# Value and Impact through Synergy, Interaction and coOperation of Networks of AI Excellence Centres

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# Deliverable D3.2

# Lessons learned FSTP

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Lessons learned FSTP

**Disclaimer**

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| Confidentiality | |
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| Does this report contain **confidential** information? | Yes ☐    No X |
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# Table of Contents

## Executive Summary

This document, "Lessons learned FSTP", is a deliverable of the Work Package 3 "European AI Network of Excellence Centers: strengthening synergies", Task 1.3 "Support to FSTP projects". It collects the lessons learned from the Financial Support to Third Parties (FSTP) activities that have been carried out within the VISION project duration. The document is addressed to VISION Partners and Network of Excellence projects and aims at being a collection of the lessons learned from the activities carried out by the NoEs.

The document is structured as follows:

- Section 1 is the document introduction;
- Section 2 resumes the NoEs planned approach to FSTP activities, as highlighted within D3.1 "Vademecum FSTP" D3.1;
- Section 3 describes the ICT-48's activities towards FSTP, therefore presenting an overview of the Open Calls structure with the achieved results and some best practices;
- Section 4 is focused on the lessons learned, which is the main focus of this document;
- In Section 5, we provide an overview of what will comes next, i.e., the other NoEs' FSTP activities;
- Section 6 draws the conclusions.

It is important to underline that representatives from the ICT-48 AI Network of Excellences were involved and consulted through a survey to collect the needed information to prepare this document. The names of the contributors are:

- For AI4MEdia: F6S – Samuel Almeida, Catarina Reis, and Ellie Shtereva
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- For TAILOR: TU/e – Joaquin Vanschoren

## 1. Introduction

The Financial support to third parties (FSTP), also known as Cascade Funding, is "a Commission mechanism to distribute public funding in order to assist beneficiaries, such as start-ups, scale-ups, SME and/or mid-caps, in the uptake or development of digital innovation."[1] FSTP is therefore considered a crucial tool for Europe's AI community, facilitating its transition to a world-leading position in research, development, and deployment of AI technologies. However, it is not frequently used, and guidelines for its correct use are not detailed.

Therefore, this document aims to provide an overview of the lessons learned from the FSTP Open calls carried out by the ICT-48 NoEs.

The VISION project, a coordination and support action financed by the European Commission, aimed to strengthen the European AI community and accelerate its transition to a world-leading position in research, development, and deployment of AI technologies. This document is a deliverable of the VISION project, which aims to support European AI Network of Excellence Centers (NoEs) in managing Financial Support to Third Parties (FSTP) projects. The objective is to provide an overview of the Call created by the NoEs for the FSTP.

The VISION project has helped in various activities related to FSTP (see chapter 3 for more information), including:

- the preparation and management of open calls,
- the promotion of calls,
- a helpdesk to provide legal advice, financial and accounting guidance,
- and general external support.

Additionally, the VISION project has provided methodological knowledge and competence expertise to ensure compliance with regulations and recommendations. The project also supported the launch of calls, promoting them among partners, and ensuring transparency in the evaluation process.

On deliverable D3.1 "Vademecum FSTP" an entire section was devoted to the definition of a series of templates for Open Calls and a common process for the NoEs to follow.

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[1] https://webgate.ec.europa.eu/funding-tenders-opportunities/pages/viewpage.action?pageId=25559615

## 2. NoEs initial approach to FSTP activities

Within D3.1 "Vademecum FSTP", the NoEs initial approaches regarding FSTP were collected. We consider it beneficial to recall them herewith, before starting with the analysis of what has been done and achieved, and the lessons learned.

### AI4Media initial approach to FSTP activities

AI4Media project aimed to become a Centre of Excellence (CoE) and establish a network of researchers across Europe and beyond. Its focus was on delivering the next generation of core AI advances to serve the media sector, embedding European values of ethical and trustworthy AI in future AI deployments, and reimagining AI as a crucial enabling technology in society and media. Additionally, AI4Media has provided financial support to researchers and the industry towards innovative progress in the AI and media sector. The **AI4Media FSTP programme** aimed to attract and involve researchers and the industry, particularly SMEs, in the project's network and boost cross-border and cross-sector innovations within media sectors. The project planned to launch two open calls, targeting researchers and industry, with the research track attracting innovative ideas and capacity to develop new research on AI for media with the aim to present innovative AI applications for the media sector, either by creating additional value to research results or adopting AI solutions from other sectors. AI4Media did also provide technology and market support to support sub-grantees in achieving higher impact.

**Initial Timing**

- Open Call 1 – Research track and Application track - September 2021
- Open Call 1 projects - February 2022
- Open Call 2 - Research track and Application track - July 2022
- Open Call 2 projects - December 2022

### TAILOR initial approach to FSTP activities

The TAILOR project offered a Connectivity Fund to support AI researchers from all over Europe to visit host institutions within the network or vice versa. 75% of the project's funding, amounting to 1.5 M EUR, was set aside for third parties. The aim of third-party support was to mobilize excellent researchers to collaborate on key AI topics, enable young researchers to gain experience in top European AI labs, unite Europe's uneven AI research community, bring in additional expertise, and reinforce Europe's image as an open, inclusive research powerhouse for AI.

The fund has been awarded through a continuous open call, published widely and adhering to the Horizon 2020 standards with respect to transparency, equal treatment, conflict of interest, and confidentiality.

**Foreseen Timing**

- Assemble initial review committee by 1 Nov, before General Assembly
- Public call online - 15 November
- 3 submission deadlines (yearly)

### HumanE-AI-Net initial approach to FSTP activities

HumanE AI Net had a unique approach to involving third parties, focusing on micro-projects. These micro-projects involved two or more partners working for 1-4 months to produce tangible

outcomes, such as papers, data sets, demos, or tutorials, which were made available to the community through the AI4EU platform. Key requirements included documented cooperation, a topic tied to specific tasks, tangible outcomes, and a short presentation at the end of the project. Micro-projects have been funded directly [they are centred around HumanE-AI-Net partners rather than "third parties" and used project funds], as it was the only ICT-48 NoE that did not use the FSTP mechanism.

## ELISE initial approach to FSTP activities

ELISE planned to support 32 SMEs and startups in developing novel AI-based services or applications to address one of its challenges. The selected companies entered a 6-month Support Program, which provided up to €60,000 (lump sum) for the development of these applications and technical mentors and services from the ELISE network. The ELISE program has focused on projects based on AI applications that address various markets or areas of experimentation.

### 3. VISION support towards FSTP activities

As already mentioned in the introduction, VISION supported the NoEs in their FSTP activities through a series of activities.

The first step has been the preparation of [D3.1 Vademecum FSTP](#) in which a series of rules, principles, directions and procedures were collected in order to support the NoEs with their offered Financial Support to Third Parties (FSTP) activities. This document has been considered the basis for the work to be undertaken by the NoEs for the preparation and management of open calls.

To better support the NoEs, in particular TAILOR and AI4Media (because ELISE was already supported by Fundingbox), and according to the suggestion received at M18 review on the importance of providing logistic support for FSTP to the NoEs, VISION created and kept active a **helpdesk** to provide legal advice, financial and accounting guidance, and general support. The NoEs were able to access the helpdesk simply through email and this ensured a prompt reply to their questions. When the case, a quick call has been scheduled to ensure the maximum clarity.

Another important support granted has been related to the **promotion of Open Calls**. This has been done through the website of VISION and using the project Newsletter with the aim of reaching a broader audience.

## 4. ICT-48's FSTP activities: an overview of the Open Calls structure

### AI4Media

AI4Media carried out **2 Open Calls (OC1 and OC2)** whose main scope was to engage entrepreneurs, companies (e.g., SMEs, mid-caps) and researchers that develop and integrate applied research in the field of AI, to develop new and innovative research and applications for AI for the media sector. The developments had to contribute to the enrichment of the pool of research and technological tools developed within the AI4Media project. The submitted proposals had to be aligned with one of the open call's tracks (Application or Research) and the respective challenges (7 challenges in Open Call #1; 17 challenges in Open Call #2):

- The _Research_ track targeted academia and researchers working in the AI field to increase the value of the AI4Media ecosystem by developing and integrating new research in AI media domains. Projects funded under the Research track ran for 12 months.
- The _Application_ track targeted AI stakeholders such as entrepreneurs, companies (micro-SMEs, SMEs, mid-caps) to submit ideas for innovative AI applications for the media sector by building on the existing research from AI4Media or by adopting AI solutions from other sectors and adapting them to the media sector. Projects funded under the Application track ran for 9 months and applications were expected to reach a minimum TRL of 7 by the end of the project itself.

