# **Request for support by Advanced Computing Hub**

## **Purpose of the document**

This form aims to gather essential technical details about the support required, enabling ACH coordinators to evaluate the necessary competencies and the scope of work.

The form should provide the necessary technical details regarding the request, allowing ACH coordinators to assess the required competencies and the amount of work to be done.

Following the assessment by the ACHs, the final allocation of ACH resources will be subject to approval by the E-TASC Scientific Board.

Please fill out the form and return it to the PMU at [denis.kalupin@euro-fusion.org](mailto:denis.kalupin@euro-fusion.org) before the specified deadline. If there are multiple requests, a separate form should be submitted for each request.

ACHs are expected to provide necessary expertise and support in computer science, scientific computing, and software engineering. Their primary goal is to assist in developing a comprehensive portfolio of EUROfusion standard software. This software should reflect our standards in experimental design and interpretation, supporting the European R&D programme, including ITER operation, EU-DEMO design, and associated facilities.

*Categories of Expertise*

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| --- | --- | --- |
| **Category 1:**  **High Performance Computing** | **Category 2:**  **Integrated Modelling and Control** | **Category 3:**  **Data Management** |
| 1. **ACH-MPG** 2. **ACH-EPFL** 3. **ACH-CIEMAT** | 1. **ACH-IPPLM** | 1. **ACH-VTT** |
| **Tasks under this category include:** | | |
| * Scalable algorithms * Code parallelization & performance optimization * GPU-enabling * Support for code refactoring | * Code adaptation to IMAS * IMAS framework development * Code integration | * Open access * Data management * Data analysis tools * AI/ML and VVUQ |

**Reference for the request:**

In this section, please provide the contact information for your request.

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| **Request** |
| Short Title for the request |
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| Code Name |
|  |
| TSVV or Work Package behind the request |
|  |
| Criticality: Refers to the impact of the request on the timeline of your code (High/Medium/Low) |
|  |
| **Code Coordinator (Developer)** |
| Name |
|  |
| Institution |
|  |
| Contact (official) e-mail |
|  |
| Contact telephone (optional) |
|  |
| **Code Development Team (optional)** |
| Team member (name / email) |
|  |
| Team member (name / email) |
|  |
| Team member (name / email) |
|  |

**ACH selection:**

In this section, please select the ACH and provide a brief justification for your choice.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ACH** | | | | | | | | | | |
| ACH(s) where the request should be sent | | | | | | | | | | |
| **CIEMAT** |  | **EPFL** |  | **MPG** | |  | **IPPLM** |  | **VTT** |  |
| Indicative level of support (in PMs) | | | | | | | | | | |
|  | | | | | | | | | | |
| Sequential request (if YES indicate the ACH previously involved in the project) | | | | | | | | | | |
|  | | | | | | | | | | |
| Short aim of the request (expected outcome), max 200 characters | | | | | | | | | | |
|  | | | | | | | | | | |
| Timeline: preferred start and end dates for the project (in which your time can also be dedicated to work with ACH team)  START: END: | | | | | | | | | | |
|  | | | | |  | | | | | |

**Detailed request:**

In this section, please provide details for the request that should allow the ACH to plan the work.

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| **Request** |
| Detailed work plan (max 300 words) |
|  |
| Has your code/project already received support (especially as part of a previous ACH call) related to improvement of its computational capabilities? If yes, please provide a short summary of resources allocated and improvements that were implemented. |
|  |
| If in parallel your code receives similar support from other institutions, please provide details. |
|  |
| Involvement of the project proponent(s). Please identify code experts from the proponent’s team and the level of effort (in PMs) each can dedicate to work together on the project with ACH team. |
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**Request details specific to ACH category:**

Depending on the type of origin of the request the following information might be needed. Please fill relevant fields referring to the current performance of the code for which the support is requested.

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| **High Performance Computing relevant requests** | |
| Total amount of node hours used over the last year |  |
| Architecture(s) where application is already used |  |
| Number of nodes |  |
| Memory requirements |  |
| Storage requirements |  |
| Pure MPI or mixed communication (OpenMP+MPI) |  |
| Own code / 3rd party code |  |
| Code publicly available (yes/no)? |  |
| Library requirements |  |
| Special requirements |  |
| Site name(s) where application is already used |  |
| Expected usage of the MARCONI-Fusion computer (yes/no, in case of positive reply please indicate which partition (conventional or accelerated partition))? |  |
| **Data Management relevant requests** | |
| Datatypes, current format of data, and expected size |  |
| Data used in simulation: whole set / specific sub-set |  |
| If applicable, status of UQ/AI/ML implementation |  |
| Typical execution time for a single simulation run |  |

**Other Information:**

You also can provide any other useful information, not originally foreseen by organisers.

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| **Further comments (optional)** |
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