Request for support

The natESM call for proposals is **open to all German model-development groups** in the field of Earth-system research.

Applications can be submitted **at any time**. Already accepted sprints can be found [here](https://www.nat-esm.de/services/accepted-sprints).

The support service comprises **up to 6 PMs per proposal** (depending on the type and difficulty of the request) in the form of consulting and/or programming work by the natESM experts for high-performance and heterogeneous computing from DKRZ and/or JSC. We basically distinguish between the **two categories**:

1. Short advisory activities or preparatory enquiries lasting **less than 2 months**.
2. Detailed assignment of special tasks with a term of **up to 6 months**.

**Access to the model code and,** if applicable, **the documentation must be available for the technical assessment of the application.**

Notes on filling out the form

* Please **follow the given page structure**. The application should **not exceed 8 pages**.

This is the only way the natESM steering committee and support team can complete the review in a reasonable amount of time.

* Since this form is also part of the joint development of a national Earth system modeling strategy together with the community, please do not hesitate to **send us feedback and suggestions for improvement** at any time to info@nat-esm.de.

Please email the completed form to support-request@nat-esm.de.

# General information

|  |  |
| --- | --- |
| 1.1 Name of institution | [Text] |
| 1.2 Contact person | Name | [Text] |
|  | Email | [Text] |
|  | Phone | [Text] |
| 1.3 Name of software / model | [Text] |
| 1.4 Programming language | [Text] |
| 1.5 Licensing conditions (current version and future plans) | [Text] |
| 1.6 Time frame | [ ]  short (< 8 weeks) | [ ]  long (2-6 months) |

# Brief overview

## Overview of the model / software

[TEXT]

## Aim of the request

[TEXT]

## Relevance for the future natESM strategy

The natESM vision is to create a world-leading, multiscale, seamless Earth system modelling system, usable in research, operational applications, training, and education. The modelling system considers German expertise, does not exclude international components, but avoids dependencies.

### Plans for sustainability of model / software (aspects of Open Source, Open Development)

[TEXT]

### What are the long-term goals of the intended model developments?

[TEXT]

# Technical criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 3.1 | Are experiments or tests available to control the numerical/algorithmic correctness? | [ ] Yes | [ ] No | [ ] n/a | This applies to all requests that ask for performance improvement and/or architecture porting. |
| 3.2 | Necessary computing time provided? | [ ] Yes | [ ] No | [ ] n/a | e.g., DKRZ project and/or local cluster |
| 3.3 | Results can be fully published open access | [ ] Yes | [ ] No | [ ] n/a |  |
| 3.4 | Acceleration of the underlying numerical algorithm | [ ] Yes | [ ] No | [ ] n/a | This only applies to requests that aim for more than technical support. |
| 3.5 | Documentation issues |  |  |  |  |
|  | 1. Is a **code documentation** available (software design and implementation details explained)?
 | [ ] Yes | [ ] No | Please provide links |
|  | 1. Is a **user manual** available (instructions for the model on how to build, install, configure, run, etc.)?
 | [ ] Yes | [ ] No | Please provide links |
| 3.6 | System for traceability, reproducibility, and version control | [ ] Yes | [ ] No | [ ] n/a | Please provide link to e.g., GitHub |
|  | 1. If yes, which one? How to access?
 |  |  |
|  | 1. If no, is gitlab.dkrz.de a solution?
 | [ ] Yes | [ ] No | [ ] n/a |  |

# Scientific criteria

## Scientific significance of the model / software

[TEXT]

## Will the proposed work improve the quality of simulations (e.g., by enabling users to achieve unprecedented accuracy)?

[TEXT]

## Will the adaptations open new scientific areas, or do they hold the potential to go beyond the current state of the art?

[TEXT]

## Dissemination of model / software

### How many people are using your model/software? (Please provide links to Earth-system science related publications.)

[TEXT]

### How many institutions have made an institutional commitment for the model/software? In which form is the commitment available? If there is no written commitment, please describe the form of the commitment and provide links (user groups, joint projects, software support for a certain time etc.).

[TEXT]

# HPC and exascale systems

Please, provide us with concrete measurements on the scalability of the model to date.

## Description of previous use of HPC within the model / software

[TEXT]

## Motivation for the use of exascale systems

[TEXT]

## Scaling behavior (data and/or plots achieved on which system?)

[TEXT]

# Intended work

Please, explain the limiting factors for the current state of the software, as well as the ideas about what performance improvements you are expecting.

## Target architecture

[TEXT]

## Methods to be used

[TEXT]

## Criteria for fulfillment

[TEXT]

# Schedule

Please, keep in mind that our programmers might need 2 - 4 weeks to get to know the models/libraries and to do the general profiling/analysis of the model code.

|  |  |  |
| --- | --- | --- |
| Task nr. | Task | Duration |
| 1 | Getting to know the code | 2 weeks |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| … |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Further information

Here is room for additional content that you feel is important to this application, but that you have not yet been able to accommodate elsewhere in this application.

[TEXT]