_Table 1 AI4Media challenges_

| | Research challenges | Application challenges |
|---|---|---|
| **OC1** | • **C1-Rt.** Bio-inspired deep learning<br>• **C2-Rt.** Human-centred interactive explainable AI<br>• **C3-Rt.** Combining deep learning-based computer vision and classic path-planning/control for autonomous UAC cinematography tasks<br>• **C4-Rt.** Innovative solutions for fake news detection in line with fundamental rights and the developing EU regulations | • **C5-At.** Evidence Collection in Digital Media Authentication<br>• **C6-At.** Navigating multi perspectivity in media heritage collections<br>• **C7-At.** Leveraging the power of media archives through Artificial Intelligence |
| **OC2** | • **C1-R** Reinforcement learning and the challenge of generalisation<br>• **C2-R** Evolutionary learning and the challenge of evaluating quality<br>• **C3-R** Scarce data and the cross-media transfer of knowledge<br>• **C4-R** New decentralised collaborative learning paradigms for AI<br>• **C5-R** Quantum Reinforcement Learning for classical data processing<br>• **C6-R** Frugal cross-modal representation for media research<br>• **C7-R** Broadening the spectrum of Interpretable AI<br>• **C8-R** Standardising AI datasets and model creation | • **C1-A** Realising a hybrid AI application in AI4EU Experiments<br>• **C2-A** AI global support to informative content production<br>• **C3-A** New learning methods for music overcoming scarce data<br>• **C4-A** AI for suggesting visually appealing images based on text<br>• **C5-A** Recommender Systems to Support Exploratory Research with Media<br>• **C6-A** AI for automated testing and sound synthesis<br>• **C7-A-OPEN** Open Application Challenge |

Lessons learned FSTP

| | |
|---|---|
| • **C9-R** Novel AI-powered enablers for social media research<br>• **C10-R** Social media alert system to avoid the attention gathering loop<br>• **C11-R** Representative and Inclusive Depictions of AI<br>• **C12-R-OPEN** Open Research Challenge | |

The maximum amount to be allocated per project was 50,000 €. For each open call, the funding available was 500,000 € to fund 10 projects in both tracks: 5 research projects and 5 application projects per call. The total grant requested must represent up to 100% of the total project costs. Activities that were already funded by other grants could not be funded by AI4Media, respecting the principle of no double funding. The allocated funding for each project was disbursed according to three stages of the project implementation: Sprint 1 (25%), Sprint 2 (35%), and Sprint 3 (40%).

**Evaluation Process stages**

- Step 1: Proposal preparation and submission
- Step 2: Eligibility check
- Step 3: External remote evaluation
- Step 4: Interviews
- Step 5: Final ranking and selection
- Step 6: Contract preparation and signature

## TAILOR

TAILOR carried out **92 of the planned 100 Open Calls.** The so-called Connectivity Fund was open to all European AI researchers and was focused on connecting TAILOR and non-TAILOR labs. Two possibilities were offered:

- For *research visits*, the focus was to help young researchers gain experience and worldwide recognition by working in excellent labs (scientific step-up), as well as to bring in expertise from outside the TAILOR network (scientific influx) and/or align different European AI initiatives (scientific alliance).
- *Workshops* had to either facilitate scientific exchange with the worldwide AI community to tackle big challenges in AI or aimed at providing a swift and coordinated reaction to unexpected developments, and to build bridges with other European AI initiatives.

The maximum funding available was 60,000 € max per partner. Individual projects were capped at 15,000 €, although some exceptions were made (e.g., for very large workshops). Proposals were collected via the Easychair platform; all applications submitted within the deadline were evaluated for formal eligibility by the call management. Next, each proposal was reviewed by a member of the scientific board to check for any conflicts of interest in the assignment and to ensure that the proposal came from outside the TAILOR network. All proposals were evaluated according to 5 criteria: AI excellence, scientific track record of the candidate, scientific step-up, and the suitability of the host and activity duration.

In the context of the Connectivity Fund, TAILOR has opted for the following setup:

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- FSTP was offered as a *lump sum*. This means that the recipient had to provide a detailed estimate of the expected costs within the budget requested in the application. This budget needed to be approved by the fund management, which checked whether the cost estimates were adequate for the proposed research visit.
- The recipient was responsible for *keeping track of the expenses* and providing information to the EC in case of an audit. Both actual costs (receipts) or per diems were allowed. The recipient had to ensure that the commission and OLAF could review and audit the third parties about impact and economy.
- The recipient had to file a *report* on the activities and outcomes of the research visit or workshop: a summary of the performed research and findings, papers published, projects written, and any other outcomes.
- 60% of the lump sum were *pre-paid* at the start of the visit, while the remaining 40% have been paid after the report were received and approved.

## ELISE

ELISE carried out **2 Open Calls (OC1 and OC2)** with the aim to fund projects based on AI applications that addressed the development and implementation of technology and systems in at least one of the focus areas (which were based on ELISE/ELLIS research programs). Still, proposals could be considered if they were not related to the focus areas, provided they addressed high-impact societal and economic challenges using machine learning. The focus areas were:



Geometric Deep Learning: graph, group, and gauge convolutions

Robust Machine Learning

Interactive Learning and Interventional Representations

Machine Learning and Computer Vision

Robot Learning: Closing the Reality Gap

Human-centric Machine Learning

Theory, Algorithms, and Computations of Modern Learning Systems

Quantum and physics-based Machine Learning

Natural Intelligence

Health

Machine Learning in Earth and Climate Sciences

Natural Language Processing (NLP)

Multimedia / multimodal information

Information retrieval

Explainability and Fairness in Data Mining

Symbolic Machine Learning

Lessons learned FSTP

The projects had to be supported by a Scientific Advisor, who created the link between industry and research.

**Evaluation Process stages**

- Eligibility check & pre-scoring
- External evaluation
- Consensus Meeting
- Jury Day
- Formal & legal check
- Sub-Grant Agreement preparation & signature
- In addition: ethical check done before the 1st payment (after the SGA signature in 1st OC and before the Jury Day in 2nd OC)

Selected companies entered a 6-month program and received funding of € 60.000. During this period, they were working on the implementation of their objectives specified in the work plan and the development of the solution with advisory support from the Scientific Advisor. Finally, they had to display a demo video that showcased the results of their projects during an online public event organised by ELISE.

The support provided by ELISE was both financial, i.e., up to € 60.000 (lump sum) to develop AI/Machine Learning applications in one of ELISE focus areas, and of visibility through the ELISE online channels and events, and dissemination in the ELLIS community.


## HumanE-AI-Net

As it has already been presented in the previous chapter, not all the ICT-48 projects have carried out FSTP activities. Indeed, HumanE-AI-Net focused on collaborative [micro-projects](#) to involve a small group of researchers (usually in groups of 2 to 5) from different partner institutions that worked together in a single location for a period of time of no more than 6 months.

Even if in January 2023 they changed a little the Microproject call trying to intensify the interaction with groups outside the project ("*Microprojects that include at least one HumanE AI Net partner and one external group will be given priority, especially when reserve funds are requested for the HumanE group.*"[2]), the focus of collaborative micro-projects remained linked to HumanE-AI-Net partners and not on "third parties". Indeed, their aim was to solve a well-defined problem related to a specific scientific/technological challenge producing a tangible result (e.g., scientific publications, datasets, toolbox, demonstrators, or integration of a toolbox). The topics were the following:

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[2] https://www.humane-ai.eu/humane-ai-net-january-2023-microproject-call/

| | |
|---|---|
| **Establishing Common Ground for Collaboration with AI Systems** | The focus was on "Collaborative Artificial Intelligence"<br>The projects had to provide practical demonstrations, tools, or new theoretical models for AI systems that can collaborate with and empower individuals or groups of people to attain shared goals |
| **Creation/Augmentation of realistic Datasets** | Ethical and societal challenges:<br>    Creating a latent representation of the original data, that can be used to generate artificial data<br>    Evaluating the quality of artificial data in terms of its usefulness but also its degree of anonymization<br>    User modelling/personalization based on a latent representation instead of personal data<br>    Ethical aspects and legal boundaries of modelling users via digital twins (a latent representation of their personal data) |
| **Interactive Grounding** | Proposal had to consider technical and human aspects of grounding |
| **Measuring, modeling, predicting the individual and collective effects of different forms of AI influence in socio-technical systems at scale** | **Focus was on** case studies, experiments, simulations and novel models and methods exploring the frontier of Social AI |
| **ELS evaluation projects** | **The** aim was to assess/evaluate/monitor the implementation and adherence to ELS principles and guidelines (ethical, legal, societal). |
| **Innovation projects** | The aim was to develop and implement innovative AI solutions with significant socio-economic impact. |
| **Education & training projects** | The focus was on micro-projects engaging external partners, in the context of the International Artificial Intelligence Doctoral Academy (AIDA). |

Additionally, a joint call for collaborative projects has been activated between HumanE-AI-Net and ELISE. Both NoEs joined hands to link the micro-projects program of HumanE-AI-Net and the ELISE mobility program. The focus of the call was on 'Collaborative Artificial Intelligence' as described in Section 3.1 of the updated Humane AI Research Agenda. The interest was on projects that create theoretical frameworks and real-world examples of AI systems that can communicate with one another or with people by using representations that are comprehensible and significant to humans. These representations could be simple structures or based on natural language, but they could also be organised in terms of so-called "narratives" that connect certain aspects of a situation to themes or schemas that have already been encountered.

