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Partnership for Advanced Computing in Europe

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Initial Report on the Peer Review Process

Final

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Abstract:	PRACE will operate an evaluation process based on peer review in order to ensure the scientific quality of proposals and that its resources are allocated in an effective and efficient manner. This deliverable focuses on defining a set of principles for the peer review process that PRACE will operate and begins to map out the processes that will be followed. Deliverable D2.4.2 will focus on the detail of specific parts of the process for peer review.

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References and Applicable Documents

[1] HET peer review document http://www.hpcineuropetaskforce.eu/files/HET-PeerReview%20version%201.0%20FINAL%20(18.1.2007).pdf
[2] EPSRC principles of peer review http://www.epsrc.ac.uk/ResearchFunding/ReviewingProposals/Principles.htm

List of Acronyms and Abbreviations

BSC	Barcelona Supercomputing Center. Spanish national supercomputing facility.
CSC	Finnish IT Center for science. Non-profit company providing IT support and resources for academia, research institutes and companies.
CSCS	Swiss National Supercomputing Centre.
DECI	DEISA Extreme Computing Initiative. HPC access for European grand challenge applications in all areas of science and technology.
DEISA	Distributed European Infrastructure for Supercomputing Applications. EU project by leading national HPC centres.
EPSRC	Engineering and Physical Sciences Research Council. UK agency for scientific research and HPC funding.
GCS	Gauss Supercomputing Centre. Alliance of three German national supercomputing centres: NIC – Juelich, LRZ – Garching and HLRS – Stuttgart.
GENCI	Grand Equipement National de Calcul Intensif. Legal entity funded by the French Government, CEA, CNRS and French Universities for promoting HPC usage in fundamental and industrial research.
HET	High Performance Computing in Europe Taskforce. Taskforce by representatives from European HPC community to shape the European HPC Research Infrastructure. Produced the scientific case and valuable groundwork for the PRACE project.
HPC	High Performance Computing. Computing at a high performance level at any given time; often used synonym with Supercomputing.
HPC-Europa	Consortium of six leading (HPC) infrastructures and five centres of excellence providing transnational access; EU project.
IT	Information Technology.
ITC	Information Technology and Communication.
NCF	Netherlands National Computing Facilities. Foundation for promoting technical and scientific development through HPC usage.
PRACE	Partnership for Advanced Computing in Europe; Project Acronym.
Tier-0	Denotes the apex of a conceptual pyramid of HPC systems. In this context the Supercomputing Research Infrastructure would host the tier-0 systems; national or topical HPC centres would constitute tier-1.

UC-LCA	University of Coimbra-Laboratory of Advanced Computation. Portuguese HPC Center.
UNINETT	Norwegian Research Network. UNINETT Sigma coordinates the Norwegian infrastructure for computational science.

Executive Summary

In order to maximise the impact of the major hardware investments in tier-0 centres that PRACE will make it is vital that these systems are used by projects with the highest potential scientific impact. Hence the guiding principle for resource allocation will be the **scientific quality** of the proposal and the **need** to use the tier-0 system.

In order to ensure that the process is open to European researchers on an equal, non-discriminating basis this deliverable has developed a set of "Principles for Peer Review" for PRACE. These principles were agreed to be the most important to follow in all of the peer review activities within PRACE:

- Transparency
- Expert Assessment
- Confidentiality
- Prioritisation
- Right to Reply
- Managing Interests
- No Parallel Assessment
- Ensure Fairness to the Science Proposed

The peer review process will be developed to completion in deliverable D2.4.2 where specific areas of work will include:

- Assessment criteria
- How to distinguish between the quality of research and criteria for HPC access
- Committee/panel structure and responsibilities
- How to ensure efficiency & flexibility of peer review process
- How to ensure responsiveness of the peer review & allocation process
- Proposal submission process
- General peer review management (PRACE office)
- Ensure Fairness to the Science Proposed

1 Introduction

This document describes the set of principles that will form the basis for an integrated yet independent peer review system for PRACE that will ensure a one-stop shop for access to European ITC resources. It then goes onto begin the development of the peer review process that PRACE will use.

The first step in setting up the peer review system was defining a set of principles for the peer review system that all countries can agree to and would be prepared to work with. The main inputs to this deliverable have come from the HET peer review document[1] and details on current peer review practices that were provided by participating countries and existing pan-European HPC organisations such as DEISA and HPC-Europa (see Annex 1).

2 Assumptions Made

As the full peer review process for PRACE is very much dependent on the funding and usage models that are still under discussion and will be decided in the first year of the project within work package 2 (Organisational Concept of the Research Infrastructure), some assumptions have to be made in the development of this deliverable. We do not exclude the possibility that the assumptions used in this initial report on peer review will need to be adjusted according to future decisions taken by other work groups in work package 2. One of the adjustments envisaged will be the possible need to consider quotas per country or any other quota methodology decided by the funding and usage models to be adopted by PRACE. For this reason we focus on the peer review principles in this deliverable - as they will be valid whatever funding and usage model is chosen - and just state the basic structure of the peer review process.

This document is based on the following assumptions that should be kept in mind when reading the next sections:

- Any PRACE machine will have X% available for allocation by PRACE.
- It is only this X% that the PRACE peer review process will apply to.
- Access to the PRACE machine is granted on the basis of scientific merit (the peer review process envisages no national quotas for usage; however, if this were to turn out not to be the case then the principles would still be valid for all funding strategies).
- It is envisaged that there will be a “PRACE Office” that will manage the peer review process.

3 Guiding Principles for Resource Allocation

In order to maximise the impact of the major hardware investments in tier-0 centres that PRACE will make it is vital that these systems are used by projects with the highest potential scientific impact. Hence the guiding principle for resource allocation will be the **scientific quality** of the proposal and the **proven need** to use the tier-0 system. PRACE will achieve this by establishing an **independent evaluation system based on peer review** to allocate its resources.

4 Principles for Peer Review for PRACE

Before listing and defining the principles we needed to define what we meant by a "principle". According to the *Oxford English Dictionary* the word principle is defined as:

> "a fundamental truth or proposition serving as the foundation for belief or action"

With this definition in mind we have taken the principles for peer review to represent the fundamental building blocks that will form the foundation for the PRACE peer review system. With reference to documents such as the HET paper on peer review[1], the EPSRC principles of peer review[2] and the documents in Annex 1 a process of consultation and prioritisation was carried out within the task 2.4 (see contributors in page i) team. Following this there was agreement on 8 principles for peer review and their definitions (see Table 1).

PRINCIPLE	DEFINITION
Transparency	The criteria for assessing proposals and details of the peer review process will be published before applicants submit proposals, defining how the peer review process will operate and be managed.
Expert Assessment	Expert peer reviewers will be used to assess the individual merit of all proposals against the published criteria.
Confidentiality	Proposals will be treated in confidence by the PRACE office and those who advise them will be required to do the same. The identities of all peer reviewers shall remain anonymous.
Prioritisation	Proposals will be prioritised for access by assessing the merit of each proposal against that of others and the criteria for assessment.
Right to Reply	Applicants will be given the right to reply to the expert reviewers' written assessments prior to proposals being prioritised.
Managing Interests	All participants (including the applicants) will be required to declare interests when carrying out peer review activities so that any conflicts can be identified and managed.
No Parallel Assessment	Parallel assessments of a proposal's merit will not be conducted.
Ensure Fairness to the Science Proposed	The peer review will be fair to the science, rather than to an individual applicant, institution or country.

