**[Form 2b]**

[Last Updated: 2020/8/5]

**RIKEN Supercomputer System: Detailed description of the project**

**(General Use project)**

* This document must be filed with the application form for General Use (Form2a).
* This document will be reviewed.

**Name of project representative：**

**Laboratory in RIKEN:**

**Position in RIKEN:**

**Project name:**

**Related Project ID (Last FY or Quick Use project):**

**Names and Laboratories of all members**

If the primary employer of the member is not RIKEN (e.g. visiting scientist, student trainee), describe the both laboratories.

Example: John Smith (1), Jane Smith (1, 2)

(1) AAA Center, BBB Laboratory, (2) Department of ZZZ, Graduate School of YYY, ZZZ University

1. **Research description**

Please describe the following sections in a comprehensible manner so that they can be understood by researchers in other fields. You can attach schematic drawings, graphs, illustrations, etc.

* 1. **Scientific background, research purpose, scientific characteristics**
  2. **Research plan, computation methods and expected achievements**
* Describe the actual roll of each member.
* If some members are non-fulltime personnel (e.g. visiting scientist, student trainee), please describe their rolls in the collaborative research with host laboratory.
* If you have conducted a related research using supercomputer systems (in RIKEN or others), provide current research situation and future schedule.

1. **Application of CPU resources**
   1. **Necessary computation time**

Describe necessary computation time for each resource. Please round up to kilo (=103) core hour unit (e.g. 12,345K core hours).

* **BW-MPC: kilo core hours**
  + The upper limit: **29,434** kilo core hours (10% of the total CPU resources)
  + The total CPU resources of BW-MPC: 294,336 kilo core hours = 33,600 core \* 24 hours \* 365 days

**Remarks**

* In this application (FY2020 2nd), BW-MPC is acceptable 25% of the total CPU resources in this FY.
* Allocated computation time is not guaranteed to be consumed.
  + About 130% of the total CPU resources in this FY will be allocated.
  + Usage by other users and maintenance of the system will affect the consumable computation time of user’s project.
  + For year-round use, we will adjust as if half of the allocated core hour was consumed at the beginning of the second half of the fiscal year.
* Each user and project cannot apply more than 10% (BW-MPC) of the computational time of resource respectively.
* Computation time is a total of “number of cores \* elapsed time” for all jobs. For example, if you wish to run 500 jobs on 1024 cores for 24 hours, your computation time will be 1024 x 24 x 500 = 12,288 kilo core hours. If you run multiple jobs using the different numbers of cores, write a total number.
* Users should apply for General Use to use 1% or more of the computational resources of BW-MPC.
  + General use projects of ACSL will not be recruited. If you require more than 1% of the computational resources of ACSL, you will have to apply by e-mail. <(http:/i.riken.jp/en/supercom/support/acs>)
* It costs 700 million JPY for the operation of the supercomputer system in a year.
  1. **Justification for the computation time you requested in section 2.1.**
* Please describe the demand of the number of jobs computation time you mention in 2.1. Describe the basis and necessity of the number of parallelization and jobs.
  + Describe the necessary computation time of each member. Core hours should be described for each subsystem.
* Please describe using the values measured in the Quick Use project or last FY project
* Justification for computation time is treated as important by the Review Committee. Please provide adequate explanation.

Example: My fluid computation on 1024 cores took 24 hours to complete. Since I wish to run this job with 500 different parameters, I will need 12,288 kilo core hours as I requested above.

1. **Reference Publications**

* List publications you have made pertinent to this research, if any.
* You can upload only one reprint (PDF, Microsoft Word, etc) when you submit the application by online.