Lessons learned FSTP

## Results obtained

The ICT-48 NoEs, in particular AI4Media, ELISE, and TAILOR carried out several open calls, as already highlighted within the previous sections. As also stated above, the microprojects carried out by HumanE-AI-Network have not been considered FSTP, therefore they have not been analysed here.

Regarding the results obtained from the Open Calls, here are some numbers:

| | AI4Media | ELISE | TAILOR |
|---|---|---|---|
| **Open Calls Applications received** | 60 (OC1) [40 Application track + 20 Research track] 95 (OC2) [63 Application track + 32 Research track] | In total 797 applications received in 2 Open Calls: 391 (OC1) 406 (OC2) | Open Calls Applications submitted Continuous = 108 applications submitted 3 (OC1) / (OC2) 2 (OC3) 12 (OC4) 37 (OC5)[3] |
| **Projects selected Nr. Of projects (Nr. Call)** | 20 (OC1) 20 (OC2) | 16 (OC1) 16 (OC2) | 65 Current (incomplete) status: https://tailor-network.eu/connectivity-fund/funded-projects/ |
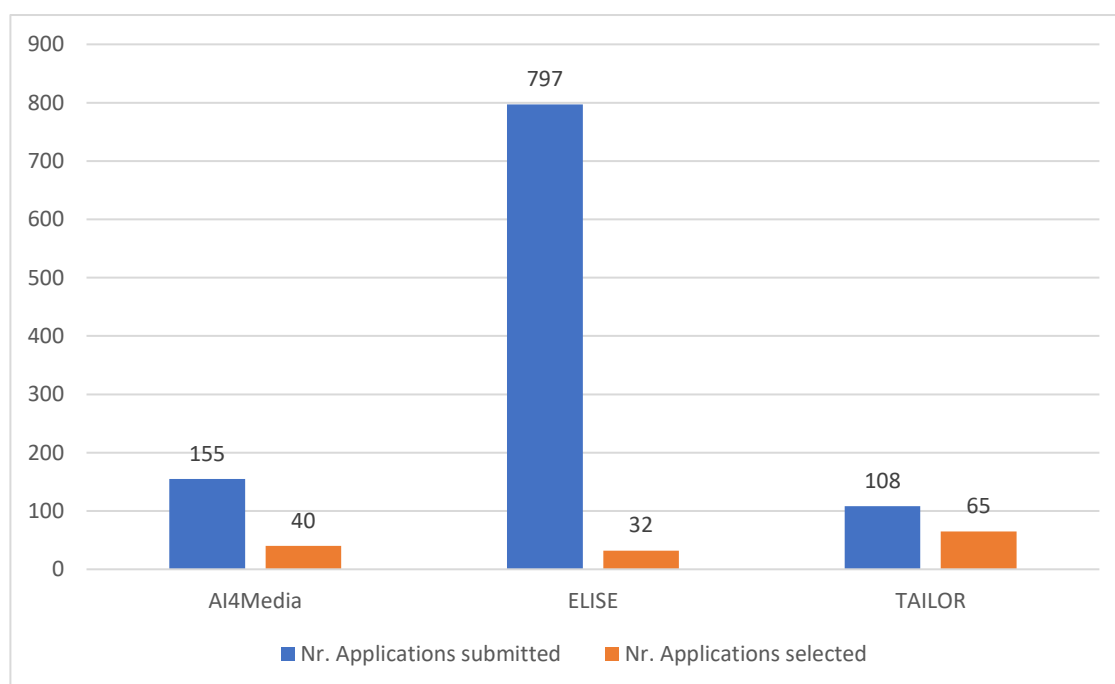


To note, in the case of ELISE, the process for selecting the funded projects has been:

- OC1: 391 proposals submitted (OC1)
  - 390 were eligible
  - 140 passed pre-scoring and then have been evaluated by External Experts, of which: 71 were deemed above threshold
  - 71 passed to the Consensus Meeting
  - 24 were selected for the Jury Day

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[3] Partial information.

Lessons learned FSTP

- o 16 were the projects in the first list pre-selected for financial support + 3 proposals were put in the reserve list
- OC2: 406 applications submitted (OC2)
  - o 402 were eligible
  - o 100 passed pre-scoring and then have been evaluated by External Experts: 61 scored above threshold
  - o 57 passed to the Consensus Meeting (*only proposals that passed ethical self-assessment)
  - o 32 were selected for the Jury Day
  - o 16 projects were pre-selected for financial support + 2 proposals were put in the reserve list

| | AI4Media | ELISE | TAILOR |
|---|---|---|---|
| **Role of applicants** | Beneficiaries of the AI4Media open call funding programme | Solution development (ML/AI application development) | Researchers (for research visits) or workshop organisers (for workshops) |
| **Type of applicants (SMEs, academia, researchers, etc.)** | Industry (start-ups, SMEs) and academia | Single SME | SMEs, academia, researchers |
| **Countries of applicants Nr. (OC number)** | 22 (OC1)<br>22 (OC2) | ELISE had applicants from 39 different countries, with the top 3 coming from Spain, Italy and Germany.<br>Selected companies were coming from 19 countries in total (OC1: 11 countries represented, OC2: 14 countries represented) | 20 European countries |
| **Call documentation and additional information** | D10.1 Initial Call Documentation<br>D10.3 Analytics on Submitted Proposals (available soon - pending official approval from the EC) | https://elise2oc.fundingbox.com/pages/elise2opencall | D 10.1 Connectivity Fund operational<br>D 10.2 Connectivity Fund call 1<br>D 10.3 Connectivity Fund call 2<br>D 10.4 Connectivity Fund call 3<br>D 10.5 Connectivity Fund call 4<br>D 10.6 Connectivity Fund call 5<br>D 10.7 Connectivity Fund call 6 (not yet available)<br>D 10.8 Connectivity Fund call 7 (not yet available)<br>D 10.9 Connectivity Fund call 8 (not yet available)<br>D 10.10 Connectivity Fund call 9 (not yet available) |

Lessons learned FSTP

## Positive outcomes

Regarding **AI4Media**, the project reported that all the funded projects completed their workplans as planned. Additionally, all the results contributed to the AI and media community. These include datasets, publications, code/algorithms, access to a software/service developed in the project, etc. The contributions are mainly available on the AI4Media Zenodo community or the AI on Demand platform. The support received by AI4Media also allowed most of the funded projects (18 out of 20) to successfully complete their activities within the planned 9- or 12-month periods; only two required an additional minor extension due to issues not under their control.

Based on a questionnaire circulated, feedback from SMEs supported by **ELISE** was collected. All the FSTP beneficiaries (32 SMEs have been supported, coming from 19 countries) found value in the ELISE programme and would therefore recommend it to other AI/ML companies. The aspects that the companies found most valuable in the whole programme were, in order of importance, **(1) financial support, (2) visibility through ELISE network, and (3) advisory support**. Another point to be made is that the grantees were able to increase the TRL of their products by one point on average. Also, almost half of the grantees reported a raised value through ELISE. It has also to be noted that some of the grantees have obtained further funds, such as grants & prizes, Venture Capital, and accelerators or corporate funds. The added value obtained through the support of the ELISE 1st Open Call awardees allowed some to obtain awards related to their projects, such as:

- Best startup at Reactor 2022
- IKIGAI acceleration
- Becoming part of the REACH incubator
- Best paper award in EAMT (related to the project)
- Telecompaper Innovation Award
- Investment by a VC
- "Rookie of the year" 2023 in YesDelft, one of the biggest Tech incubators in Europe.
- nomination to the Dutch Automotive Innovation Award 2023
- Open Italy Impact Award 2023
- Google.Org Social Innovation Fund

From the testimonials of some of the beneficiaries, we can appreciate the positive outcome that the FSTP Open calls achieved:

Lessons learned FSTP

## Artisense

*"The ELISE Open call enabled us at Artisense to develop a state-of-the-art research project further and to build a novel and innovative product."* - Prof. Dr. Niclas Zeller

## Maekersuite

*"The ELISE project experience pushed us to achieve what would have not otherwise been possible, as well as get support from one of the best scientists in the field."* - Andres P. Torres, Head of AI at Maekersuite

## Unbabel

"*Participating in the ELISE Open Call allowed us to focus on very important aspects of our product that require machine translation to be more responsible, i.e., be more robust and make fewer severe translation errors. This innovation required using machine-learning-based natural language processing models that helped us get to the next level of translation quality. The process was well organised, and the experience was very positive*." – José Souza, Senior Research Scientist, Unbabel

## Fuvex Civil

*"Our goal in Fuvex Civil is to automate the digitization of power lines by enabling the industrial use of long-range drones. One of the main challenges we face is ensuring that the sensors onboard the drone capture the right power line data. We are grateful to ELISE as it has provided us with the opportunity to develop the project AUTONOMOUS EDGE in which we have achieved to develop a prototype of an AI system to detect power lines and automatically point the sensors in the direction of these infrastructures*" - Carlos Matilla, FuVeX CEO.