Table 1: Principles for PRACE Peer Review.

4.1 Additional Information on the Principles

4.1.1 *Transparency*

Transparency essentially means that all applicants "know before they go", i.e. they know what to expect from the peer review process before they submit their proposals and also that it will not change half way through. This will mean that the assessment criteria and the set of rules to be followed during the complete peer review process will be made public and accessible to all applicants. A website dedicated to the PRACE peer review process should be created and maintained by the PRACE Office. Dissemination of the full peer review process should be done through the PRACE Office dissemination channels.

Transparency is necessary in order to ensure that all applicants receive the same level of high quality service from the peer review process and will help to manage applicants' expectations in terms of timescales and decision making.

4.1.2 *Expert Assessment*

In order to ensure that the best quality science is enabled, PRACE will make its allocation decisions on the basis of expert peer review advice. The exact form that the expert assessment will take will be decided in D2.4.2 including who the peer reviewers will be and how they will be selected as well as the panel structures that PRACE will operate.

4.1.3 *Confidentiality*

The content of all proposals will be treated in the strictest confidence by the PRACE Office and by the expert reviewers. Similarly, peer reviewers' identities will remain anonymous to applicants. This means that all interchanges of correspondence between peer reviewers and the applicants will go through the PRACE Office, as well as all necessary management activities from when proposal is submitted until final decision is made.

4.1.4 *Prioritisation*

In order to ensure the transparency of the peer review process and the decision making it is vitally important that proposals are prioritised against each other with direct reference to the published assessment criteria. This should help to ensure that the best quality science is supported and should deter "cherry picking" of specific proposals from various prioritised lists.

4.1.5 *Right to Reply*

The applicants will be given the right to make a written response to the anonymous reviewers' comments. This is primarily to correct any factual inaccuracies in the reviewers' comments but also to allow the applicant to respond to any specific criticisms or suggestions of the reviewers. The applicant's response should be treated as a key input to the prioritisation process together with the reviewers' comments, the initial research proposal and any other documents deemed necessary.

4.1.6 *Managing Interests*

In order for people to have faith in the peer review process it is important that conflicts of interest are identified and managed appropriately. In the context of peer review of a research

proposal a conflict of interest might arise, for example, if a reviewer has (or has had in the past): a close working relationship with the applicant(s); financial or personal connections with any individual(s) in the organisation submitting the proposal (i.e. the beneficiaries of any decision to award access). Another type of conflict of interest applies to proposals that include issues subject to confidentiality (such as commercially confidential information). The acid test is whether a member of the public, knowing the facts of the situation, might reasonably think the judgement of the reviewer could be influenced by the potential conflict of interest.

4.1.7 *No Parallel Assessment*

In order to ensure that we have a one-stop shop for access to European ITC resources, proposals requesting PRACE resources will only be assessed by PRACE – there will be no parallel peer review allowed by national organisations or any other organisations. The PRACE organisation, through the PRACE Office, will be the only entity responsible for the peer review and for granting access according to the funding and usage model established by PRACE.

4.1.8 *Ensure Fairness to the Science Proposed*

Here we want fairness to relate to the science being proposed – we want to support the best science based on scientific merit and impact regardless of where it has come from. Within reason the PRACE portion of any machine should not have access restrictions, or quotas that would restrict a proposal being supported in favour of other proposals considered to have less scientific merit and impact. At present the funding and usage models for PRACE have not yet been decided but, nevertheless, this principle needs to apply to any funding or usage model to be decided for PRACE. It should be made clear that fairness should not mean that every country gets a rigid "fair share" of the system on the basis of investment, size or other non-scientific criteria. At the same time we need to recognise that the funding and usage models decided for PRACE may force a certain degree of pragmatism in the final decision making process.

5 Developing the Peer Review Process

Having defined the overarching principles for the peer review system the detail of the peer review process that sits underneath these principles needs to be built. This section looks at some of the current peer review practises across Europe and tries to bring together some common themes that can feed into the PRACE peer review system, as well as analysing the peer review process proposed by HET.

5.1 Summary of Current Peer Review Practises

In order to get a feel for how things are done at the moment within Europe the five PRACE principal partners (Germany, France, Netherlands, Spain, UK), the task 2.4 participants (Norway, Poland, Portugal), selected general partners (Switzerland and Finland) and the current pan-European HPC projects (HPC Europa and DEISA **-** *DEISA Information was provided by Edinburgh Parallel Computing Centre in their role as leader of DEISA2 WP7*) were asked to provide information on their current peer review practices. The full responses are presented in Annex 1.

From the information provided the common themes to come out from the peer review processes currently carried out across Europe are:

- Technical and scientific assessments are the norm in many countries;
- It is common for different types of allocation (mainly defined by size of request) to have different levels of peer review;
- Scientific excellence is the main assessment criteria;
- Several countries use resource allocation panels to review and prioritise proposals;
- It is common to have separation of the funding decisions from the peer review and prioritisation recommendations.

Based on the information provided a breakdown of the elements of peer review employed by country is shown in Table 3. (It should be noted that this is based on an initial analysis of this information and is by no means a complete record of the current processes – the absence of a "Y" against a country does not necessarily mean it does not adopt that procedure). A more detailed consultation process is in preparation and will play an important role in the development of the detailed peer review process for PRACE in D2.4.2.

Country	Technical Assessments	Different Types of Allocation	Scientific Assessment	Resource Allocation Panel	Separation of Funding Decisions from Peer Review
Finland	Y	Y	Y	Y	
France			Y	Y	Y
Germany	Y		Y		
Netherlands	Y	Y	Y	Y	
Norway		Y	Y	Y	
Poland		Y	Y	Y	
Portugal			Y	Y	
Spain			Y	Y	Y
Switzerland	Y	Y	Y		
UK	Y	Y	Y		Y
DEISA		Y	Y		Y
HPC-Europa	Y		Y	Y	

Table 2: Elements of current peer review process by country.

5.2 Analysis of HET Proposed Peer Review Process

The HET peer review process proposes that a Board is responsible for deciding which type of allocation "channel" is adopted. It may choose a single channel where applications from different scientific areas are submitted and assessed alongside one another; or, it may decide to have multiple channels (i.e. separate calls for separate scientific areas, or for different machines).

Each allocation channel would have a separate Scientific Steering Committee (SSC) which is responsible for finalising the call for proposals as well as finalising and approving ranking and resource allocation. Beneath the SSC would be the Scientific Committee (SC) that selects

referees for projects and establishes the ranking of proposals and proposes feedback to applicants. The review process could be carried out once per year or up to three times per year.

The assessment criteria proposed by HET were: scientific excellence; demonstrated need for Tier-0 level resources; proven feasibility of computation – ALL of which have been identified in the PRACE peer review system.

5.3 Foundations for PRACE Peer Review Process

In the process of deciding on the principles there were several other points that were raised as being important to the PRACE peer review process. Table 3 classifies and explains these points, which resonate strongly with both the current practices and the HET proposal outlined in Sections **5.1** and **5.2**.

