Evaluation of the Nordic Participation in PRACE

January 17, 2014

Radisson Blu Conference Center, Arlanda Airport, Stockholm, Sweden

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Executive Summary

The Evaluation Committee was charged with considering the added value of Nordic participation in PRACE. The Committee received self-assessments and related documentation, interviewed Nordic partners, users and trainers as part of this process. In the view of the Committee, the major issue facing researchers who rely on computational resources in the Nordic countries is the need for a set of efforts that will provide supported access to resources at scales that complement and extend the national resources. The Committee's initial analysis strongly suggests a need within the Nordic region for capabilities that are approximately 25% of a Tier-0 system in addition to the current national and the Tier-1 capabilities. Meeting such a goal will be a significant challenge but may be achievable.

As a result, the Evaluation Committee has the following seven high level recommendations. These recommendations are listed in an order that reflects the Committee's view of the relative difficulty of the recommendations. In the view of the Committee, recommendations #1, #3 and #5 should be initiated as soon as possible as these will facilitate achieving the remaining recommendations. In the view of the Committee, a potential structure for the first one is already in place with the NeIC and the frameworks for the latter two are already well-developed within several of the countries.

Organizational:

1. Put in place an effective framework for Nordic cooperation and coordination
2. Maintain open and transparent processes at all scientific, technical and organizational levels

Scientific:

3. Develop the scientific goals, justifications and use cases
4. Engage nationally and internationally in projects to meet the scientific goals

Technical:

5. Determine the ranges of user requirements
6. Develop the technical roadmaps for Tier-0, Tier-1 and other national systems
7. Develop the technical expertise to support scientific success.

The Evaluation Committee has also made a number of observations that are included to provide additional information and context for the recommendations.

The Committee was tasked with considering viable possibilities for obtaining access to Tier-0 resources. In the view of the Committee, the continuation with PRACE would likely be the most beneficial to both Tier-0 and Tier-1 users. In the event that this is not possible, the coordination of the respective strengths of the Nordic countries becomes crucial. One possible approach would be the joint acquisition of a single system with joint governance facilitated by NeIC that would be complemented by partnerships with similar facilities in other countries, including those outside Europe, to meet the needs for a diversity of architectures.

The Committee is concerned that a financial commitment to a shared Tier-0 facility at a Nordic or European level is likely to decrease the amount of money available for national Tier-1 HPC systems provision, unless additional money can be committed to HPC infrastructure. It is essential that a full and careful analysis based on the science case be carried out. This can then inform open discussions of the balance of Tier-1 and Tier-0 systems that best meets the future needs of Nordic researchers. An agreement needs to be reached on a Nordic level about how Tier-0 access can be funded and what each country is willing and able to commit. In the opinion of the Committee, and aligned with the first recommendation, NeIC would be an appropriate organization to carry this out. The second recommendation for openness and transparency is extremely relevant to this process and the Committee strongly suggests that, as an initial step, the full information shared with the Committee by each of the countries be made available.

Background Information and Rationale

The charge to the Evaluation Committee was to investigate and evaluate the added value of participating in PRACE (Partnership for Advanced Computing in Europe) for Nordic researchers and also to consider future participation in PRACE by the Nordic region. This evaluation should be considered as complementary to but not coordinated with any national evaluations that are assessing the participation in PRACE by each individual country. The Committee was convened on 17 January 2014 and consisted of four external experts, all of whom were physically present. In addition to the physical meeting, the committee met on conferences calls before and after the meeting to prepare for the meeting and the final report.

The Terms of Reference for the Evaluation Committee included the following background information:

The mission of PRACE is to enable high impact scientific discovery and engineering research and development across all disciplines to enhance European competitiveness for the benefit of society. PRACE seeks to realize this mission by offering world class computing resources and services through a peer review process.

PRACE is established as an international not-for-profit association (aisbl) based in

Brussels. It has 25 member countries (October 2012); including Denmark, Finland, Norway, Sweden; whose representative organizations create a pan-European supercomputing infrastructure. Through a tiered structure, PRACE provides access to computing resources and services for large-scale scientific and engineering applications at the highest performance level.

Resources from the six Tier-0 systems have up to now been provided in-kind from the four hosting countries to researchers based on peer-review. These hosting countries have signaled that it is unlikely that the current practice with insufficient external funding to cover the cost will be continued into the next phase after mid-2015.