## Rovjok Oy

*"The ELISE funding has been an excellent springboard to facilitate our internal R&D efforts aimed at bringing the power of machine learning to the resource extraction industry*." – Simon Zieleniewski, Rovjok Oy

## Yield Systems

*"ELISE was a great experience and helped us develop the efficiency of our synthetic data pipeline. As a startup, we need support from the research community as we need to focus on our business and due to lack of resources, we will otherwise easily lose track of the recent developments in the key fields of Computer Science. I highly recommend working with the ELISE community!"* - Jussi Gillberg, CEO at Yield Systems

## Skinive Holding

*"Who helps us better to improve AI than the European Network of AI Excellence Centers? We are pleased to have been chosen to implement our socially important project*." - Co-founder & Product Manager of Skinive Holding.

## Reperio

"*With ELISE funding, Reperio intends to develop the first truly automatic and objective visual field test that can be deployed anywhere. This will be done by training a recurrent neural network with eye-tracking data of patients performing a simple and intuitive visual task. Beyond the mapping of visual field sensitivity, what we want to achieve is the development of an algorithm capable of telling if the visual field defect is glaucomatous (i.e. caused by the presence of Glaucoma) or not, as well as predicting the degenerative loss over time*" - Dr. Grillini.

## Stratio Automotive

*"ELISE provided the initial funding that allowed Stratio to explore a radically new approach, which the Stratio R&D team will continue to improve, both in-house and through future EU-funded research projects."* - Paulo Bajouco, Stratio Automotive's CFO

Lessons learned FSTP

The support provided by **TAILOR** allowed many very useful research visits and workshops with valuable outcomes. The experience has been very positive for almost all participants. This also allowed the TAILOR network to interact with a much broader range of AI labs than those in the original network and made TAILOR much more visible and impactful. Connectivity Fund recipients were also very active in TAILOR webinars, meetings and conferences.

## Best examples

Herewith we provide some of the best examples among the projects funded by the NoEs, divided per NoE.

### AI4Media

AI4Media supported 40 projects within the 2 Open Calls held, divided per Application and Research track. Herewith we display some of the best examples among them.

**AIEDJ**

*Project name*: AI Empathic DJ App
*Company*: Musicube GmbH, Germany
*Funded by*: AI4Media - OC1 - Application track: Navigating multi perspectivity in media heritage collections

*Objective:* Musicube is an SME that builds AI software for audio. Neural networks were created by Musicube to automatically analyse audio files and tag them with emotions, sound characteristics, and musical elements. The goal with the AI Empathic DJ project is to advance this software so that it can adjust to the listeners' preferences on music.

**CIMA**

*Project name*: Next-Gen Collaborative Intelligence for Media Authentication
*Company*: AdVerif.ai, Israel
*Funded by*: AI4Media - OC1 - Application track: Evidence Collection in Digital Media Authentication

*Objective:* The aim was to create a cutting-edge intelligence platform to make a collaborative collection of evidence for media authentication easier and faster. The platform will use state-of-the-art AI techniques from the media to cyber-security, enabling fact-checkers and journalists to work more efficiently.

**CUHE**

*Project name*: An explainable recommender system for holistic exploration and CUration of media HEritage collections
*Company*: IN2 Digital Innovations GmbH, Germany
*Funded by*: AI4Media - OC1 - Application track: Navigating multi perspectivity in media heritage collections

*Objective:* The aim of this project was to develop a web application leveraging on artificial intelligence's recommendations to enable cultural heritage experts and researchers in the humanities to investigate current media and digital collections more comprehensively. This will also enable them to organize new galleries or produce digital narratives and exhibitions that can highlight and disseminate the newly acquired knowledge.

**InPreVI**

*Project name*: Inauthentic web traffic Prediction in Video marketing campaigns for investment optimization
*Company*: JOT Internet Media, Spain
*Funded by*: AI4Media - OC1 - Application track: Evidence Collection in Digital Media Authentication

*Objective:* The aim was to create a novel artificial intelligence system that leveraged the JOT-owned video web traffic data to: (1) identify the primary behavioural patterns of fraudulent users so that their actions can be predicted and their influence on video marketing campaigns limited; and (2) model the quality score related to a campaign.

## VRES

*Project name*: Varia Research
*Company*: Varia UG, Germany
*Funded by*: AI4Media - OC1 - Application track: Leveraging the power of media archives through Artificial Intelligence

*Objective:* The project planned to give journalists access to AI power. Varia Research was set to be the first comprehensive application that provides a single location for all central research activities, whereas current journalistic research processes are highly fragmented and rely on workarounds.

## edgeAI4UAV

*Project name*: Computer Vision and AI Algorithms Edge Computation on UAVs
*Company*: International Hellenic University, Greece
*Funded by*: AI4Media - OC1 - Research track: Combining deep learning-based computer vision and classic path-planning/ control for autonomous UAV cinematography tasks

*Objective:* The main aim was to provide an edge computation node for unmanned aerial vehicles (UAVs) that is outfitted with AI (deep learning) and lightweight active computer vision algorithms to track and identify moving objects.

## NeurAdapt

*Project name*: Development of a Bio-inspired, resource efficient design approach for designing Deep Learning models
*Company*: Irida Labs, Greece
*Funded by*: AI4Media - OC1 - Research track: Bio-inspired deep learning

*Objective:* The project objective was to provide a framework that combines tried-and-true methods like calibrated dropout, channel gating, and channel attention to create a new foundational approach for CNN model design.

## RobaCOFI

*Project name*: Robust and adaptable comment filtering
*Company*: Institut Jozef Stefan, Slovenia
*Funded by*: AI4Media - OC1 - Research track: Open challenge

*Objective:* To create new techniques to get around the difficulty of filtering and moderating comments and streamline the initial implementation process; create techniques for data annotation that is done in a semi-automated manner, such as new active learning variations that enable AI tools to quickly identify the data that needs to be labeled.

## JECT-CLONE

*Project name*: JECT - Creative Landscapes of News
*Company*: JECT.AI Limited, United Kingdom
*Funded by*: AI4Media - OC2 - Application track

*Objective:* The JECT-CLONE project aimed to provide journalists and editors with new computational creativity capabilities in the form of software-as-a-service (SaaS) that will autonomously generate novel themes, angles, and voices for stories and send them out on a regular basis via pre-existing channels.

## VIREO

*Project name*: Visually appealing Image Recommendation based on Article Content using Artificial Intelligence
*Company*: Human Opsis, Greece
*Funded by*: AI4Media - OC2 - Application track

*Objective:* With the help of VIREO, a digital interactive solution, professionals in the news and media sectors can create visually appealing articles and improve the reading experience for media consumers by using AI techniques to suggest images.

## NLMIE

*Project name*: Natural Language Media Indexing Engine
*Company*: Kaspar ApS, Denmark
*Funded by*: AI4Media - OC2 - Application track

*Objective:* NLMIE sought to modernize audiovisual archives by combining computer vision and natural language processing.

## MAGNET

*Project name*: Automatic Recommendation of In-Context Media Content to Support Exploratory Research in Journalism
*Company*: inknow solutions, Portugal
*Funded by*: AI4Media - OC2 - Application track

*Objective: Magnet was a tool designed to support journalists in the initial phases of an article's writing by automatically resurfacing relevant content from previous activities.*

## VolEvol

*Project name*: Generation of Meaningful Representations of Volume Data Through Evolutionary Learning
*Company*: "Gheorghe Asachi" Technical University of Iaşi, Romania
*Funded by*: AI4Media - OC2 – Research track

*Objective:* The project's goal was to facilitate the rendering of images from volume data by searching for rendering parameters based on quality and diversity-oriented optimization goals using evolutionary algorithms.

Lessons learned FSTP

*ELISE*

ELISE funded a total of 32 SMEs with the aim to develop AI-based services or applications. As already seen in the previous sestions, the goal of ELISE Open Calls was to launch small-scale initiatives to create innovative AI services and applications to address the problems identified by the project's stakeholders. They ensured that SMEs and start-ups have access to machine learning technologies and expertise while also facilitating and expediting their widespread adoption of these technologies. The objective is to use machine learning to address significant social and economic issues.

The main examples are:

### Mimica Automation

- *Funded by*: ELISE - OC1
- *Objective:* We are building an AI that records click and keystrokes, understands the task at hand, and generates automation code for it. Thanks to the support from ELISE, we were able to carry out a successful AI project that delivered real value to our customers.