Point	Classification	Explanation
Scientific excellence	Assessment criteria	The main criterion is scientific excellence, the principle used to ensure this is *Expert Assessment*
Demonstrated need for tier-0 level resources	Assessment criteria	This is more of a *technical* assessment criterion that should distinguish between the quality of research as such and the proven need for tier-0 access. Essentially corresponds to asking "*should* tier-0 resources be used for the research proposed?"
Proven feasibility of computation	Assessment criteria	This is more of a *technical* assessment criterion that should distinguish between the quality of research as such and the viability of using tier-0 resources. Essentially asking "*can* this be done on a tier-0 system" (e.g. are the codes suitable for the tier-0 system? Is the "necessary support software" installed in the tier-0 system?)
Efficiency of resource utilisation	Usage Strategy/ (Assessment criteria)	The usage strategy determined in task 2.3 (Specification of Funding and Usage Strategies) should take this into consideration (but can also be a more technical assessment criterion - is a particular tier-0 system suitable for the proposal?).
Responsiveness of allocation process	Process	This is a facet of the peer review process that should ensure that the allocation process is flexible and able to respond in a timely manner in order to exploit scientific opportunities and avoid unnecessary allocation delays.
Suitability	Process	Use a peer review process that is appropriate to the type of proposed research and in proportion with the investment and complexity of the work.
Separation of duties	Process	Separate peer review of proposals against the assessment criteria from making funding decisions. Those acting as peer reviewers will not also be responsible for the funding decision.

Table 3: Classification of important points.

PRACE will operate an independent peer review system based on the principles proposed in this document. In terms of the process, scientific excellence will be the major criterion in assessing proposals but the need to distinguish between the quality of research as such and the criteria for HPC access will also be of great importance. It is therefore proposed that technical assessments as well as scientific assessments of proposals will be undertaken in order to ensure that the best and most efficient use is made of the PRACE machine(s). The detailed scientific and technical assessment criteria will be worked up in D2.4.2 following further consultation with the participating countries.

It is also proposed that PRACE will separate the funding decisions from the peer review process, i.e. those acting as peer reviewers will not also be responsible for authorising the funding decision. This is analogous to the system proposed by HET and already used by several countries. The precise nature of the committee/panel structure and their responsibilities will be developed in D2.4.2 taking into account the PRACE principles, the HET proposal, and with further consultation with the participating countries.

The PRACE peer review process will aim to have a responsive review and allocation process so that PRACE is able to respond in a timely manner to exploit scientific opportunities as they arise. This is tied into the efficiency and effectiveness of the assessment process and the suitability of the peer review. If different types of allocation were to be allowed (e.g. small scale feasibility, "standard" proposals, grand challenges) then the peer review employed should be in proportion with the investment and the complexity of the work. The applicants will have the right to reply to the referees' written comments prior to the prioritisation of the proposals.

It is proposed that there will be a PRACE Office and the management of all aspects of the peer review process, the proposal submission process, the servicing of committees/panels, and issuing of calls will be carried out by this office.

An initial flowchart of what the PRACE peer review process will look like is shown in Figure 1 which will be updated in light of further consultation with PRACE partners.

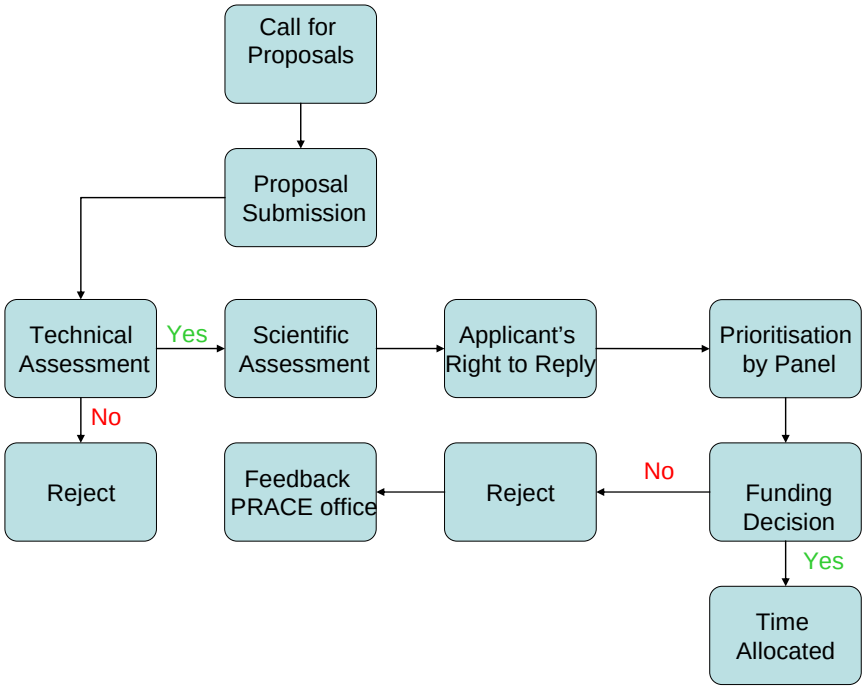

Figure 1: Potential flowchart for PRACE peer review process.

6 Conclusions and Next Steps

A set of eight principles for the peer review for PRACE have been defined and will form the basis for the detailed description of the peer review process that will be employed by PRACE. The foundations for the peer review process have also been established and these will be developed to completion in D2.4.2 where specific areas of work will include:

- Assessment criteria.
- How to distinguish between the quality of research and criteria for HPC access.
- Committee/panel structure and responsibilities.
- How to ensure efficiency and flexibility of peer review process.
- How to ensure responsiveness of the peer review and allocation process.
- Proposal submission process.
- General peer review management (PRACE Office).

A detailed consultation process with the PRACE partners as well as HPC-Europa and DEISA will be carried out in each of the above headings in order to fully develop the peer review process for D2.4.2.

7 Annex 1: Current peer review practices

As a starting point for gathering information on how peer review for access to HPC services is carried out across Europe at the moment the following countries and organisations were approached to provide details on their current peer review practices. They were asked to provide an overview rather than detailed information about their peer review process. The responses are presented in alphabetical order by country followed by pan-European organisations.

7.1 Finland (CSC)

CSC's process of allocating resources

Introduction

The computational resources of CSC are used for to two classes of projects: regular projects and grand challenge projects. About half of the resources are assigned to regular projects and the other half to grand challenge projects.

Regular projects

Small and medium-sized applications

Small and medium-sized CPU time applications up to 10 000 billing units (bu). (One billing unit is equal to one CPUh in Cray XT4 and HP cluster, on 5th May, 2008.) These applications are sent by e-mail to CSC's User Manager at *usermgr at csc.fi*.

Large applications

Large applications are larger than 10 000 bu (in total or per calendar year). These are forwarded to the CSC Resource Allocation Group for approval. The Resource Allocation Group accepts applications from researchers continuously and holds meetings mainly every three weeks.

Allocation principles of regular projects

The regular computing and data storing resources are allocated by the CSC Resource Allocation Group.

The applications are measured by their scientific effectiveness and quality (e.g. scientific publications). The Resource Allocation Group follows closely the national science policy and the priorities defined by the Finnish Government. The Resource Allocation Group reports to CSC's Board of Directors and the Ministry of Education of the allocated resources once a year.

The CSC Resource Allocation Group consists of a chairman, specialists in various disciplines, and persons responsible for the preparation of resource allocations. The specialists are nominated on ground of their scientific and technological expertise and experience. The resource applications will be accompanied by an advisory opinion from CSC's other specialists when needed.

Computational Grand Challenge proposals

CSC opens a call for proposals for computational grand challenge projects twice a year. The call is directed to academic researchers.