The committee was provided with documentation that included:

- A description of PRACE by NeIC
- PRACE self-assessment documents from each of the four countries
- Spreadsheets with the Tier-0 allocations by researcher and by science area for each of the four countries
- SNIC strategy plan 2013-2017
- Extract from the SNIC investment roadmap 2014-2017
- CSC customer usage 2013 document
- CSC National Grand Challenges evaluation spreadsheet
- CSC next generation infrastructure memo final revision
- Finland PRACE Tier-0 calls, Finnish participation in PRACE calls, 2013-11-15
- PRACE GDP vs. cycles table for 2012
- An official letter stating the Danish views on PRACE, dated 2013-09-05

The committee was also aware of the "Nordic eScience Action Plan 10 concrete actions to implement the Nordic eScience Strategy" and the NHPC Evaluation report from Oct 2013.

Self-Assessments

The National representatives to PRACE from each of the Nordic countries were each asked to prepare a self-assessment that was to contain material on the following topics:

- Financial and administrative key figures and factors associated with the project.
- Information about user demand, project allocations and actual usage of the provided compute resources for regular Tier-0 and Tier-1 as well as preparatory phase projects.
- Any significant achievements and challenges faced and how these were dealt with.
- A summary of experiences and opinions of the National representatives.

Self-assessments were prepared by all four Nordic countries and provided to the Committee. Each self-assessment presented the current status for the relevant country with respect to PRACE and was considered within the overall Nordic context by the

Committee as part of the evaluation process. The Committee felt that it was important to note that each self-assessment reflects the involvement of an individual country and that they should be weighed in that context. Most of the information in the self-assessments was related to the infrastructure and support aspects of PRACE, rather than the scientific research enabled by PRACE.

The Committee appreciated the forthrightness present in each of the reports and in the interviews.

Interviews

Interviews with the stakeholders (users, application and enabling experts, national resource providers, national operations staff, etc.) were held on January 17th. Interviews were held via distributed communication mechanisms (e.g., telephone, video), as well as in person. Prior to the interviews, each interviewee received a set of questions prepared by the Committee. The data and opinions collected via interviews and meetings together with the self-assessment reports, other documents provided and responses to the questions sent to each interviewee form the basis for the evaluation.

Individuals from the Nordic countries from three major groups were interviewed. The groups were identified as users of the Tier-0 and/or Tier-1 systems, representatives for the PRACE efforts within each Nordic country, and trainers or enablers for the PRACE resources. A total of 13 separate interviews were conducted with 17 people.

Analysis

In general, the Evaluation Committee felt that it could have benefited from more information about PRACE usage within and across the Nordic countries. As a result a complete picture of Nordic engagement was hard to determine. Each country is dealing individually with PRACE. For example, the PRACE office only releases Tier-0 success rates to a national representative on demand. In some cases, national HPC programs do not know who submitted proposals, what science areas these proposals were for or what the success rates were. PRACE's reason for caution in releasing figures appears to be that the success rates are different for different countries which may be contentious and that unsuccessful applications to PRACE may prejudice researchers' chances of success in applications for national resources. Tier-1 rates were difficult to ascertain as well. The information below summarizes the information that the Committee was working with but should not be considered to be complete.

Tables 1a, 1b and 2 summarize the Committees understanding of the involvement of the four countries in PRACE based primarily on the information in the self-assessments.

Table 1a. Nordic Countries PRACE involvement

	PRACE Preparatory Phase (PP)	PRACE 1IP Person Months	PRACE 2IP Person Months	PRACE 3IP Person Months	Tier-1 DECI7-DECI-10 Projects On Nordic National Systems
Denmark	-	-	-	0	0
Finland	X	88	182	70	10
Norway	X	88	79	63	8[1]
Sweden	X	124	150.9	35.7	23

This shows a fairly high level of involvement of three of the countries with the PRACE infrastructure development efforts. Denmark has not had a national HPC program during the period that PRACE has been existence, which was clearly stated in the self-assessment and this is reflected in Tables 1a and 1b. The involvement of the Nordic countries in the PRACE work packages is shown in Table 2. There is no Danish involvement in these efforts.