### ONCOMECA

- *Funded by*: ELISE - OC1
- *Objective:* ONCOMECA is both a start-up and a medical device for the diagnosis of skin cancers, which uniquely combines an optical sensor, a robotic palpation and an artificial intelligence (AI). The goal is to drastically improve the quality and timeliness of skin cancer diagnosis by practitioners and relieve the healthcare system.

### Artisense

- *Funded by*: ELISE - OC1
- *Objective:* ArtiMonoRec integrates an AI module which is built on top of the existing Artisense product VINS (visual inertial navigation system) and delivers highly accurate dense reconstruction of the environment from a moving camera. Furthermore, the system can detect and mask out moving objects.

### Synamic Technologies

- *Funded by*: ELISE - OC1
- *Objective:* Cyber security automation requires reliable, machine-readable information. SCR.AI turns full text incident and threat reports into machine-readable data sets. The attack description is analysed using Natural Language Processing and expressed using the relevant industry standards, such as MITRE ATT&CK and STIX2. These data sets are used to automate threat analysis, so that companies obtain an early- warning-system for cyber risks.

### AEIGEA medical

- *Funded by*: ELISE - OC1
- *Objective:* AIGEA Medical is a MedTech startup: focusing on Artificial Intelligence applied to radiology workflows and digital imaging, we propose DeepMammoTM, the AI empowering radiologists in early detection of breast cancer. Thanks to the support from ELISE in the Open Call we improved DeepMammoTM, implementing a core planned technical step in our roadmap, i.e. the enrichment with a novel AI for Automatic Generation of Medical Reports from Images, thanks to state-of-the-art NLG (Natural Language Generation) technology.

### iThermeAI

- *Funded by*: ELISE - OC1
- *Objective:* The project aimed to develop the core of their smart smoke and flame detection solution. Via the support of the ELISE funding, iThermAI could develop the core of their smart smoke and flame detection. State-of-the-art deep-tech technology is used in this product to efficiently detect flame and smoke using inexpensive on-the-edge processing.

Lessons learned FSTP

## Algomo

- *Funded by*: ELISE - OC1
- *Objective:* In ELISE, we developed a family of specialised multilingual models, which could not only understand conversational queries (in every language) better but can also provide better results for specific domains (eg banking, travel, etc). We found that most of the value from ELISE was that we got the opportunity to be paired up with one of the top researchers in multilingual AI, who became our academic advisor. We found her comments very helpful and hope that we can collaborate more closely with her in the future.

## Ellogon.AI

- *Funded by*: ELISE - OC1
- *Objective:* Ellogon.AI aims at selecting the right patient for cancer immunotherapy as quickly as possible in cancer treatment with AI, focusing on breast cancer, lung cancer, and melanoma. Because of the experience with ELISE Open call, I could work in an exciting business environment while working on a research-based topic, therefore new insight could immediately be adopted into business development. As a result, the gap between research business solutions becomes smaller and scientific innovation can be integrated in practice soon.

## Skinive Holding

- *Funded by*: ELISE - OC1
- *Objective:* As part of Elise, our company has improved the performance of the Skinive MD application, making the product more stable, user-friendly and efficient for use in medical practices. The algorithm's capabilities have been expanded, namely the accuracy of the technology for most classes has been improved and the number of false negatives has been reduced by a factor of 3.8.

## Reperio

- *Funded by*: ELISE - OC1
- *Objective:* Reperio, a MedTech spin-off of the Ophthalmology department of the University Medical Center Groningen, was founded at the end of 2019 by Dr. Alessandro Grillini. What started as a little side-project during Grillini's Ph.D. has now become a startup with a team of 7 and an international network of research and industry partners.

## Rhino Health

- *Funded by*: ELISE - OC2
- *Objective:* Rhino Health aims to enhance breastcancer prognosis by developing an advanced detection algorithm using Federated Learning. This algorithm will enable the development ofmore robust, personalized algorithms while maximizing patient privacy. Rhino Health is partnering with German Corredor Prada, PhD, MS, Assistant Professor from Emory University and Georgia Institute of Technology, as well as Assuta Medical Center and the Tel Aviv Sourasky Medical Center ("Ichilov") to complete this project.

## Efemerai

- *Funded by*: ELISE - OC2
- *Objective:* Modern Machine Learning operations have made it possible to label and manage vast datasets, train models with billions of parameters, and monitor model performance with ease. Despite that, extensively testing models and carefully identifying their operational envelopes is still more of an academic, rather than an engineering activity. Efermerai wants to bring the same rigor and confidence to AI as testing brought to the field of software engineering. Building machine learning models that can reliably and safely process unseen edge cases is one of the biggest challenges that every single machine learning team is currently facing. The issue is even more acute in the robotics domain were working with videos taken in the wild is the norm.

Lessons learned FSTP

**Denovo Sciences**

- *Funded by*: ELISE - OC2
- *Objective:* Denovo Sciences employs AI to enable the generation of novel therapeutics. Using Deep Reinforcement Learning (DRL) on physical-chemical simulations, Denovo Sciences can generate novel therapeutics without the need for training datasets. Denovo can discover treatments for difficult targets, untreated illnesses, and unusual biological targets thanks to this technology.

**World from Space**

- *Funded by*: ELISE - OC2
- *Objective:* World from Space addresses a shortfall in AI/ML technology for digital agriculture: i.e., cloud interference in satellite imaging. Their solution combined radar and multispectral data, using advanced AI to generate clear, cloud-free images for reliable global crop monitoring, regardless of weather conditions. The project used cutting edge techniques to improve AI performance while balancing accuracy gains with computation time and cost.

**Augmented Hearing**

- *Funded by*: ELISE - OC2
- *Objective:* Augmented Hearing leveraged the power of AI to enable effortless conversations in naturally noisy environments. Their innovative approach of Augmented Hearing makes use of the revolutionary potential of AI in signal processing, surpassing conventional techniques to achieve previously unachievable speech clarification. Their technology improved phonetic contrast and effectively blocks out background noise, which facilitates the brain's processing of spoken words.

**AD Cube**

- *Funded by*: ELISE - OC2
- *Objective:* AD cube aimed to empower marketers to focus on strategic and creative tasks while AI handles the rest, to resolve inefficiencies in marketing budget management.

*TAILOR*

TAILOR's funded projects are available on their [webpage](). The list is not complete and is continuously updated. Some best examples are provided herewith:

**Logic-based multi-agent reinforcement learning**

*Funded by*: TAILOR

*Objective:* The project aimed to program human-like activities for AI robots using machine learning, a popular method for learning proper behaviour through trial and error. By verifying that multi-agent reinforcement learning policies adhere to a declarative logical specification, the research advanced the field of trustworthy artificial intelligence.

**Conformal Inference for multivariate, complex, and heterogeneous data**

*Funded by*: TAILOR

*Objective:* The project proposed new Conformal Inference strategies to quantify uncertainty in personalized medicine applications. These methods assess machine learning outcomes' safety and dependability, enhancing data-driven decision-making processes and potentially boosting healthcare industry efficiency.

## Modelling others for cooperation under imperfect information

*Funded by*: TAILOR

*Objective:* Models for sympathetic software have been the main topic of the research visit. This entailed giving autonomous agents the capacity to emulate their peers and comprehend the motivations behind their actions. The purpose of this work was to improve agents' performance in cooperative tasks, where they must cooperate with one another to achieve a shared objective.

## Holistic Evaluation of AI-assisted Biomedicine: A Case study on Interactive Cell Segmentation

*Funded by*: TAILOR

*Objective:* The project focused on interactive cell segmentation in AI-assisted biomedicine, validating the TAILOR network's research on AI trustworthiness. It aimed to establish comprehensive evaluation methodologies, analysed system predictability, and investigated human-AI teams' performance. The project aimed to demonstrate the viability of TAILOR network concepts and establish methods and metrics for general segmentation assessment in line with expert usage.

## Multi-Objective Rating Systems

*Funded by*: TAILOR

*Objective:* This project combined multi-agent learning and multi-objective decision-making expertise to match users with items in rating systems with multiple objectives. It went beyond traditional Pareto efficiency, ensuring reliability, diversity, and fairness. The project involved PhD students, joint grant applications, and long-term research collaborations.

## 5. Lessons learned

Herewith we present the lessons learned by the ICT-48's NoEs.