The call is aimed at high-impact scientific research that requires computational or data resources exceeding CSC's standard project quotas or level of services. Additional services may include priority execution arrangements, performance optimization or equivalent support.

Grand challenge projects have a fixed duration, which means that the project resources have to be consumed before a fixed date, dictated by the biannual call cycle. The projects will be executed in cooperation with CSC, and a project group will be assigned to each project.

The proposals will go through a technical and a scientific evaluation. The evaluation is based on the listed evaluation criteria.

The technical evaluation is done by CSC's staff. All necessary data for the technical evaluation should be included in the proposal. The technical evaluation is carried out to ensure that the project is realizable with CSC's resources and that the project needs excessive resources.

The scientific evaluation is done with the help of CSC's Computational Services Customer Panel, comprised of Finnish research group leaders in several scientific disciplines.

The proposals that have been accepted will be announced publicly, and therefore a public abstract of the research plan is necessary. The proposals that have been rejected will be announced privately to the applicant. In case the applicant feels that the proposal has been misjudged, the applicant has the right of appeal.

Evaluation criteria

The evaluation is based on the following criteria:

- Scientific excellence of the research;
- Impact of the research (scientific, technological, economical, cultural, societal);
- Relevance of the applied resources for the research;
- Suitability of CSC's available resources for the research.

An overall principle is to favor research with the highest merits.

Additional credits are given to research programs that have the objectives of developing research environments; and are:

- Coordinating otherwise scattered research capacities; promoting multidisciplinarity, interdisciplinarity and where possible transdisciplinarity;
- Developing cooperation between researchers, funding bodies and end-users of research results;
- Increasing the international visibility of Finnish research in a joint effort;
- Promoting openness of scientific results.

Right of appeal

If the researcher is not satisfied with how his or her application has been handled, the researcher has the right of appeal to the CSC Resource Allocation Group by sending an e-mail to *resource at csc.fi*. The CSC Resource Allocation Group will handle any requests and either correct the mistake or give a response. If the researcher is unsatisfied with this response, the researcher then has the right of appeal to the CSC's Board of Directors.

7.2 France (GENCI)

A. Lichnewsky

This contribution is organized in two parts:

- Current peer review processes relevant to national HPC centres;
- General peer review framework and regulations being applied by the Agence Nationale de la Recherche[1] (ANR).

Therefore, processes internal to some organizations are not described here. The selection of contents is justified by the recent creation of GENCI (2007), and the fact that ANR, created in 2005, may be construed as the national model for running peer reviewed programmes.

Peer Review for national HPC centres

Since 1993, there have been 2 national HPC centres in France for public academic research, CNRS / IDRIS and CINES.

IDRIS: Is a service unit of CNRS, headed by its director, which is part of the STIC[2] department of CNRS[3]. Three bodies participate in IDRIS governance: the Administration Committee, the Scientific Council and the Users committee. Peer review is the responsibility of the Scientific Council.

CINES: Is a public body under the responsibility of the Ministry for Higher Education and Research. It is headed by its director, and three bodies participate to CINES governance: the Management Board, the Scientific Council and the Users committee. Peer review is the responsibility of the Scientific Council.

In order to facilitate work at the national level, 9 Scientific Thematic Committees (CT) are nominated nationally([4]), historically jointly by the Ministry in charge of Research and CNRS. They are constituted from experts in the field, thematic and computational. The presidents of the CTs participate to the Scientific Councils of CINES and IDRIS.

The mechanism is that applications are examined by the CTs, and based on the scientific evaluation and rankings performed by the CTs, the Scientific Councils of CINES and IDRIS propose allocations to their respective directors.

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[1] ANR : National Research Agency.

[2] STIC: Information and Communication Sciences and Technologies.

[3] CNRS: National Center for Scientific Research.

More details on http://www.idris.fr/eng/General/objectives.html

[4] Listed in the third paragraph.

GENCI has started its operations in 2007, and its responsibilities include the financing and ownership of national HPC equipment and organising the peer review process. A transition period has been started which will permit a gradual transition to a new and more integrated peer review process.
GENCI has been involved since 2007 in the peer review process for computer time in 2008, with the following results:

- Opening to the academic community of a share of CCRT, CEA's civilian HPC centre. The allocation process is supervised by a Scientific Council of which the presidents of CTs are members,
- Further opening of CT membership to CEA's scientists,
- Participation of GENCI in the three scientific committees (CCRT, CINES, IDRIS).

Further steps will be performed in 2008 in the direction of a wider involvement of GENCI, in accordance with the rapid increase of the share of GENCI owned equipment in the national HPC centres. Because of its mission, GENCI will also have the opportunity to improve the process for selecting the CT presidents and members and to ensure that the balance between thematic areas fits well the scientific policies of GENCI's partners, including the Ministry of Higher Education and Research.

ANR Peer Review processes

The ANR[5] is a public funding agency for research projects. It aims at providing funding based on calls for proposals and peer review selection processes. It is mentioned here because, although not directly involved in funding HPC, it is the most important example of peer reviewed research resource allocation in France.

The Peer Review Process of ANR involves:

- The Evaluation Committee, which examines projects after evaluation by 2 experts;
- The Strategic Orientation Committee which proposes a ranked list of selected projects;
- Final decision pertains to the director of ANR.

List of Thematic Committees

CP1 Environment
CP2 Numerical Fluid Mechanics
CP3 Combustion and Reactive media
CP4 Astrophysics, Geophysics, Solid Earth
CP5 Electromagnetism, Hot Plasmas
CP6 Applied Mathematics, Systems & Models
CP7 Organised molecular systems and Biology
CP8 Quantum Chemistry, molecular models
CP9 Physics, Chemistry and properties of materials

[5] http://www.agence-nationale-recherche.fr/Intl

7.3 Germany (GAUSS)

Until now, the German national HPC centres have independently defined and implemented peer review and allocation procedures for their respective resources. With the founding of GCS, the Gauss Centre for Supercomputing, the centres are progressing towards a harmonized national peer review system for the tier-1 centres. The following list contains the already agreed governance rules for the Gauss Centre:

1. Applications for compute resources are strictly evaluated according to their scientific excellence. There are no in-advance allocations or privileges for any Federal States, organizations, etc.

2. The proposed scientific tasks must be scientifically challenging, and their execution must be of substantial interest.

3. The implementation must be technically feasible on available computing systems and must be in proportion to the performance characteristics of these systems.

4. The scientist in charge (particularly the PI) must have a proven scientific record, and he/she must be able to successfully accomplish the proposed tasks. In particular, applicants must possess the necessary specialized know-how for the effective use of high end computing systems. This has to be proven in the application for compute resources, *e.g. by presenting work done on smaller computing system, scaling studies, etc*.

5. Preparative work, small separable problem sections as well as pre- and post-processing should, if possible, be performed on smaller computing systems.

6. The specific features of the high end computers should be optimally exploited by the program implementations. This is regularly checked during the operating time of the project.

7. All software packages and tools needed to complete the task must be available. Necessary acquisitions and licensing issues must be settled in advance with the computing centers.

8. It must be possible to adapt the operating concept of the computing systems to the proposed task profile.

9. The applicants commit themselves to disseminate the results of their scientific work in an appropriate manner (workshops, reports, web pages, etc.).

10. Submitted proposals and reviews must be kept confidential and may only be used for the reviewing process.

11. Reviewers must not have conflicts of interest.

12. Reviewers remain anonymous.

13. The *GCS* steering committee may approve deviations from these procedures (e.g. secrecy requirements in connection with industrial co-operation).