Table 1b. Resources from Nordic countries available to PRACE Tier-1 researchers[2]

	System Type	Number of sites
Denmark	-	-
Finland	Cray XT4/5, Cray XC30	1
Norway	Cluster	1
Sweden	Cray XE6	1

Table 2. Work Packages per Country

	Denmark	Finland	Norway	Sweden
PRACE-1IP				
WP2	-	X	X	X
WP3	-	X		X
WP4	-	X	X	X
WP5	-			X
WP6	-	X		X
WP7	-	X	X	X
WP8	-		X	X
WP9	-	X	X	X
PRACE-2IP				
WP2	-	X	X	X
WP3	-	X		

[1] Norway provided Tier-1 access beginning with DECI9.
[2] A complete listing of all current Tier-1 resources is available at http://www.prace-ri.eu/Tier-1-Resources

WP4	-	X		X
WP5	-			X
WP6	-	X	X	X
WP7	-	X	X	X
WP8	-			
WP9	-	X		
WP10	-	X		X
WP11	-	X		X
WP12	-	X	X	X
PRACE-3IP				
WP2	-	X	X	X
WP3	-	X		
WP4	-	X		X
WP5	-			X
WP6	-	X	X	X
WP7	-	X	X	X
WP8	-	X		

Table 3 provides information on the number of successful proposals for Tier-1 resources from Nordic PIs. This information was obtained from the self-assessments and from the DPMD (DECI Project Management Database). Access to the raw data in this database is only available to members of the DECI support team in the PRACE projects, although summaries of numbers of proposals and awarded projects are provided via public deliverables of the project [3]. Through the Tier-1 process, researchers with these awards have been able to take advantage of access to larger systems, systems with different memory configurations and architectures

Table 3. Tier-1 awards to Nordic PIs

Call	Denmark	Finland	Norway	Sweden	Total # Proposals	Total # Awarded	Total # w/Nordic PI
DECI-7	0	2	0	4	54	35	6
DECI-8	1	2	0	4	49	33	7
DECI-9	1	2	0	3	45	31	6
DECI-10	1	3	0	5	85	37	9
DECI-11	2	3	2	2	115	52	9

[3] Access to the database is restricted to staff working on the PRACE projects, but appropriate information may be extracted on request to the mailing list deci-support@prace-ri.eu. PRACE project personnel from Sweden, Finland and Norway have access to the database.

from those currently deployed in any of the Nordic countries, such as the IBM Blue Gene/P system. The self-assessments from Finland, Norway and Sweden were consistently supportive of the current Tier-1 arrangement while Denmark did not have sufficient information because there was not a technical or operational relationship with the national HPC or PRACE efforts. The Tier-1 users who were interviewed were also very supportive of the program.

Table 4. Tier-0 total number of proposals that include researcher(s) from each country

PRACE Regular Access Calls 2-7	Denmark	Finland	Norway	Sweden	Total
# Proposals submitted w/Nordic PI or co-PI	13	14	2	17	46
# Proposals awarded w/Nordic PI or co-PI	9	8	2	8	27
Tier-0 awards led by a Nordic PI	7	7	2	4	20

Table 4 provides information on the number of proposals awarded for Tier-0 Calls 2-7 that included a Nordic PI or co-PI that was provided by each country. The total number of such proposals awarded was 27. The number of awards to projects led by a Nordic PI was 20.

Table 5 shows the numbers of Tier-0 awards by PRACE to research teams with Nordic PIs or co-PIs broken out by scientific area. This information was provided by each country to the Committee. These numbers are defined by PRACE using a "mixed metric"[4] to calculate the number of awarded projects per country. The interest in Tier-0 access and success of Danish researchers in proposals for access to Tier-

Table 5. Tier-0 Total number of proposals awarded by science area for each country

Scientific Areas	Denmark	Finland	Norway	Sweden
Biochemistry, Bioinformatics and Life sciences	0.77	2.00	0.00	0.00
Chemical Sciences and Materials	1.00	2.00	0.00	0.00
Earth System Sciences	0.00	0.00	0.00	0.76
Engineering and Energy	0.00	1.00	0.00	1.67
Fundamental Physics	1.42	0.77	0.00	0.00
Mathematics and Computer Sciences	0.00	0.00	0.00	0.00
Universe Sciences	2.01	1.12	1.65	0.80
Number of Awarded Proposals	**5.19**	**6.88**	**1.65**	**3.22**

[4] The "mixed metric" is defined at http://www.prace-project.eu/statistics

0 resources is notable, given that there has not been a national HPC program during the period when PRACE has been in existence. The information provided by Finland on their internal tracking in a wiki of Finnish participation in PRACE calls was very well-organized and demonstrated a strong commitment to supporting Finnish researchers at this level. The structure of the Finnish HPC program as embodied in a single centre may provide opportunities for this type of tracking that CSC appears to have capitalized on. Table 6 contains information derived by the Committee from data provided by each country on the Tier-0 awards to PIs in the country.