### Administrative / Financial lessons learned

| Lesson learned #1 | |
|---|---|
| **What went well?** What did not go well? | Providing **funding** for the participants is vital. |
| **What was the impact?** | The feedback received is that the funds received through the projects' participation in the programme was an important stepping stone or event lifeline for many of their application or research activities. For example, in some of the application track projects, the funding received allowed the beneficiaries to invest time in research without excessive pressure to deliver immediate and monetizable results. |
| **What is the recommendation?** | Keep this line of funding for FSTP projects. The amount has also been considered sufficient for carrying out the projects' activities, also given the reduced amount of time, usually between 6 and 12 months. |

| Lesson learned #2 | |
|---|---|
| What went well? **What did not go well?** | The large number of proposals received caused a lot of administrative work. |
| **What was the impact?** | This overload was resolved by devoting extra staff to administration, more than what was initially planned, and by extensively streamlining the process via automated forms. |
| **What is the recommendation?** | The use of automated forms showed as a good solution to try to reduce a high administrative workload, such as Google forms. It is also suggested, if the effort required is too consistent for the NoE, to put a limit to the number of proposals that are accepted at each round and, if the requests are too high, to define additional Open Calls. |

| Lesson learned #3 | |
|---|---|
| What went well? **What did not go well?** | **A high number of entities** (such as labs) increases the administrative work. |
| **What was the impact?** | There were many small problems linked to the strict requirements of FSTP funding and a lot of back and forth with 80+ different university and SME administrations. In one case it took 6 months to get the agreement signed. |
| **What is the recommendation?** | Iterate many times over the subgrant agreement to get the language right and the edge cases resolved. Additionally, allowing a 25% overhead to be charged for managing the received funds can simplify things a lot (otherwise it can occur that beneficiaries simply refuse to collaborate). |

Lessons learned on the type of support needed

| Lesson learned #4 | |
|---|---|
| **What went well? What did not go well?** | Companies have valued the financial support but have also appreciated the offered **networking and mentoring support.** |
| **What was the impact?** | The support provided by the NoEs towards mentoring the funded projects as well as their effort towards allowing the projects to network among themselves have been highly appreciated. |
| **What is the recommendation?** | Keep on the networking among the NoEs and their FSTP projects funded throughout the project lifecycle through specific events, social channels, blogs, websites… |

| Lesson learned #5 | |
|---|---|
| **What went well? What did not go well?** | It is important to have a **coach/mentor** for each one of the awarded projects to ensure that the sub-granted projects received valuable mentorship and support aligned with the topic of their project. |
| **What was the impact?** | The motivation of the **coach/mentor** is just as important as that of the beneficiary. When there is an equal level of motivation on both ends, the discussions, collaboration and mentorship in general is more productive. Through this approach, it was possible to ensure regular and valuable support from the coach as there was motivation to see the project evolve. |
| **What is the recommendation?** | Consider:<br>● *Allocating a representative as a coach to each one of the projects*. It is better that the coach is either directly involved in the Open Call (FSTP) WP activities (and had interest in the proposal topic) or participated in the definition of the open call challenge to which the applicant applied.<br>● Organising *regular monthly sessions with the coaches* to promote collaborative discussions, identify challenges in projects, and discuss solutions as needed to support them.<br>● Ensuring *regular administrative monitoring* of the projects through a monthly feedback form.<br>● Organising a *bootcamp* (one for each programme) addressing topics aligned with the interest of the sub-grantees. |

Lessons learned FSTP

| Lesson learned #6 | |
|---|---|
| **What went well?** What did not go well? | Mobility funds are **useful, effective and low-cost instruments.** |
| **What was the impact?** | Mobility funds are an **extremely useful instrument and a major benefit for European AI researchers**. They are also extremely effective, resulting in new collaborations and outcomes at low cost (only travel costs), resulting in ideas and outcomes that otherwise would not have happened. |
| **What is the recommendation?** | It is suggested to increase the use of such funds for instance devoting an entire project to their preparation and dissemination. |

| Lesson learned #7 | |
|---|---|
| **What went well?** **What did not go well?** | There must be a well-established **support framework** in place. |
| **What was the impact?** | Having a **support framework** is important to ensure the beneficiaries are regularly monitored and aware of their obligations and to identify in due time any issues with the implementation. |
| **What is the recommendation?** | Set up a proper and defined **support framework** to ensure the participants activities are monitored and that all are informed of their obligations. It should be set up at least 3 months before opening the Call and the rules and the amount of support that will be granted must be clearly set in the Call text. |

| Lesson learned #8 | |
|---|---|
| **What went well?** **What did not go well?** | There must be funds available also for mentoring the projects. |
| **What was the impact?** | A difficulty encountered is related to the unavailability of a foreseen budget for mentoring or for ensuring technical support for FSTP beneficiaries. |
| **What is the recommendation?** | The recommendation is to devote at least 5-10% of the funds available for the FSTP open calls to support (for instance on administrative activities) and mentoring (especially on scientific/professional activities) activities. |

| Lesson learned #9 | |
|---|---|
| **What went well?** **What did not go well?** | No visits are possible in the case of FSTP's mobility funds. |
| **What was the impact?** | It can occur, such as during the Covid period of 2020 and 2021, that no visits are possible. This can have a great impact, especially when the FSTP is primarily a mobility fund, as in the case of TAILOR. To solve this, TAILOR asked for an extension from 3 to 4 years, and this helped a lot to still realise many |

| | visits, the total number coming close to the envisioned 100 visits. |
|---|---|
| **What is the recommendation?** | Hopefully we will not experience a pandemic again, but still the recommendation is to envision other possible ways to connect and realise the project even if mobility is out of the picture. However, if this is impractical, we also suggest analysing how this can impact the results and the mobility fund itself and define a mitigation strategy, such as the request for an extension. Therefore, if the risk materialises, the project is already aware of the road to take, and no additional time is lost. |

## Dissemination / Communication

| **Lesson learned #10** | |
|---|---|
| **What went well? What did not go well?** | When organising training and other similar sessions (within the work of participants to the Open Calls), it is not always possible to provide new ways of learning. |
| **What was the impact?** | Participating entities are at different maturity levels and have teams with different levels of knowledge, so **contents shared** has been more valuable to some than to others. |
| **What is the recommendation?** | It is important to keep a level of learning as uniform as possible. At the same time, if some of the trainees are more advanced than others, they can be put as "leaders" of small groups to enhance their participation and at the same time to allow them to share their knowledge. |

| **Lesson learned #11** | |
|---|---|
| **What went well? What did not go well?** | The **organisation of sessions that bring together representatives from all projects** is important. |
| **What was the impact?** | These sessions that bring together representatives from all projects are important to foster the sharing of good practices, the discussion of common challenges, and promote potential post-project collaborations. |
| **What is the recommendation?** | Consider organising at least 1 of these cross-projects events per year. |

| **Lesson learned #12** | |
|---|---|
| **What went well? What did not go well?** | **Promote the sub-granted projects** through the NoEs channels. |
| **What was the impact?** | The promotion of the sub-granted projects through website and social media channels, as well as other platforms (e.g., Success Story booklet, video testimonials) was valuable for the project's self-promotion. Also, presenting the best examples and the success cases was a good idea. |

| | |
|---|---|
| **What is the recommendation?** | Keep part of the dissemination and communication budget of the NoEs, or part of the budget for the support to FSTP projects and the management of Open Calls, available to promote the awarded projects. <br> Also, as it has also been pointed out within D4.4 "European AI Trendradar", publicise those collaborations that have been successful. Indeed, by emphasising results, showcasing successful collaborations as case studies to mentor and inspire others can encourage stakeholders to fund similar collaborations. |

| Lesson learned #13 | |
|---|---|
| **What went well? What did not go well?** | Limited visibility for the Open Calls. |
| **What was the impact?** | The limited options available to provide visibility for the 1st Open Call at the beginning, mainly because of Covid-19, has been somewhat managed with a stronger online dissemination campaign, including a set of videos on YouTube. This has been highlighted by the ELISE's NoE. |
| **What is the recommendation?** | Limited visibility for the Open Calls should be avoided by carefully planning a dissemination campaign starting at least 2 months before opening the Call. Additional promotion provided through the support projects (such as VISION) is also another important step towards a strong visibility for the calls. |

## Open Calls

| Lesson learned #14 | |
|---|---|
| **What went well? What did not go well?** | Having an open approach on the FSTP calls allows a wide range of **challenges** to be addressed. |
| **What was the impact?** | The wide range of challenges (open approach) to be addressed by the applications impacted positively the number of applications received by the NoEs. |
| **What is the recommendation?** | Consider keeping the Open calls topics as open as possible, therefore allowing any company, researcher, country… to participate. |

| Lesson learned #15 | |
|---|---|
| **What went well? What did not go well?** | The high number of applications received required the networks to find additional personnel resources to manage the workload. |
| **What was the impact?** | The impact caused by this situation forced the NoEs to find additional resources. This was also managed using an Agile management process. |

| | |
|---|---|
| **What is the recommendation?** | Consider preparing in advance for the Open Calls and to make an advanced estimation of the effort required to manage the Open Call itself. The use of an Agile iterative management process focusing on continuous iterations is also a good suggestion. This will allow the NoE to monitor the situation at given intervals and be able to adjust the management as needed. |

| **Lesson learned #16** | |
|---|---|
| **What went well? What did not go well?** | In the planning phase, it occurred that some Open Calls were outside of the project scope, i.e., some had no strong links between the SMEs ecosystem and the research activities planned in the project. |
| **What was the impact?** | An analysis of the feedback received by the beneficiaries showed that the role of the Scientific Advisor has been helpful during the project execution and has allowed the projects to reach their goals. |
| **What is the recommendation?** | Build a connection by ecosystem and research activities by adding a **Scientific Advisor** to the open call. The Scientific Advisor as a researcher invited by the applicant must advise the funded SME in developing the AI application or service. It is preferable that the Advisor has a PhD in a field that is relevant to the project. Additionally, it was highly recommended to acquire the Scientific Advisor from the project community, but this is not mandatory. |