7.4 Netherlands (NCF) - Peer-reviewing procedures

Procedure/Criteria

Proposals are handled according to nature and extent. All applications are subject to a formal scientific peer-reviewing procedure (except for pilot projects) using scientific merit as main criterion. The Commission for Scientific Use of Supercomputers (CSUS) is responsible for the final funding decision based on the peer-reviewing reports. Program projects and/or applications requesting a large amount of allocation units are, besides the regular scientific peer-reviewing, also analysed by one of the members of CSUS with recognised expertise on the field of research of the application.

The assessment of all proposals is divided into two steps. The first one, coordinated by the NCF Office, consists of technical and scientific peer-reviewing. The second one is the final funding decision taken by the CSUS members during their periodic meetings.

Application types

Handling of the proposals depends mainly on their nature and extent.

Regarding *nature* the proposals can be divided into pilot projects, individual projects, program applications and institute applications.

Pilot projects
Pilot projects are an appropriate means of ensuring rapid access to the supercomputer HUYGENS or to any of the other computer systems accessible via NCF to investigate the potential of running codes under test and their development on a supercomputer. Access is limited to a maximum of 5 000 PNH (processor-node-hours), but has the advantage of being readily available (within a few days). Results obtained during these projects might be used for supporting a normal (individual) application.

The funding decision for a pilot project should - given the short timeline for the decision – be seen as a provisional decision. If an applicant has reservations about that decision, there are two options. Either the applicant submits its request again, but now as an individual project application or as a program application (in both cases, the application follows a more extensive procedure that leads to a final decision), or has to present the reservations within one week after the date on the notification letter. A final funding decision must be reached within a month.

Individual projects
Regular individual applications are assessed by one or more reviewers. All pending applications are discussed in the next following meeting of the Committee for Scientific Use of Supercomputers (CSUS). This committee can also decide on interim funding for applications that are still at peer-reviewing stage. This interim funding is especially important for continuation applications to avoid compromising the continuity and efficiency of the undergoing scientific work.

It is not uncommon that new suggestions for improvements of the approach proposed in the application or in the software to be used come out from the assessment reviewer reports. This can contribute to the efficiency of usage of the national computing infrastructures.

There is no a priori limit to the amount of computing time requested in the applications. The only conditions being that the proposed scientific research has to be of good quality and the amount of required compute time needs to be properly justified in the application.

Program applications
Program applications are treated as normal applications. The only difference being that a research group assembles a number of projects into one single proposal. The advantages of this kind of application are reduction of the number of applications and consequently reduction of the associated paperwork.

Program applications are peer-reviewed by one or more reviewers.

Applications from institutes
Applications from institutes are intended for research institutes and university computing centres. Instead of submitting several pilot projects to NCF, ad hoc pilot projects can be carried out or foreign guests or visitors can install software or carry out small projects at the expense of the compute time budget of the institute. The advantage in this case is that instead of describing the details of the various projects in advance on a per application basis, this will be done afterwards. The amount of compute time available for applications from institutes is modest (about 10 000 to 50 000 PNU, depending on the size of the institute).

Regarding *extent* the proposals are divided into the following categories according to the number of allocation units – processor-node-hour (PNH):

Proposals requesting less than 30 000 PNH
These proposals are relatively small and in most cases are intended as code testing in preparation for larger projects. Rapid access to the supercomputer facilities is essential to avoid unnecessary delays in the research progress. To fulfil these needs these proposals are completely handled by the NCF Office technically and also scientifically, i.e. no expert peer-reviewing is requested and funding is awarded by the NCF Office. The CSUS is informed about all these proposals in the next following meeting independently of their status, i.e. in case they are still at the processing stage at the NCF Office or in case funding has already been awarded. CSUS can of course give their opinions regarding this type of proposals.

Proposals requesting between 30 000 PNH and 200 000 PNH
This type of proposals, considered as medium extent, are peer-reviewed by one external expert. After completion of the assessment file, including the proposal, peer-reviewing report and potential additions, these proposals are analysed in the next following CSUS meeting.

Proposals requesting between 200 000 PNH and 400 000 PNH
These proposals, besides being peer-reviewed by an external expert, are also analysed by one member of the CSUS whose expertise includes the scientific content of the proposal.

Proposals requesting more than 400 000 PNH
These proposals are treated as large proposals and at least two external peer-reviewers are appointed for peer-reviewing. One member of the CSUS, with recognised expertise on the content of the proposal, is also appointed as peer-reviewer and presents the report during the CSUS meeting.

NCF Office

NCF is responsible for handling all proposals from receipt until the complete assessment files are passed to the CSUS for final decision. After the final funding decisions NCF sends the grant offer letters and all necessary paperwork to the applicants. NCF is the contact point for the applicants during the evaluation process and also for all matters after the final funding decision.

The proposals are handled by the NCF according to the following steps:

Receipt
The proposals received through the NWO electronic system IRIS are first of all analysed at the NCF Office for completeness and technical quality (e.g. proven feasibility of computation, i.e. the codes proposed are adequate for the system to be used). If queries arise from this initial check, the applicants are contacted and the documents necessary for completing the proposal, for clarification regarding the codes proposed or for any other matters are required.

Peer-reviewing
The NCF is also in charge of the full technical and scientific peer-reviewing process, from deciding on the experts to be invited to peer-review the proposals until the final stages of the preparation of the assessment files to be sent to the CSUS. Technical peer-reviewing (e.g. proven feasibility of computation, i.e. codes proposed are adequate for the system to be used, necessary libraries are supported by the system, etc.) is in most cases addressed using the expertise inside NCF.

Scientific peer-reviewers are chosen between independent experts from national Universities and Institutes with recognised experience in the scientific field of the proposal. Peer-reviewing is based on the scientific quality of the proposals and in the need to use the required systems. The peer-reviewers are asked to fill up a report that can be passed on to the applicants if necessary and accompanies the proposal until the final funding decision by CSUS. For proposals that do not receive sufficient support from the reviewers, the reviewers' comments are passed on to the applicants who then have the right to respond to the comments. To maintain anonymity when the comments are passed on to the applicants the name of the reviewer is not included in the forms. Each proposal receives at receipt a reference number that accompanies all correspondence to the reviewers.

NCF sends the assessment file of each proposal to the CSUS for final funding decision.

Commission for Scientific Use of Supercomputers (CSUS)

During the meetings of CSUS, the assessment files of the proposals are analysed and a final funding decision is reached. Proposals requiring a large amount of compute time are also analysed by one of the members of CSUS. In some particular cases CSUS can invite the applicants to give a presentation of their own proposal. NCF sends the assessment files of all proposals received to the next following meeting of CSUS either for information (not yet fully processed proposals) or for final decision (fully processed proposals). The reports of finalised projects are also sent to CSUS for information.
In general CSUS meets 5 times per year.

Funding decision

The final funding decisions taken by the CSUS are communicated to the applicants by NCF in the form of a grant offer letter together with the grant terms and conditions. The grant offer is valid for one year after the datum mentioned in the letter.