In order for the Committee to consider some of the implications of Tier-0 access, it was necessary to consider the level of usage of the current Tier-0 systems by Nordic researchers. To evaluate the magnitude of usage of the Tier-0 resources by Nordic PIs, the Committee chose to adopt a very simple model based on several assumptions. This is a basic analysis and is being used by the Committee to obtain an estimate of the Tier-0 requirements of Nordic PIs. A more complete study should be performed within the Nordic countries.

Table 6. Tier-0 core hours awarded with Nordic co-PI or PI for Calls 2-7

	Total Core MHours with Nordic PI or co-PI	Total Core MHours with Nordic PI	Avg for Total MHours/Call	Avg of MHours for Nordic PI/Call
Denmark	248	224	35	32
Finland	258	242	37	34
Norway	6	6	8	8
Sweden	277	126	40	18
Totals	**789**	**598**		

Awarded allocations were chosen as an indicator of the level of usage by Nordic Tier-0 researchers. The awards were used to estimate an average allocation levels in millions of core hours (MHours) on the Tier-0 resources for the PRACE Regular Access Calls 2-7 by Nordic PIs. These calls covered the period of April 2011 to July 2013, approximately 2 years. The model assumes that an award to a project led by a Nordic PI would be executed on a Nordic Tier-0 system but an award that included a Nordic co-PI would be executed on another system to prevent double counting. During this time period, 233 awards were made by PRACE to all researchers for Tier-0 access for a total of ~6B core hours[5]. The total core hours for projects led by Nordic PIs was approximately 10% of the total core hours awarded through these calls. If it is assumed there were an average of five Tier-0 systems during this time period and that half of the cycles on the systems were made available to PRACE, this simple model suggests that the Tier-0 research requirements within the Nordic region could have been met with the equivalent of a system that is on the order of 25% of a current Tier-0 system. This is a very significant scale of resource. This does not address architectural diversity that could effectively

[5] Information on the PRACE Tier-0 awards was compiled from http://www.prace-project.eu/Regular-Access

match the applications requirements, which is particularly important given the range of domains Nordic researchers are engaged in as shown in Table 5. This simple model is consistent with the information on the PRACE statistics web page, http://www.prace-project.eu/statistics, which suggests that the Nordic countries account for ~8% of the total resources awarded.

Observations:

The Evaluation Committee was limited in the number of Nordic researchers and providers it could interview but hopefully the sample is representative of the views across the Nordic countries. The Evaluation Committee noted the following comments.

General:

1. A Nordic Tier-0 facility is not financially viable within the current budget and specific scientific justifications are not compellingly described.
2. There is very strong scientific interest in access to Tier-0 resources.
3. Tier-0 users expressed the opinion that they don't want the additional support, as they are highly experienced and don't need the help. Preparatory access already exists for any user wanting to perform scaling tests to see if their code has the potential to run on a Tier-0.
4. Several users said that they thought that Tier-0 systems should ideally be about an order of magnitude larger than national systems. Although there is a recent Europe-wide PRACE science case for Tier-0, the Nordic countries would benefit from a Nordic science use case portfolio.
5. PRACE is an additional resource for grand challenge problems that scale beyond the maximum job size possible on national facilities or for research projects which are high risk/high reward or which require more CPU cycles than can be provided through national allocations.
6. Information about the PRACE proposal process, training and assistance is available to the users through the national support processes and seems to reflect the relative strengths of each of the national programs. Opinions about the usefulness of these efforts varied amongst the users with the most self-sufficient expressing the least interest.
7. No statements came from the users about needing to link up the Nordic national resources.
8. Enterprising researchers have found other resources outside Europe, e.g. in Japan or the US, which they are using either as an alternative or as a supplement to national and PRACE resources.
9. Significant concern was expressed that the current PRACE processes are not sufficiently transparent to either the users or to the national representatives.