Additional Lessons learned

| **Lesson learned #17** | |
|---|---|
| **What went well? What did not go well?** | Working in the same place improves success. |
| **What was the impact (positive or negative)?** | Having little groups working together in a single location on a well-defined project has proved to be very effective and to produce more tangible results. |
| **What is the recommendation?** | This solution is more feasible for mobility funds and for smaller projects, because the teamwork that this solution is based on works better with a small group (5 to 7 persons maximum is considered the right size). |

| **Lesson learned #18** | |
|---|---|
| **What went well? What did not go well?** | Use of interdisciplinary teams to carry out research. |
| **What was the impact (positive or negative)?** | Having people from different partners and discipline working together focusing on breakthroughs and developments to |

| | leverage the synergies between them creates a multiplier effect, creating a value far beyond the funds invested. Indeed, together they can produce a substantial innovation or breakthrough with a value far higher than the funds invested on the project itself. This has been highlighted also within D4.4 "European AI Trendradar". Indeed, engaging partners from academia, business, and the social sciences and humanities allows for a multifaceted approach to the same problem. Also, in the same document it has also been recommended to promote interdisciplinarity whenever relevant, as well as to identify individuals working in interconnected projects to bridge gaps between different realities. |
|---|---|
| **What is the recommendation?** | Use this solution if there is the need to focus on a particular problem and if it is better that this problem is tackled from different perspectives. |

| Lesson learned #19 | |
|---|---|
| **What went well? What did not go well?** | Knowledge spread within Europe. |
| **What was the impact (positive or negative)?** | After the projects are concluded, the researchers can share the results obtained, disclose the knowledge obtained with peers, shape future research or create new proposals, therefore spreading knowledge throughout Europe. |
| **What is the recommendation?** | The combination in one of three major concerns, i.e., (1) generating concrete results towards a particular research agenda; (2) fortifying ties between different European stakeholders; and (3) disseminating knowledge throughout Europe; is the best approach to be followed in Open calls. |

Some further recommendations have emerged, i.e.:

● There is a significant need of support in the ML/AL domain and great potential in the SMEs/startup ecosystem to be explored.
● Rising awareness about ethics principles applying to ML/AI is needed across the SME ecosystem.
● Creating a bridge between ML/AI researchers and SMEs/industry can bring significant value in increasing innovation.

## FSTP Lessons learned ICT-48 and ICT-49: a comparison

Within the project life cycle, and within the work of WP3 and T3.1, we have been in contact with Fundingbox. They were in charge of preparing a document on lessons learned from Open Calls within the ICT-49 projects. We thought it useful to provide a comparison of some points made in the ICT-49 lessons learned deliverable with the lessons learned as presented above.

Lessons learned FSTP

*Sector / Vertical*

| ICT-49 | ICT-48 |
|---|---|
| "Special efforts should be dedicated to the selection of the appropriate challenges, that are not very narrow or too specific, to not limit the number of potential applicants." [page 14] | L.L.#14 "Having an open approach on the FSTP calls allows a wide range of challenges to be addressed."<br>**BUT** also L.L.#15 "The high number of applications received required the networks to find additional resources to manage the workload."<br>L.L.#2 "The large number of proposals received caused a lot of administrative work." |

From the lessons learned within the ICT-48 effort, we had a similar situation as in the ICT-49 projects. Indeed, having open challenges allowed us to obtain a high number of proposals. Still, this caused some administrative problems (L.L. #2 and L.L. #15).

*Selection process: signing the Sub Grant Agreements with beneficiaries is very time-consuming*

| ICT-49 | ICT-48 |
|---|---|
| "Signing the contracts with the winners of the Open Call is time-consuming because of all the different documents and requirements that must be fulfilled […] For this reason, all the processes can incur delays, and the starting date of the project can be delayed." [page 16] | L.L. #3 "A high number of entities (such as labs) increases the administrative work." |

As related also to the previous point, ICT-48 NoEs realised that a high administrative effort was required in the preparation of the Open Calls agreements, especially when dealing with a high number of different entities.

*Open Calls Dissemination*

| ICT-49 | ICT-48 |
|---|---|
| "Joint dissemination efforts allowed reaching a great number of submissions." [page 17] | |
| "With the help of the Digital Transformation Accelerator (DTA) EDIHs Network we could Involve more partners in specific dissemination actions in each country to cover more countries and receive more proposals from more different countries" [page 19] | L.L.#12 "Promote the sub-granted projects through the NoEs channels." |

In both the ICT-49 and the ICT-48 NoEs, it emerged that having joint dissemination efforts is a great way to increase participation with less effort. In the case of ICT-48, having VISION as a support project allowed the NoEs to increase their dissemination range with less effort required. At the same time, the NoEs publicised the awarded projects through their channels (websites, socials…), therefore increasing their visibility.

Another possibility is also to create joint calls for collaborative projects, such as the ones that have been activated between HumanE-AI-Net and ELISE. The two NoEs joined hands to link the micro-projects program of HumanE-AI-Net and the ELISE mobility program. The focus of the call was on 'Collaborative Artificial Intelligence'.

Lessons learned FSTP

| ICT-49 | ICT-48 |
|---|---|
| "It would help if the plan for joint actions were included since the beginning of the GA of each project with clear responsibilities and tasks for the FSTP/Communication workgroups as a part of the project dissemination strategy." [page 18] | L.L.#3 "There must be a well-established support framework in place." |

The ICT-48 projects realised that establishing a support framework is crucial to guarantee that the recipients are consistently observed and promptly informed of any problems arising within the project implementation. An additional point that can be considered is the advanced establishment of this support framework already at the GA level (as considered by the ICT-49 projects) and not only before the launch of Open Calls.

## 6. What next: Other NoEs' FSTP activities

Since 2022, two new NoEs have been added to the community of NoEs: ELSA and euROBIN. Regarding FSTP, these two NoEs plan to have some Open Calls.

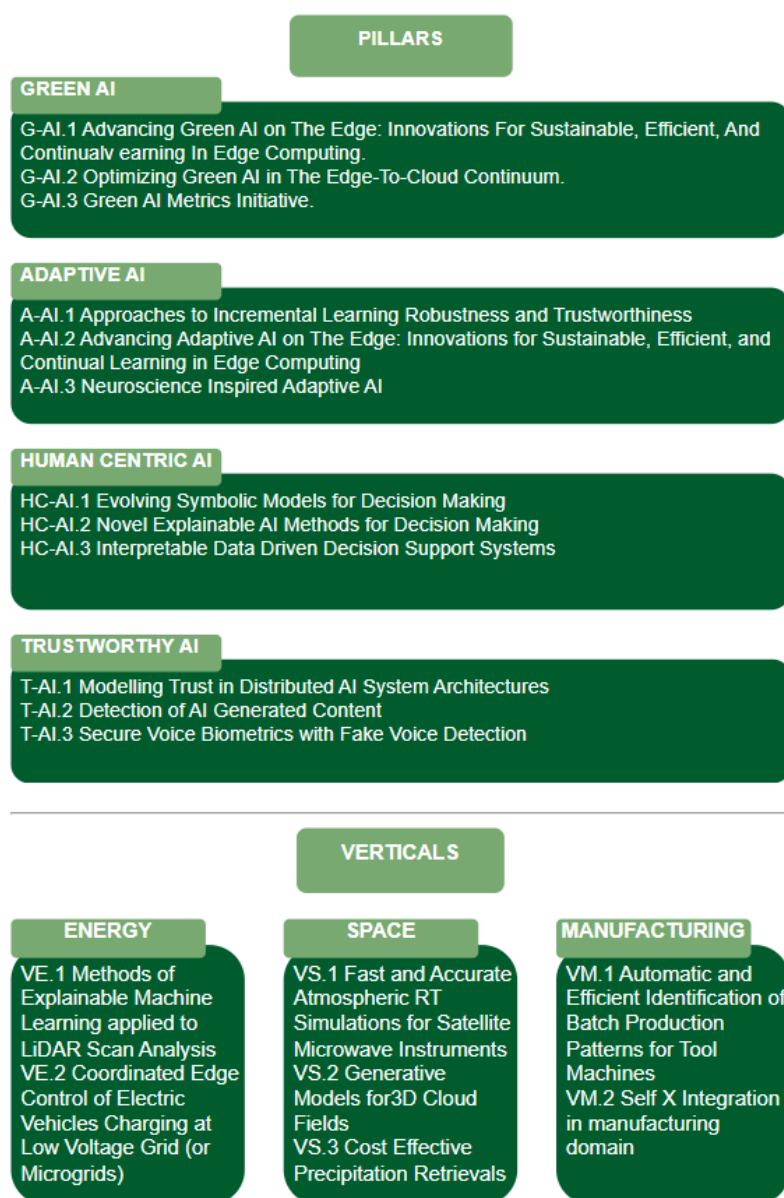In the case of **ELSA**, they have already had an Open call, ELSA Industry Call, that closed on May 2023 and whose objective was to fund innovative industry projects on safe and secure AI. Within this context, ELSA seeks projects based on AI applications that interact with the network in the categories of "Methodology," "Software/Tools," and "Benchmarks." These projects should be pertinent to, but not limited to, ELSA' six use cases. Additionally, and although ELSA is concentrated on three research programs, applications are not restricted to them if the ideas will use machine learning to address significant social and economic issues. The funding is up to 60.000 € to develop AI/Machine Learning applications. A second industry call is planned for 2024.