7.5 Norway (UNINETT Sigma)

Research groups and projects that are financed through the Research Council of Norway or the Ministry of Education and Research can obtain allocations on the national resources in the e-Infrastructure. This includes research and education at the Norwegian universities, university colleges, and research organizations. Allocations are obtained by application. Applications are evaluated by a Resource Allocation Committee that is appointed by the Research Council of Norway. According to its mandate, the Committee shall strive to optimize the use of the resources through the evaluation of applications for allocations. The applications are evaluated on their scientific merit, need, and impact of using the infrastructure. The mandate also includes the stimulation of new usage of the resources. The Committee has a 3-year mandate.

One can apply for allocations for a six-month (allocation) period. There are two calls per year for applications for allocations, one in January/February for projects starting April, and one in July/August for projects starting October. Proposals for large allocations can request allocations for a twelve-month period. Proposals for large allocations must also demonstrate the efficiency of the (software) application.

Researchers can apply for allocations on multiple facilities.

Researchers can apply individually, but researchers from the same group and research groups with tightly coupled activity are encouraged to submit one joint application. Allocations that can be applied for are CPU-hours on the supercomputer facilities, (storage) capacity on the storage resources, and application support (including grid-enabling of applications), and any combination of these. Special needs for other resource parameters (e.g., memory requirements) must be stated in the application.

The Resource Allocation Committee uses 'overbooking', i.e., the total allocations assigned to projects exceeds the available capacity by a certain factor (typically 1.4). This is done because usually there are always projects that do not use their quota in whole or in part. In periods where there is a real shortage of resources, allocations that have not been used significantly may be reduced in size during the period (this is done in agreement with the projects).

The type of resources and amount of allocations requested in an application may be modified by the Committee. Considerations include the total available capacity compared to the total amount of allocations requested, the previous usage of the allocations by the research group, the recent scientific output by the group and the feasibility of using the requested resources. Once the application has been approved, the project obtains an allocation on one or more of the facilities. The allocation is shared by all the users that are connected to the project.

UNINETT Sigma takes care of the administrative tasks for the Committee and maintains the contacts with the research groups that have (or request) access to the infrastructure.

Projects must send in a Usage Report once a year. This report must include a summary of the activity of the past twelve months, including a list of publications for which the infrastructure was used, and a list of finished PhD degrees and master degrees.

The number of research projects on the supercomputer facilities has been fairly constant over the years and varies between 65 and 80. Many projects have been using the resources for a considerable number of years. Several tens of researchers are active on the facilities at any moment in time, while the total number of researchers connected to on-going projects is between 250 and 300.

7.6 Poland

Below is a short description of the peer review process in polish computing centres. The description is based on responses of three centres, but all Polish centres use similar procedures.

General rules:

- the computing centres for science in Poland are founded by the government;
- the computing centres are offering the computing power to the scientific community working in the public national science institutes or universities;
- every researcher/research group may ask for computational grant in every computing centre in Poland (separately);
- every computing centre makes its own decisions which and how much of the computational resources is assigned to the grant, following the local regulations;
- grants are usually for 1 year, then verified and reassigned if necessary.

Process:

- the grant proposal is sent electronically or via paper mail to the special board (with constant members, representatives of the centre employees and the science board);
- if necessary, some external expert may be asked for review, and then become a member of the group, as long as the grant goes on;
- the head of board assigns one appropriate expert to review the proposal;
- the whole board is making a decision based on the expert recommendation;
- sometimes the applicant will need to present the planned research computation in front of the board during the face-to-face meeting;
- the board assigns the hours of computation time to the grant, sometimes there are categories of grants (initial, standard and advanced) determining the amount of resources assigned and priorities of computations;
- in the beginning of each calendar year the users are asked to present the papers published (with results of computations);
- the grant is then verified, according to the number of publications and number of computation hours actually used, then category and hours assignments may change for another year;
- the grant manager may ask for change of its limits or category;
- if the grant proposal is rejected, the manager may appeal to the science board.

7.7 Portugal (UC-LCA)

The HPC facilities are modest in Portugal and there is almost no tradition to give out CPU time on the basis of an evaluation procedure of any kind. Hence, before describing our practice some contextualization is needed.

In Portugal there is one HPC centre offering services to the community in an organized way. The UC-LCA, that represents Portugal in PRACE, hosts the largest HPC facility in Portugal. The UC-LCA is integrated in the Centre for Computational Physics of the University of Coimbra (a research unit), but the computational facilities are used by a larger scientific community from the University as well as from other research institutions in Portugal. The computer system –
130 computation nodes Sun Fire X4100 (plus 2 management nodes)
2 x CPU AMD Opteron double "core" – total 520 processors
8 GB per computation node – total 1040 GB of RAM memory
6 TB storage capacity
Internal network Gigabit
External network Gigabit
Performance 1,6 TFlops HPL Rmax520 –
is in production since June 2007. The system is operated and maintained by the UC-LCA/Centre for Computational Physics, but no extra funding is given to the research unit by the national funding agency to keep the operation of the computer.

In spite of this, the UC-LCA always allowed the usage of its resources by the Portuguese scientific community in a very informal way (this was the case for the previous system of only 100 processors): the interested users just contacted UC_LCA, asking for permission to use the machine and essentially authorization was given. For the new computer a new procedure based on submission and review of projects has been implemented. A Scientific Committee was formed with 5 members. These are the Coordinator of the Centre for Computational Physics, the Director of the UC-LCA, plus 3 members of the University of Coimbra: one science computer engineer, one mathematician and one mechanical engineer, all with good experience in using advanced computer systems.

So far, only one call took place, hence our experience is extremely reduced. In July/August 2007 a call was opened and applicants had to fill out an online form. The refereeing process occurred during one week in September and the results were immediately communicated, so that the Project leaders could start using the system. Though the HPC resources were installed in Coimbra due to the efforts of the computational physicists, no privilege was given to these researchers – they had to apply on the same footing as the others. Priority was given to those who could pay for the CPU hours (though the fee was symbolic, 0.025€ / hour /CPU, some groups could not pay). In the first call a total of 3 million CPU hours were announced but the applicants asked for more than twice of that. This was surprising in the sense that the Portuguese HPC community is still very small, but there is a clear indication that if resources are available, a number of researchers are ready (and eager) to use them.

7.8 Spain (BSC)

Access Committee

The Access Committee is responsible for all decisions concerning the scientific use of MareNostrum. The members of the Access Committee are selected by the MEC (Ministry of Education and Science) and the Agencia Nacional de Evaluación y Prospectiva (ANEP - National Evaluation and Foresight Agency). The Access Committee is composed of a Core Team and four Expert Panels of prestigious Spanish scientists (external to BSC-CNS).

The four Expert Panels are based on the four-group classification system employed by the Spanish Foundation of Science and Technology (FECYT – Fundación Española de Ciencia y Tecnología): Astronomy, Space and Earth Sciences; Biomedicine and Health Sciences; Physics and Engineering; and Chemistry and Materials Science and Technology. The Expert Panels are composed of high caliber scientists that also have experience in the management of research projects. Each of the four Expert Panels consists of 10 experts and is chaired by a coordinator with the help of an assistant. The Experts Panel can request an ANEP peer review of a project when required.