Tier-0

The following possibilities were identified for providing Nordic researchers with access to Tier-0 Leadership Class systems:

1. The continuation of the current peer-reviewed access to European systems provided by PRACE was stated to be the preferred solution. This assumes the Nordic countries are willing to contribute to the new PRACE funding model.
2. Procuring and operating a Nordic Tier-0 computer would be a less desirable but possible alternative. This assumes that the Nordic countries are willing to commit funds to providing a Nordic alternative.
3. Researchers could be encouraged to form relationships with other countries, such as Japan and US in order to access their supercomputers (at no cost to the Nordic countries).
4. The Nordic countries could form a bigger consortium, either individually or collectively, with other European countries to procure and operate a large supercomputer.
5. The Nordic countries could decide not to provide specific support or direction and rely on individual researchers to find their own solutions.

National and Tier-1:

1. The baseline computing needs of Nordic researchers should be met by national HPC facilities.
2. The Tier-1 systems presently in the Nordic region are determined by national considerations and by national user requirements.
3. The Nordic Tier-1 computer centres should continue to commit a fraction of their resources to the PRACE DECI programme since Tier-1 cycle exchange on a national level enables access to alternative architectures, machine configurations etc. and provides opportunities for obtaining allocations for collaborative projects. Undertaking collaboration via PRACE rather than via bi-partite agreements allows users to take advantage of the PRACE common production environment.
4. The Evaluation Committee noted the diversity of processes and procedures between the Nordic countries which limits the potential for resource exchange between the Nordic countries.
5. The current commitment of 5-10% of national Tier-1 systems to PRACE seems to be appropriate, based on user and centre feedback. However it would be good to have a quantitative analysis establishing rationale for sharing Tier-1. For example, there are no Blue Gene machines in the Nordic region and some Tier-1 proposals are for this architecture. How many applications need such specialized architectures, how many GPU's, how many large memory, SSD disks etc. and how many are needed for multi-national collaborative work? This data would help in establishing the nature of needed facilities outside the base national HPC infrastructure.
6. Experienced users would like more money to go into machines and less into funding user support activities however the EC is only funding support activities with the national sites buying the systems.

Training and support:

1. While the EC continues to fund or co-fund HPC support activities (such as

training, operations, applications enabling support) through the PRACE projects, the Nordic countries should target their PRACE activities and funding to areas which complement their national priorities. Several centres reported that their PRACE effort was currently spread too thinly across too many activities to make an impact at the national level.

2. Research group leaders should be encouraged to work with HPC training providers to disseminate information about training opportunities and summer schools more widely.
3. Given the hierarchy of HPC resources in Europe and the views of the researchers, training and support should particularly be tailored to meet the needs of researchers who want to move from one level to the next.
4. Some of the Nordic researchers interviewed appeared to be enthusiastic about the increased opportunities for training offered by PRACE and about collaboration between national and PRACE training providers. However, few research groups were fully availing themselves of these opportunities, which they acknowledged to be of particular use to more junior members of their research teams.

Recommendations

In the view of the Committee, the major issue facing researchers who rely on computational resources in the Nordic countries is the need for a set of efforts that will provide supported access to resources at scales that complement and extend the national resources. The Committee's initial analysis strongly suggests a need within the Nordic region for capabilities that are approximately 25% of a Tier-0 system in addition to the current national and the Tier-1 capabilities. Meeting such a goal will be a significant challenge but may be achievable.

As a result, the Evaluation Committee has the following seven high level recommendations. These recommendations are listed in an order that reflects the Committee's view of the relative difficulty of the recommendations. In the view of the Committee, recommendations #1, #3 and #5 should be initiated as soon as possible as these will facilitate achieving the remaining recommendations. In the view of the Committee, a potential structure for the first one is already in place with the NeIC and the frameworks for the latter two are already well-developed within several of the countries.

Organizational:

1. Put in place an effective framework for Nordic cooperation and coordination
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3. Develop the scientific goals, justifications and use cases
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Technical:

5. Determine the ranges of user requirements
6. Develop the technical roadmaps for Tier-0, Tier-1 and other national systems
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The Nordic countries are currently operating independently in accord with their own national development plans. As a result there are very great differences in the facilities and services being offered. The Evaluation Committee recommends that a joint committee be empowered to determine an agreed policy and funding mechanism for the Nordic countries. NeIC should perform this role provided the Nordic countries are willing and able to commit to common goals in this area.

