researchers/groups of researchers in Exchange Schemes Open Calls. This third call is expected to fund 19 researchers/groups of researchers<sup>5</sup>.

Successful applicants will receive a **mobility allowance of 2.400€/month**. The maximum grant allocated to each researcher will be 14.400€ (corresponding to 6 month).

All payments will be subject to tax and other reductions according to the laws of all involved countries. **Tax and other reductions are the responsibility of the applicant.** 

### **6. ADMISSIBILITY AND DOCUMENTS**

Proposals must be submitted electronically via <u>LINK</u> (see section 12. How to submit an application). Paper or email submissions are NOT admissible.

Proposals must include a 2-minute video from the applicant presenting themself (or the group of researchers), submitted in English.

Proposals must be submitted in English using the Application Form provided on the submission page.

Proposals must be complete and contain all the requested information in the Application Form.

Additional supporting documents (e.g., bank account validation, etc) will be requested only from selected applicants.

Multiple applications are possible under this call. In these cases, applicants need to submit one application form per project proposal. However, only one proposal can be awarded per applicant.

<sup>&</sup>lt;sup>5</sup> The consortium reserves the right not to award all available funds or to redistribute them between the open calls planned within the project, depending on the applications received and the results of the evaluation.







#### 7. ELIGIBILITY

To be eligible, proposals must be presented by an individual researcher or a group of researchers, meeting the following criteria:

- 1. Researchers must be based in EU Member States or Horizon Europe associated countries.
  - Note: If the selected applicant is a non-EU national and requires a work visa for the mobility period, all associated costs and responsibilities for obtaining the necessary documentation will be the sole responsibility of the applicant.
- 2. Researchers must be employed at academic or research organizations, which are not part of the ENFIELD consortium<sup>6</sup>. Researchers from ENFIELD partner organizations are not eligible.
- 3. Applications need to be submitted by the deadline of the call. Late applications will not be admitted.
- 4. Applications must be submitted in English. Applications submitted in any other language will not be eligible.
- 5. All applications must include a 2-minute video from the applicant presenting themself (or the group of researchers), to be submitted in English. Applications submitted without the video or with a video in any other language will not be eligible.
- 6. Project duration is limited to a minimum of 3 months and a maximum of 6 months.
- 7. PhD candidates need to demonstrate their enrolment in a PhD programme.
- 8. Post-docs or senior researchers need to demonstrate their employment at a university, research centre, or business entity.
- 9. In case of a group of researchers applying, the team needs to be composed by one PhD candidate and one post-doc/senior researcher.
  - Note: The expected outcomes from a group of two researchers are twice those of a single researcher (e.g. two conference papers instead of one), always depending on the expected outcomes of the specific challenge.

# 8. SELECTION CRITERIA

Eligible applications will be evaluated according to four criteria:

- 1. Advanced state of the art: applicants shall demonstrate to what extent their exchange application is beyond the state-of-the-art and describe the unique approach behind it (e.g., novel concepts and methodologies, development between or across disciplines, novel methods and algorithms addressing societal challenges).
- **2. Scientific approach:** applicants must demonstrate the feasibility of the proposed research methodology and working arrangements.
- **3. Dissemination and communication:** applicants must present a credible plan for dissemination and communication activities, which must include methods (e.g., publications, presentations, workshops and/or webinars) and the targeted audiences.
- **4. Technical and creative capacities:** competences and skills of the researcher involved in the proposal; capacity to carry out the activities for the proposed exchange scheme. Track-record in

<sup>&</sup>lt;sup>6</sup> https://www.enfield-project.eu/node/4







scientific publications and similar projects/domain. In case of applications submitted by a group, a statement on the complementarity of researchers is required.