The Expert Panels prioritize the activities of each of their respective areas and send their recommendations to the Core Team who publishes the list of approved users of MareNostrum on the BSC-CNS website. In 2006, the members of the Access Committee included:

Core Team
Victoria Ley Vega de Seoane *(Agencia Nacional de Evaluación Prospectiva)*
Pedro de Miguel Anasagasti *(Universidad Politécnica de Madrid)*
Ramón López de Arenosa *(Ministerio de Educación y Ciencia)*
Jesús Labarta *(Barcelona Supercomputing Center-Centro Nacional de Supercomputación)*

Biomedicine and Health Sciences Expert Panel
Coordinator Alfonso Valencia *(Centro Nacional de Investigaciones Oncológicas)*
Assistant Manuel Palacín *(Universidad de Barcelona)*

Chemistry and Material Sciences Expert Panel
Coordinator Agustí Lledós *(Universidad Autónoma de Barcelona)*
Assistant José María Pitarke *(Universidad del País Vasco)*

Physics and Engineering Expert Panel
Coordinator Pablo Ordejón *(Instituto de Ciencia de Materiales de Barcelona)*
Assistant Manuel Laso *(Universidad Politécnica de Madrid)*

Astronomy, Space and Earth Sciences Expert Panel
Coordinator José María Ibáñez *(Universidad de Valencia)*
Assistant Vicente Caselles *(Universidad de Valencia)*

7.9 Switzerland (CSCS)

Who can request time at CSCS

CSCS HPC resources are free of charge for the Swiss Universities, ETH Zurich, EPF Lausanne, the four research institutes of the ETH Domain, and the Swiss Universities of applied sciences.

Allocation Schemes

- ALPS Projects (large scale collaborative projects);
- Preparatory Projects;
- Production Projects.

Description of schemes

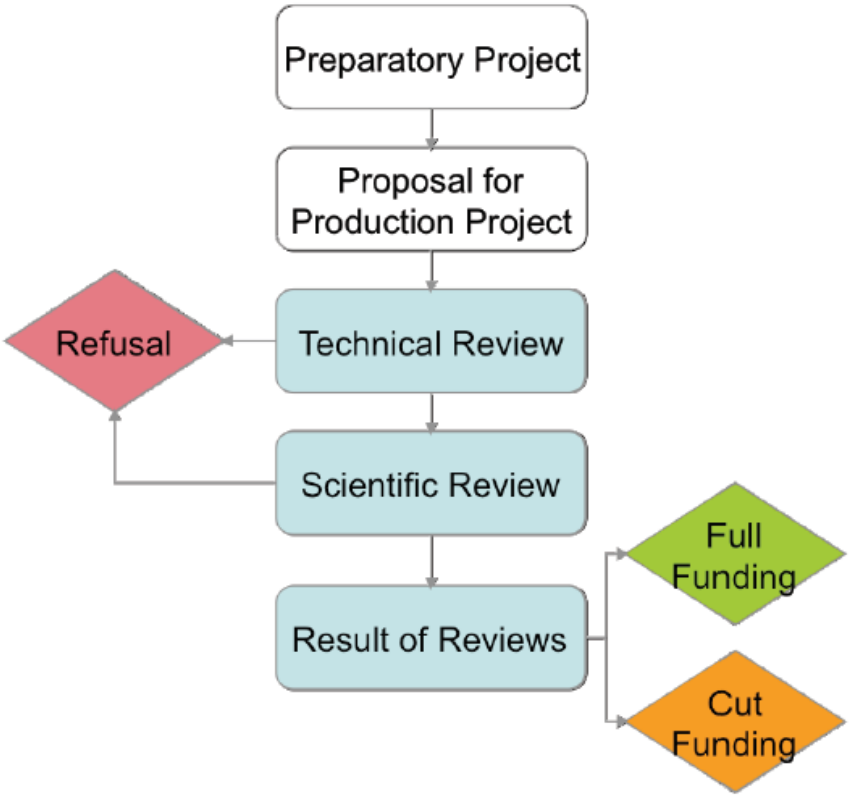
ALPS is targeted at grand challenge projects that could not be realized under a production allocation. Projects in this category are allocated time over a two year period.

Preparatory Projects are for users who would like to test new applications or algorithms. They are designed not only for users of CSCS who need to port and test their codes in order to prepare to a Production Project, but also existing users who wish to port and test a new code or application. These projects consist of a limited and finite amount of compute resources. They are allocated for 3 months, may be granted at any time and extended by a maximum of 3 months based on CSCS' evaluation of the request. Data produced during a Preparatory Project will be kept for a maximum of 3 months after the end of the project. A Preparatory Project may be submitted at any time during the year.

Production Projects are granted every 6 months. They are aimed at the production work for a specific scientific project. The calls are issued in spring and autumn. They have a maximum duration of 12 months and data will be stored for up to months after the end of the project. Production Projects have bi-annual calls for proposals that take place in spring and autumn.

Reviewing process

Project proposals for Production Projects are subject to a two-stage process consisting of a technical and a scientific evaluation. Preparatory Projects are only submitted to technical review.



The Technical Evaluation must establish whether the projects require HPC resources and would make efficient use of them. This review assesses the compute capacity required, the best suited platform, and the support required from CSCS to run the project. The evaluation will take into account requests for data storage as well as the past usage patterns and behaviour of the applicants.

The Scientific Evaluation focuses on the scientific value and the impact of the project, the validity of the methods chosen and the requested amount of resources. Projects that are supported by the National Fonds or similar agencies should be submitted with the pertinent scientific evaluations, as this will be considered in the assessment.

Evaluations for the Technical Review will rank projects as follows:
1 = pass; 2 = pass with reserve; 3 = fail

In order to be submitted for Scientific Review, projects must have passed the Technical Review. Should this not be the case, a Preparatory Project or a 3-month extension of an existing one can be envisaged.

Projects that successfully pass the Technical Review will be submitted to Scientific Review that will grade projects as follows:
1 = Fund fully; 2 = fund with max. cut of 50%; 3 = not to be funded

Projects will be allocated time according to the following chart:

Technical Review \ Scientific Review	Grades 1	2	3
1	Full Allocation	Cut Allocation (max. 50%)	Refusal
2	Preparatory Project	Preparatory Project	Refusal
3	Refusal	Refusal	Refusal

7.10 UK (EPSRC)

Current Peer Review Practices for High End Computing - UK

1. Services

There are currently 2 national HEC services in operation:

- HPCx provided by a consortium led by the University of Edinburgh, partnered by STFC (Science & Technology Facilities Council) and IBM.
- HECToR (started operation in October 2007) provided by the University of Edinburgh, Cray and NAG Ltd.

2. Access to high-end computing services

There are 2 classes of access to the high-end computing services:

- Peer-reviewed access (***Class 1***), where the researcher asks for computing resources to carry out his/her work. The researcher will have to submit a research proposal which will be peer-reviewed to assess the scientific quality and level of computing resource requested.
- *Pre* peer-reviewed (***Class 2***) for researchers who would like to "pump-prime" to prepare for a Class 1 application, and access for areas of research new to high performance computing to investigate the potential of running codes on a high-end computer.

There is a 20,000 AU (Allocation Unit) limit on the computing resource that can be applied for under Class 2 for up to 1 year. Only Class 1 applications are sent to the Research Councils, applications for Class 2 are sent directly to the services.

3. Peer Review of Proposals

Peer review is the method of assessment used for research proposals to ensure that research projects that are funded are of high technical merit, are relevant, timely and cost effective. The process described here is that adopted by EPSRC, and falls into two phases: postal peer review; and panel prioritisation.

