ACCESS PROTOCOL TO THE SPANISH SUPERCOMPUTING NETWORK

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ACCESS PROTOCOL TO RES RESOURCES

This document details the protocol for access to the supercomputers, data management infrastructures, and quantum technologies of the Spanish Supercomputing Network (RES), including MareNostrum installed at BSC-CNS. The methodology is based on criteria of efficacy, efficiency, and transparency.

1) Evaluation procedure

Similar to national plans and other public calls, a double-filter system is established:

A. Initial peer review by the Agencia Estatal de Investigación (AEI) of the general project in which the specific activity involving the use of RES resources is framed.

   The AEI will not have to provide an opinion in the event that the general research project submitted has already been positively evaluated in competitive public calls by one of the RES-validated evaluation agencies.

B. Evaluation by the RES access committee of the specific activity, which must have detailed objectives and a defined completion time. The access committee is advised by a panel of technical experts and a panel of scientific experts, as well as experts in data management or in innovation.

   For activities granted access, RES provides access to supercomputers, storage capacity and some computing capacity (hardware and basic software), quantum technologies, and the knowledge and experience of the Operations team (systems and user support) to ensure the correct operation of user applications.

2) Application submissions

The BSC-CNS collects activity applications electronically (http://ww.bsc.es/res or http://www.res.es) and forwards both the activities and supporting documentation electronically to the access committee, to the panels of experts, and, where appropriate, to the AEI.

RES has the following access mechanisms:

a) Call for supercomputing activities and access to quantum technologies, permanently open and evaluated semi-annually. Activities that, due to computational needs, require access to resources for more than one period, may request continuation activities for an additional period, informing the access committee of intermediate results obtained so they can be reconsidered at the next evaluation and prioritization.

b) Call for data management activities, permanently open and evaluated annually, with access granted for a maximum duration of 3 or 5 years. For longer durations, access must be reapplied for.

c) Requests for computing activities associated with applications for European R&D projects. Researchers working at Spanish institutions who lead European projects may apply for access of two years' duration, to be used starting one year from the request. Assigned time can only be used if the European project (framework program) is funded. If not funded, the hours are returned to the competitive call. A limit per project of 3% of available resources per period, architecture type and resource, and an aggregate limit for all projects in each call of 5% is established. If requests exceed available capacity, the best projects must be prioritized or adequate amounts distributed among applicants, at the discretion of the Access Committee. Hours can be accumulated with pre-reserved and competitive hours, up to the limit of available hours in ordinary activities per period.

d) Call for supercomputing and quantum technologies activities for innovation in companies (spinoffs, SMEs and companies in general) and Spanish public administration, always open and evaluated semi-annually. This call will follow the calendar of supercomputing access calls, sharing resources up to a maximum of 20% of available resources.

e) Fast track access call to shared supercomputing and quantum technology resources, results-based evaluation, always open and evaluated weekly. This call gives access to a small, shared amount of resources, limited in total to 5% of RES' annual total capacity. Access to shared resources does not guarantee exclusivity of use or response time. The activity must have been positively evaluated in competitive public calls by one of the evaluation agencies validated by the RES. Applications will be technically evaluated, and access will be granted for a maximum duration up to the end of the current year. Upon the deadline, projects must submit a report of results so that the access committee determines the correct use of granted resources and decides if continuation is appropriate.

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Application for access to RES resources must be done in English and include:

- Description of the overall project, scientific or innovation, in which the activity is framed (maximum 1 page) with reference and ID in case of public funding.

- Description and justification of the specific activity for which RES support is requested (maximum 2 pages).

- Short CV of the principal investigator of the applying group, including references to the most relevant publications (up to 5) in the last 5 years.

- Technical description of the software to be used, resources requested on the offered RES equipment, and the activity's data management plan (DMP).

There is an immediate acknowledgment procedure for all applicants and the response time adjusts to the evaluation periodicity.

3) Evaluation of Applications and Resource Assignment

The basic criteria for granting projects using RES resources:

A. Relevance of the global project within which the proposed activity is framed **(20%).**
B. Justification of the proposed activity and of the calculations and/or the data management to be carried out at RES for the achievement of the global project (**30%).**
C. Scientific or innovation quality of the applying group **(10%).**
D. Experience and capacity in high-performance computing or data management **(10%).**
E. Actual necessity for supercomputing to perform the calculation or need for data services **(20%).**
F. Technical appropriateness of the project to RES resource architecture **(10%).**

In proven cases of groups without experience, criterion D will not apply. For such activities, point 3 will have a total weight of 20%.

After receiving the initial AEI evaluation (when required), internal evaluation and prioritization is carried out by the access committee. The access committee has six members, appointed for four years with 25% annual renewal. This appointment can be revoked by the Executive Committee if justified.