Each criterion will be scored from 0 to 5, following the rationale below:

0	Fail	The proposal fails to address the criterion or cannot be judged due to incomplete or missing information.
1	Poor	The criterion is inadequately addressed or there are serious inherent weaknesses.
2	Fair	The proposal broadly addresses the criterion, but there are significant weaknesses.
3	Good	The proposal addresses the criterion well, but several shortcomings are present.
4	Very Good	The proposal addresses the criterion very well, but a small number of shortcomings are present.
5	Excellent	The proposal successfully addresses all relevant aspects of the criterion. Any shortcomings are minor.

The following thresholds will be considered as criteria:

- Minimum score per criterion: Proposals scoring less than 3 for any criterion will be considered of insufficient quality and rejected.

Proposals that pass the criterion thresholds will be considered for funding. Other proposals will be rejected.

### 9. FINANCIAL PROVISIONS

<u>Project Timeframe</u>: Three to six months period, varying according to the submitted proposal.

<u>Payment Schedule</u>: One-month advance payment (2.400€) with grant signature and then periodic payments, every month, up to 6 months in total, and according to the duration of the submitted proposal. The maximum grant allocated to a researcher will be 14.400€ (corresponding to 6 month).

<u>Contract:</u> Sub-grant agreement will be signed between the selected researcher and the ENFIELD consortium, represented by its coordinator (NTNU), the Open Call Manager (INOVA+) and the Host Organization (depending on the selected application). A model template for the contract can be found here <a href="https://www.enfield-project.eu/oc3\_TES\_2025">https://www.enfield-project.eu/oc3\_TES\_2025</a>.

### **10. VISIBILITY**

Beneficiaries must clearly acknowledge the European Union's contribution in all publications or activities. In this respect, beneficiaries are required to give prominence to the name and emblem of the European Commission on all their publications and activities realised under the co-financed action. Where appropriate, they should also use the ENFIELD emblem and visuals. Guidelines will be provided to the successful applicants.







# 11. PROCESSING OF PERSONAL DATA

The reply to any call for proposals involves the recording and processing of personal data (such as name, e-mail, and address). Such data will be processed pursuant to Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons regarding the processing of personal data and on the free movement of such data. Unless indicated otherwise, the questions and any personal data requested that are required to evaluate the application in accordance with the call for proposal will be processed solely for that purpose by the consortium.

# 12. HOW TO SUBMIT AN APLICATION

Project proposals must be submitted by **14 April 2025 at 17:00 (CET)** by completing the application online: <a href="https://ec.europa.eu/eusurvey/runner/oc3-2025-TES-01">https://ec.europa.eu/eusurvey/runner/oc3-2025-TES-01</a>.

Complete the Application Form and Project Proposal. Applicants can find the template for the Project Proposal here: <a href="https://www.enfield-project.eu/oc3\_TES\_2025">https://www.enfield-project.eu/oc3\_TES\_2025</a>. The template needs to be downloaded, completed, and uploaded in PDF format. The application needs to include a 2-minute video from the applicant presenting him/her (or the group of researchers).

Applicants should submit one Application Form per project proposal. Multiple proposals are allowed but only one project can be awarded per beneficiary. If the beneficiary is a group of researchers, the group representative needs to be the post-doc/senior researcher.

Applicants must rank their preferences from a list of entities available to host grantees in each challenge.

Once the proposal is submitted, you will receive a confirmation e-mail. If you do not receive this confirmation e-mail, it means your proposal has NOT been submitted. If you believe this is due to a fault in the submission system, you should immediately contact enfield.opencall@inova.business, explaining the circumstances and attaching a copy of the proposal (and, if possible, screenshots to show what happened).

Queries about applications can be sent by email to enfield.opencall@inova.business before 10 April 2025. We cannot guarantee that emails will be answered after this date. A FAQ (Frequently Asked Questions) section will be posted on the ENFIELD project website and updated regularly.

All applicants will be notified via email of the results of the evaluation process by **15 May 2025** (indicative date). The results of the funded applications will subsequently be announced via the ENFIELD project's information channels.