EPSRC has established a College of experts, nominated by those active in the research field concerned, to provide a broadly based community from which to obtain independent, expert peer review advice. Each research proposal is sent to at least 3 referees for assessment, at least one from those nominated by the applicant, and the others usually from the College, along with additional specialist and international referees where necessary. Referees complete and return a standard assessment form. Research proposals that receive positive support from at least 2 of the referees will go forward for prioritisation by a panel.

Peer review panel membership is drawn both from the College and outside. Each panel comprises a group of experts whose broad experience provides the necessary coverage and balance for its members to be able to rank the proposals on the basis of the referees' reports and the applicant's response to these reports. The intrinsic quality of the application is always the overriding assessment criterion and hence the main factor in funding prioritisation. Other factors are also taken into account, including the ability of the applicants to undertake the research, viability and planning, relevance to beneficiaries, cost-effectiveness and dissemination plans.

The decision on which research proposal will be funded as a grant is taken by the relevant Programme Manager based upon the panel ranking and the funding available. Note that usually EPSRC's High End Computing (HEC) Programme Manager does not take part in this process – in the language of the OGC's (Office of Government commerce) Managing Successful Programmes, the HEC Programme Manager is responsible for delivering the HEC infrastructure, whilst the other Programme Managers are, in part, fulfilling the role of Business Change Managers.

Applicants requiring the use of one of the national high performance services will state in the research proposal the resources they need and give an estimate of the cost, based on a technical assessment obtained from the services prior to submitting the proposal. If the research proposal is subsequently funded, then this estimate is treated as a nominal cost and not included in the funding provided to the University (since funding for each of the services will already have been accounted for through a contract with the service supplier). Instead, the service allocates an equivalent amount of resource to the research grant.

7.11 DEISA

DECI (DEISA Extreme Computing Initiative) Terminology

In order to facilitate the identification and the support and design of new leading applications adapted to DEISA, the Consortium has a so-called 'Applications Task Force' (ATASKF), which is a group experts in high performance and Grid computing from each of the different DEISA member organisations.

Each DECI proposal is allocated a Home Site, where one of the DEISA partners is allocated to be the sole point of contact between the Principle Investigator (PI) and the DEISA Consortium.

If successful, the DECI project will be allocated one or more Execution Sites. These are the DEISA HPC platforms where the project will be executed. Typically the Execution Sites do not include the Home Site.

Call for proposals

The DECI Call For Proposals is announced at the start of May each year and is open for 2 months. This announcement is made through the DEISA website and each of the DEISA partners.

Over the course of the two month Call for Proposals, applicants are encouraged to contact the ATASKF via email (ataskf@deisa.eu) and/or obtain direct support from named individuals from on of the DEISA Sites.

Allocation of Home Sites

Once the deadline has passed, each proposal is then allocated a Home Site. This is done, primarily, through the geographic location of the PI. If the PI is not from a country which does not have a DEISA partner, then the Home Site is chosen depending on the location of the co-PIs. If the co-PIs are from countries which do not have a DEISA partner, then the Home Site is determined by the ATASKF in conjuncture with the DEISA Executive Committee.

When the Home Sites have been allocated, the proposals then undergo both Scientific Evaluations and Technical Evaluations.

Scientific Evaluations

Each Home Site's National Scientific Evaluation Committees meet in early September to discuss the proposals for that Committee's associated Home Site. The Committees provide recommendations to DEISA on the scientific importance of each proposal using the Scientific Evaluation Template, and ranks the proposals. If required, this Committee will also review, but not rank, other proposals where the PI is not be associated with their Home Site, but where any co-PI is associated with their Home Site. The reviews are completed by the end of September. The Scientific Evaluation Committees do not interact with the Technical Evaluation Committees (see below)

Technical Evaluations

The Technical Evaluations are carried out by the ATASKF members from the Home Site of each proposal. These members determine the proposal's requirement for the DEISA infrastructure, along with the specific technical requirements and the human resources required for enabling the application. The allocation of projects to particular Execution Sites is not necessary at this stage. These members contact the PI to remove ambiguities. The deadline for these Evaluations is the end of September. The Technical Evaluation Committees do not interact with the Scientific Evaluation Committees.

Centralised Acceptance Procedure

At the start of October, a joint meeting is held which decides, based on both the Scientific and Technical Evaluations, and on the amount of computing resources committed to DEISA by each DEISA site, which proposals are accepted or rejected. A third possibility is also possible, where a project is not awarded any cycles but is awarded DEISA staff effort to optimise and enable the associated codes.
NB: Prior to this meeting, each site has established the amount of compute resources is contributing to the DEISA.
Typically, proposals fail due to low ratings from their Scientific Evaluation Committee and/or Technical Evaluation. A Technical Evaluation may have a low rating due to no apparent requirement for the DEISA infrastructure, i.e. a request for cycles alone, or if the applications do not scale to 1000s of CPUs.

7.12 HPC_Europa

The application process and selection procedure is summarised in the figure below. The entire process is facilitated using a centralised online system. This provides a central portal for application forms, supporting documentation (Statements of Support, Technical Evaluation Forms and Host Support Forms), SUSP (Scientific Users' Selection Panel) members pre-selection reviews and the decisions of the selection panel.

The whole application process, from submitting an application through to the delivery of the final report, is based on a web based management tool. Each researcher registers him/herself and completes the application form electronically. Both the technical evaluation and the host evaluation forms are completed on line. The SUSP members also complete their pre-selection reviews online in advance of the selection meeting. We also plan to make available an on-line form for the statement of support from the head of the research group of the applicant, (currently requested and sent by email) which could be completed simply by clicking a link received by e-mail.

The recommendations of the pre-selection reviews can be easily extracted from the database and summarised in advance of the selection meeting, to help the meeting run as efficiently as possible (this is important as there may be a hundred or more applications to consider at each selection meeting).

To provide a complete record of the selection process for each application, the letter of acceptance or rejection is stored in the database as well. After the selection meeting the following documents are managed through the web site:

- EC Questionnaire. (a link to the EC web page is provided);
- Abstract (completed on line);
- Visitor Questionnaire (completed on line);
- Host Questionnaire (completed on line);
- Short Visit Report (to be uploaded).

All these features are already used in the project, and a range of different tools for querying the database will be made available soon. All the enquiries will be realised through a web service, due to the XML structure used for the forms.
In particular, a search engine will be implemented with the ranking method that makes it possible to search all the applications submitted by different criteria, for example: scientific domain of the application, year of application, host centre, scientific subject. In addition, the

public results of the users could be inserted in a public area of the database and made available to the scientific community in order to wide publicise the results of the project. Due to the scientific content of the applications a tool for the conversion from Latex to MathML will be made available on-line.

All the features described above will be implemented applying accessibility criteria and the Italian law n.4 of January 9, 2004 about "Provisions to support the access to information technologies for the disabled".

One other important feature of the system is that each applicant has a personal web page where s/he can view: their application, the response and, if they have been accepted, all the questionnaires, reports, etc. that must be completed after the visit. Hence, it is straightforward for visitors to complete the necessary “paperwork” and to keep track of what is still outstanding.

Completion of the Technical Reviews

One important part of the applications procedure is the technical review of the applications. Each application is reviewed by a member of staff from the specified TA (Transnational Access) centre, who comments on aspects such as the suitability of the facilities requested, the availability of resources requested (such as packages, disk space, compilers and other tools), the amount of training likely to be required to enable the applicant to make effective use of the facilities and the feasibility of the draft work plan. This information is used to provide supplementary information for the selection panel.

Application process and Selection procedure