**euROBIN** had already held a 1st Open Call of the ***Technology Exchange Programme***, whose deadline was the 10th of May 2023. The financial support granted is up to 60.000 € for a duration of 3-12 months to integrate and test code, method or hardware in some of the most advanced robotic platforms in Europe to address significant research challenges thanks to the cascade funding mechanism that will support the researchers' work. Researchers from formal grant-receiving entities, such as research groups, institutions, or companies of any size, will collaborate with some of the euROBIN core teams to integrate and assess the robots' developed solutions at the hosting labs. Typically, two euROBIN partners will serve as host institutions during the stays, giving the euROBIN robot platforms access and assistance.

Additionally, and starting from fall 2023, three networks part of the initiative "European Network of AI Excellence Centres: Expanding the European AI lighthouse" (call Horizon-CL4-2022-Human-02-02) have been added to the community: ELIAS, ENFIELD, and dAIEDGE.

Among these projects, **ELIAS** has a task devoted to preparing 2 Open Calls to select a total of 8 SMEs/startup to fund with a maximum amount of 60.000 € in a

**PILLARS**

**GREEN AI**
G-AI.1 Advancing Green AI on The Edge: Innovations For Sustainable, Efficient, And Continualv earning In Edge Computing.
G-AI.2 Optimizing Green AI in The Edge-To-Cloud Continuum.
G-AI.3 Green AI Metrics Initiative.

**ADAPTIVE AI**
A-AI.1 Approaches to Incremental Learning Robustness and Trustworthiness
A-AI.2 Advancing Adaptive AI on The Edge: Innovations for Sustainable, Efficient, and Continual Learning in Edge Computing
A-AI.3 Neuroscience Inspired Adaptive AI

**HUMAN CENTRIC AI**
HC-AI.1 Evolving Symbolic Models for Decision Making
HC-AI.2 Novel Explainable AI Methods for Decision Making
HC-AI.3 Interpretable Data Driven Decision Support Systems

**TRUSTWORTHY AI**
T-AI.1 Modelling Trust in Distributed AI System Architectures
T-AI.2 Detection of AI Generated Content
T-AI.3 Secure Voice Biometrics with Fake Voice Detection

**VERTICALS**

**ENERGY**
VE.1 Methods of Explainable Machine Learning applied to LiDAR Scan Analysis
VE.2 Coordinated Edge Control of Electric Vehicles Charging at Low Voltage Grid (or Microgrids)

**SPACE**
VS.1 Fast and Accurate Atmospheric RT Simulations for Satellite Microwave Instruments
VS.2 Generative Models for3D Cloud Fields
VS.3 Cost Effective Precipitation Retrievals

**MANUFACTURING**
VM.1 Automatic and Efficient Identification of Batch Production Patterns for Tool Machines
VM.2 Self X Integration in manufacturing domain

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fixed lump sum format for a duration of 6 months. The first call is scheduled for December 2024, while the second one for December 2025. The SMEs/startups will engage with the network in different categories relevant to the 6 Use cases of the ELIAS project addressing sustainable AI, such as methodology, software/tools, and benchmarks. At minimum, the selected projects will have to reach a TRL 5 and validate the technology in an industrial relevant environment of one of the use cases.

**ENFIELD** plans to have 4 Open calls, called Exchange Schemes, to provide support to a total of 76 top-level researchers (PhD students, Post-docs and senior researchers) and groups of researchers to conduct foundational research activities related to specific scientific challenges in artificial intelligence. These initiatives will advance basic research in the fields of human-centred, green, adaptive, and trustworthy artificial intelligence. These pillars will further advance research in the verticals of healthcare, energy, manufacturing, and space, which are crucial to the successful development, deployment, and acceptance of AI in Europe. The first open call has already ended in spring 2024, while the others are planned for summer 2024, spring and summer 2025. The financial support is of up to 14.400 € in financial support (for a 6 months' span of project).

**dAIEDGE** aims to maintain the advancement of advanced AI while strengthening and fostering the growth of a vibrant European cutting-edge AI ecosystem under the auspices of the European Lighthouse for AI. Their first open call will be opened on the 29th of August 2024 and is seeking 10 or so researchers or PhD students working in the field of artificial intelligence at the edge to spend time at one of the institutions hosting dAIEDGE for a period of 7 months to conduct collaborative research that results in important advancements. The program's outcome should ideally result in a joint scientific publication from the hosting institution and the beneficiary.

### 7. Conclusion

In conclusion, the AI4Media project successfully addressed the challenges faced by providing **valuable mentorship and support** to sub-granted projects, resulting in the completion of all activities within the planned timeframes. ELISE overcame difficulties through **innovative approaches**, such as adding Scientific Advisors and Agile management, leading to positive feedback from SME beneficiaries, as shown within section 4. TAILOR adapted to the impact of the Covid-19 pandemic by extending project timelines and increasing administrative resources. The outcomes of these projects include valuable contributions to the AI and media community, increased TRL for products, and recognition through awards and further funding.

As has been highlighted in the sections above, the ICT-48's NoEs have shared their lessons learned regarding:

- **administrative and financial aspects of the FSTP projects**. They highlighted the importance of providing funding for participants, which allowed them to invest time in research without excessive pressure.
- The support provided by the NoEs towards **mentoring and networking** among the funded projects was highly appreciated. The recommendation is to keep on networking throughout the project lifecycle through specific events, social channels, blogs, and websites.
- The importance of having a **coach/mentor** for each awarded project was also highlighted.
- **Mobility funds** were found to be useful, effective, and low-cost instruments for European AI researchers, but were not used as often as recommended.
- A **well-established support framework** has been recommended, ensuring beneficiaries are regularly monitored and aware of their obligations.
- The NoEs discussed the **success of various aspects** of a project, including the organisation of training sessions, the promotion of sub-granted projects, and the role of Scientific Advisors. The **role of Scientific Advisors** in the project execution was also highlighted, with the recommendation to build a connection between the ecosystem and research activities by adding a Scientific Advisor to the open call. Additionally, they recommended organising at least one cross-projects event per year and keeping part of the dissemination and communication budget available for these events.
- The **open approach to FSTP calls** allowed for a wide range of challenges to be addressed, positively impacting the number of applications received by the NoEs. However, the high number of applications required additional personnel resources, which were managed using for instance an Agile management process. Instead, as a comparison, the ICT-49 projects focused on selecting appropriate challenges to avoid limiting potential applicants.
- **Working in the same location** for successful projects is more feasible for mobility funds and smaller projects, as it allows for better teamwork. The use of **interdisciplinary teams** for research generates value beyond the funds invested and is crucial for generating concrete results, strengthening ties between stakeholders, and disseminating knowledge.

These projects have not only demonstrated effectiveness in achieving their goals but have also paved the way for continued innovation and collaboration in the AI landscape.

Lessons learned FSTP

In addition, the ICT-48 and ICT-49 projects have been compared in terms of lessons learned from Open Calls:

- The ICT-49 projects focused on selecting appropriate **challenges** to avoid limiting potential applicants, while the ICT-48 project focused on addressing a wide range of challenges. However, the high number of applications required **additional resources and administrative work**. The ICT-49 projects also faced administrative issues, such as signing contracts with beneficiaries and dealing with a high number of entities.
- **Joint dissemination efforts** were found to increase participation with less effort, such as using VISION as a support project and publicising awarded projects through their channels. Joint calls for collaborative projects, such as those between HumanE-AI-Net and ELISE, were also explored.
- Both the ICT-48 and ICT-49 projects emphasised the importance of a **well-established support framework** to ensure recipients are consistently observed and promptly informed of any problems arising within project implementation. This support framework should be established at the GA level, not just before the launch of Open Calls.