The Evaluation Committee found that the funding model for PRACE lacked transparency which is an impediment to cooperation and collaboration among funding agencies. Although the future PRACE funding model is likely to change the Evaluation Committee feels that it is essential to have a funding model which is easily understood and implemented before any agreement can be considered. The Evaluation Committee recommends that each country carefully consider the impact of work packages within the context of the national programs and scientific requirements.

The Evaluation Committee recommends that any future policy or strategic program within a single country or across the Nordic countries needs to be justified by a strong scientific case with goals and justifications. The intent should be understanding the science requirements through a common framework that is shared or at least understood within each country and between the Nordic countries. This should be on on-going process managed or facilitated by the NeIC.

The Evaluation Committee recommends that a more detailed understanding of current and future user requirements be developed for a better understanding of the likely future demand for different sizes and types of resources at a national level and above. This is also necessary to understand the potential role of a Nordic infrastructure in both the Nordic and European HPC landscape and would pave the way for future procurements to be better targeted at supra-national requirements, if this were felt to be important.

The Evaluation Committee found that there were clear benefits to Nordic researchers in an initiative based on facilities and services that cannot be offered cost effectively nationally. These benefits include sharing of architectures, different scaling systems, and different memory or storage configurations plus increased support and services. This is true for both Tier-0 and Tier-1 systems. The Evaluation Committee recommends that the Nordic countries continue to participate in any such initiatives. The Evaluation Committee is concerned that significant changes are needed in PRACE, particularly for Tier-0 access, and that other options, such as a Nordic wide or other collaborative system could be of greater benefit.

The Evaluation Committee found that while there are currently a limited number of Nordic research groups who are using and benefiting from Tier-0 systems, these users represent a significant potential commitment of resources. The fact that there were 46 Tier-0 proposals submitted across the Nordic region that included all but one of the topic areas is indicative of a viable population of Tier-0 users. The Tier-1 systems are a critical

part of the computational infrastructure. A subset of the current national or Tier-1 users can be expected to become the next or an additional set of Tier-0 users. Critical emerging areas like bioinformatics are not currently suited to the present architectures and additional consideration should be given to such areas. This situation is likely to continue into the future without a proactive promotion of application groups to scale their applications and to cooperate and collaborate with other groups across Europe and further afield. The Evaluation Committee recommends that the Nordic countries should have a cooperative initiative based on application development and scaling. The support for such collaborative proposals should continue regardless of PRACE deliberations.

The Committee was tasked with considering viable possibilities for obtaining access to Tier-0 resources. These are listed in the Tier-0 subsection of the Observations section. In the view of the Committee, the continuation with PRACE would likely be the most beneficial to both Tier-0 and Tier-1 users. In the event that this is not feasible, the coordination of the respective strengths of the Nordic countries becomes crucial. One possible approach would be the joint acquisition of a single system with joint governance facilitated by NeIC that would be complemented with partnerships with similar facilities in other countries, including those outside Europe, to meet the needs for a diversity of architectures.

The Committee is concerned that a financial commitment to a shared Tier-0 facility at a Nordic or European level is likely to decrease the amount of money available for national Tier-1 HPC systems provision, unless additional money can be committed to HPC infrastructure. It is essential that a full and careful analysis based on the science case be carried out. This can then inform open discussions of the balance or Tier-1 and Tier-0 systems that best meets the future needs of Nordic researchers. An agreement needs to be reached on a Nordic level about how Tier-0 access can be funded and what each country is willing and able to commit. In the opinion of the Committee, and aligned with the first recommendation, NeIC would be an appropriate organization to carry this out. The second recommendation for openness and transparency is extremely relevant to this process and the Committee strongly suggests that, as an initial step, the full information shared with the Committee by each of the countries be made available

The Evaluation Committee would like to thank each of the interviewees for their invaluable contributions to this effort and representatives from NeIC for their assistance in the process of gathering information and supporting the preparation of this report. The willingness of the interviewees to engage openly and completely with the Committee was of great value in educating the Committee on the importance and relevance of the PRACE projects, both technical and scientific.

