

## Call Details

Reference No.	<b>CFP-FSD-AWP24-AC-10</b>	PMU contact	Denis Kalupin
Due Date	<b>16/02/2024</b>	Department	Fusion Science Department
		Status	<b>Draft</b>

## Call for Project proposals for innovative Artificial Intelligence and Machine Learning Methods used in support of EUROfusion programme objectives.

### Description:

EUROfusion invites proposals for innovative Artificial Intelligence (AI) and Machine Learning Method (MLM) projects aimed at advancing research and development in the field of fusion energy.

**Objective:** The primary goal of this call is to explore the potential of AI to address challenges and enhance capabilities within the EUROfusion programme. We are particularly interested in projects that contribute to optimizing data analysis, improving diagnostics, enhancing control systems, improving modelling capabilities and fostering a progress in fusion research.

**Scope of Projects:** Proposals are welcome in, but not limited to, the following areas:

1. **Data-driven modelling and simulation** for fusion experiments;
2. **Fast models** for full discharge simulators;
3. Machine learning **applications for plasma diagnostics and control**.
4. AI-driven **optimization of fusion machine operation**.
5. Integration of AI techniques for enhancing fusion energy research.

Specifically, proposals related to objectives mentioned in annual work plan (AWP) 2024 are welcome. Those are:

- Exploitation of the EUROfusion multi-machine databases using AI methods
- Proof of concept for the use of AI/ML methods in support to operation (Chat GPT like) by contributing to decisions in control room
- AI application in the LIBS spectra line analysis and composition quantification of fusion-relevant materials such as Be and W and hydrogenic species

**Eligibility:** This call is open to all EUROfusion affiliated researchers, academic institutions, and industry partners with expertise in AI and MLM. The following eligibility criteria and guidelines are applicable in addition to the general principles of excellence, relevance, state-of-the-art and innovation.

In order to be eligible:

- Projects must be closely linked with the EUROfusion programme, i.e. focused towards the

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objectives of one of Work Packages (WP). This should be confirmed by the letter of support provided by the WP Leader or, in case of TSVV related projects by the Thrust facilitator for the respective TSVV.

- Projects must show novel approach compared to the WP, i.e. a new AI or MLM to be used or developed for addressing the problem.
- The proponents must clearly indicate how their proposal could provide an important addition to the Work Programme.

In addition to the above eligibility criteria, proponents should consider the following guidelines while compiling the proposal:

- Projects must be clearly focused and minimise extraneous activities.
- **The ceiling for the Consortium Contribution for each project is limited to 100 k€ per project.**
- **Expected minimum commitment for project participants is 3 person months (PM) for entire project time.**
- Projects may include not more than one **open position**, which should **be filled before 1st of January 2025**.
- The average salary cost system shall be used to determine the personnel cost in the proposal.
- Maximum project duration is 20 months, finishing at 31.12.2025 at latest.

**Scientific Monitoring and Reporting:** A final report on the outcome of the project, outlining the main results, must be submitted at the end of the project. There will be a simple annual progress monitoring. All reports will be available to the PL of the linked WP and the E-TASC SB, so if necessary the corrections to the project schedule or scientific objectives might be requested to the PI.

#### **Submission Guidelines:**

1. Proposals should be submitted electronically through the EUROfusion Information Management System (IMS, <https://ims.euro-fusion.org>) by the GA member not later than 16 February 2024.
2. The proposal should include:
  - Proponent (Principal Investigator)
  - Project title and short abstract.
  - Detailed project plan:
    - including milestones and deliverables (per calendar year); and
    - identifying potential risks and mitigation actions.
  - CVs of the project team members (detailing their experience with regard to their role in the project).
  - Support letter from the WP PL describing of how the project aligns with EUROfusion goals. (In case of TSVV related projects the letter must be issued by Thrust facilitator for the respective TSVV.)

**Selection Process:** All submitted proposals will undergo a rigorous selection process by a panel formed from members of the E-TASC Scientific Board. Criteria for evaluation include scientific merit, feasibility, innovation, and alignment with EUROfusion's strategic objectives. For details please check the attached [Selection Process](#).

**Funding:** Selected projects will receive funding support from EUROfusion up to the amount requested in the proposal and at **50% reimbursement rate** (including indirect costs).

#### **Important Dates:**

- Call for Proposals Opens: **01.12.2023**

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Issued by: **EUROfusion / FSD department on 1/12/2023**



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- Submission Deadline: **16.02.2024**
  - Announcement of Selected Projects: **31.03.2024**
  - Earliest start of endorsed projects: **01.04.2024**
  - Latest date to close the project: **31.12.2025**

For inquiries, please contact [denis.kalupin@euro-fusion.org](mailto:denis.kalupin@euro-fusion.org).

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Proposals are expected against following active call positions

**CfP-FSD-AWP24-AC-10- AC**

**Advanced Computing**

Internal financial rules applicable for this position are:

**PM 50% standard**

*Personnel standard*

**Attachments:**

The Call includes following attachments available for download at the EUROfusion Information Management System:

**TEMPLATE Scientific Proposal.docx**

*TEMPLATE for Scientific Proposal (please download and use in your proposal)*

**TEMPLATE Letter of Support.docx**

*TEMPLATE for Letter of Support (please download and use in your proposal)*

**TEMPLATE CV\_(surname)\_(name).docx**

*TEMPLATE for CVs of project participants (please download, ask your project participants to fill and sign it before uploading it to the proposal)*

**TEMPLATE Accompanying Document.docx**

*TEMPLATE for Accompanying Document (please download and use in your proposal)*

**Selection Process.pdf**

*INFO: Description of the Selection Process and evaluation criteria*

**Personal Data Protection Policy.pdf**

*INFO: Personal Data Protection (GDPR)*