Its composition is the following:

- An external manager to BSC-CNS with extensive innovation management experience.
- A representative of the AEI.
- A supercomputing expert from RES, external to BSC-CNS.
- A supercomputing expert member of BSC-CNS.
- A data service/management expert from RES, external to BSC-CNS.
- A data service/management expert member of BSC-CNS.

Expert panelists for supercomputing or data services only participate in access evaluations for those services, respectively.

The external innovation manager and AEI, Agencia Estatal de Investigación representative participate in all sessions.

The access committee is advised by two panels: a science and innovation expert panel (composed of renowned scientists or innovation managers within and outside Spain), and a technical panel (composed of a representative from each institution attached to RES).

- Expert panels are appointed for three years, with a partial annual renewal of one-third. Revocation by Executive Committee is possible if justified.
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The expert panels are divided into eight areas:

- Astronomy, Space and Earth Sciences
- Life and Health Sciences
- Physics
- Engineering and mathematics
- Chemistry in heterogeneous and solid phase
- Chemistry in homogenous phase
- Data Management
- Innovation

The panel of experts is composed of scientists and innovation managers with outstanding track records and experience in managing research, development, and innovation projects, including participation in national programs and as managers within the AEI.

- Each scientific area in the expert panel has a coordinator, an assistant, and up to 16 experts in specific areas of knowledge, of whom up to 8 may participate in each call.
- Data management area: 8–10 renowned external experts to BSC-CNS, including coordinators from the six scientific panels (who review only the scientific part of proposals).
- The innovation area is composed by 8–10 renowned external innovation managers, including the six scientific panel coordinators (who review only the scientific part).

Committee and expert panel members are proposed by MICINN representatives on the access committee. The expert panel can request AEI remote peer review.

Expert panels prioritize projects in their respective fields and send their recommendations to the access committee, which issues the final report. This report prioritizes resources assignment. High-quality activities may be left out due to resource limitations; the access committee may assign resources from the next period so that access is guaranteed without a new application.

The committee seeks to assign maximum resources to the best-rated activities, ensuring benefit from RES capabilities on short schedules. The report also explains reasons for granting or denying access.

There is no procedure to dispute technical or scientific reviews, but disputes due to misinterpretation of information are allowed. For these rare cases, a small reserved amount of resources in each call is set aside by the committee, possibly 0.1% of total resources, to be allocated over the machine providing the most resources during evaluation.

Anyone who feels their proposal was misinterpreted can address the RES manager by brief written submission. The RES manager will forward the claim to the relevant panel coordinator, who will review it for misinterpretation, consulting the original evaluators if needed. If accepted, the coordinator will present the case to the access committee, which will manage resource allocation up to the reserved amount. These may not be the requested nor sufficient resources, but are meant as a palliative, not a corrective, allowing research to continue. Unassigned reserved resources may be used by non-prioritized users.

Accepted projects may result in additional scientific collaboration projects between the external research group and BSC-CNS or other institutions attached to RES, especially for optimization and parallelization.

4) Beneficiary entities

RES resources are awarded on excellence. Universities (public and private) do not pay for RES resource use.

Business projects are held to quality standards similar to public projects. Activities with business participation in public open R&D projects that received public funding are granted free access.

Activities relating to the EuroHPC AI Factories European AI model development program are governed by that program's conditions. Currently, SMEs and start-ups can access resources free of charge for innovation; other industrial applications may receive commercial access.

5) Strategic and extraordinary projects

The BSC-CNS Executive Committee, at the request of a partner administration, may declare specific computing resource projects “Strategic Projects” if they are of special interest for the proposing administration’s science, technology, and innovation policy, e.g., for international impact. Strategic Projects must present annual activity and results reports to RES management with resource forecasts for BSC-CNS Executive Committee review. These projects must still undergo standard evaluation to safeguard scientific/innovation quality.

Innovative projects requesting a significant share (over 5% of any machine/partition) must obtain the BSC-CNS Governing Council’s approval as “Extraordinary Projects” for special policy interest, e.g., social impact. This may only be granted once per year, without renewal. Such projects are subject to adequacy and relevance evaluation and prioritized accordingly. The Governing Council will be informed post-project on use.

6) User Obligations

RES users automatically commit to:

- Sending RES an electronic copy of scientific publications where RES resource use was decisive.
- Acknowledging RES support in scientific publications using the recommended text in the Intranet.
- Compliance with RES resource usage, security, and confidentiality rules.
- Not conducting business with results obtained via RES resources under “Public Research” format.
- Providing annual information and documentation (e.g., videos, presentations) for dissemination use by RES.