Appendix A. Interviewees on Jan 17, 2014

PRACE Partner Interviews

Sweden: Jacko Koster, Erwin Laure

Norway: Arild Halsetrønning, Hans Eide, also Bjørn Lindi

Denmark: Rene Belsø
Finland: Per Öster, Janne Ignatius

PRACE User Interviews
Tier-0:
Claudio Pica, Denmark;
Hannu Häkkinen, Finland
Mats Carlsson, Norway
Tier-1
Hannu Kurki-Suonio, Finland
Erik Lindahl, Sweden

Enablers, Trainers
Joachim Hein, Sweden
Jussi Enkovaara, Finland
Frederik Orellana, Denmark

Chair of PRACE SSC
Ruud Kenneth

Appendix B. Questions for Interviewees on Jan 17, 2014

Questions for the users:

1. Are/Were you using any new applications or capabilities on the Tier-0 or Tier-1 system that are not on the other systems that are otherwise available to you?
2. What is minimum size resource that you require at this time for your research? Maximum size? How will this change over next 3-5 years?
3. How have current or new cross-country collaborations been affected as a result of the PRACE initiative?
4. Have any new scientific results been obtained from using the Tier-0 or Tier-1 system?
5. What would have been the impact on your research if you had NOT had access to PRACE Tier-0/Tier-1 facilities? Would it have slowed down your research, meant that you could not do it at all, or prevented you from establishing collaborations? Could you have applied for access to alternative resources e.g. in the USA?
6. Is/Was the use and support of the Tier-0 or Tier-1 resources satisfactory?
7. Did you receive any help in writing and preparing the application? Did you receive any introduction on how to use the resources?
8. Did you receive any enabling support for improving/porting your application? To what extent and how helpful was this for you?
9. Have you or people in your group participated in any PRACE training initiatives? How familiar are you with the documentation material and the training possibilities/programmes offered by PRACE?
10. Do you have any further comments that you would like to share with the Evaluation Committee?

Questions for the partners:

1. Would you like to highlight or update anything in your country's self-assessment report?
2. Please elaborate on the strategic advantages of PRACE to your country and what user communities are of special importance. Where would you like to concentrate the efforts related to PRACE, in either technology or science?
3. Are you involved in any industrial activity in the context of PRACE? What are the industrial needs on HPC in your country you would like to cover?
4. Where do you see the potential for a common HPC strategy for the Nordics, both regionally and towards Europe?
5. What is minimum size resource that your users require at this time for their research? Maximum size? How will this change over next 3-5 years?
6. What would be viable alternatives for your country to provide your user communities with resources (e.g. financially contribute to PRACE 2.0, such as invest in a common Nordic HPC computer or contribute in some other way to another big HPC system).
6a. In light of the documented use of resources so far reported in your self-assessment reports, what do you think might be reasonable to spend in terms of your country's GDP or current HPC commitments?
6b. What competencies or other assets would you be willing/able to provide in-kind?
7. What could be done to help Nordic researchers benefit more from the already existing computing infrastructure at the National and regional scale?
8. What (planned) National/regional resources could be made available for PRACE calls? Do you already foresee a new national Tier-1 soon and would you be willing to offer it to other countries under certain conditions?
9a. How are/were PRACE calls and other PRACE activities promoted and supported?
9b. How can the Nordic countries develop common training activities to ensure improved return on public HPC investments?
10. What would you foresee as the next steps to be taken by the stakeholders at the Nordic and national levels?
11. Do you have any further comments that you would like to share with the Evaluation Committee?

Questions for Trainers/enablers:

1. How are/were PRACE calls and other PRACE activities promoted and supported in your country?
2. Do you consider the use and support system of Tier-1 and Tier-0 systems satisfactory?
3. Did you help users in writing and preparing applications? Did you assist them in using the resources?
4. Please, give a short description on the enabling projects you were involved with. How satisfied were the users with the outcome? How useful did you deem your own contribution?
5. Were you involved in organizing any PRACE training events or preparing any of the publicly available documentation material?
6. How effective do you deem the PRACE enabling and training initiatives in your country, and how well integrated are the those enabling and training projects with other National e-infrastructure projects?

7. According to you, how can the Nordic countries develop common training activities to ensure improved return on public HPC investments?
8. Do you have any further comments that you would like to share with the Evaluation Committee?