



PRACE SHAPE

Terms of Reference

Chris Johnson, EPCC, University of Edinburgh,
UK; SHAPE coordinator: shape@prace-ri.eu
Version: 2.0

1 Goal and scope of SHAPE

PRACE (*Partnership for Advanced Computing in Europe*) makes it possible for European small to medium enterprises (SMEs) to apply for expert assistance and resources on PRACE systems via SHAPE (*SME HPC Adoption Programme in Europe*). The aim of SHAPE is to assist SMEs in overcoming barriers to adopting HPC, such as initial cost, lack of in-house expertise and lack of access to resources.

Successful applicants to SHAPE are paired with a PRACE centre and assigned an expert to work with them on their project. The PRACE expert will typically have 2-6 months of effort to expend on the collaboration. In addition, the SME will be able to gain machine resource on a PRACE system: this will either be via an additional application to the PRACE preparatory access type D programme (<http://www.prace-ri.eu/prace-preparatory-access/>), or via an ad hoc arrangement with the partner PRACE centre. In turn, the SME will provide effort from their own staff to work with the PRACE expert, publicise their work with PRACE, produce a technical white paper at the end of the project for publication on the PRACE website, and provide feedback on any Return on Investment in the medium term following the project's conclusion.

The SHAPE programme runs a call every six months which is open for two months, closing 1st June/1st December or suitable day near those dates. Once the call is closed the applications are reviewed by a PRACE assigned panel, and successful applicants informed and assigned a PRACE expert to work with them. The timescale for this is to inform all applicants of their success or otherwise within 2 months of the call's close.

What SHAPE *is*:

- An opportunity for SMEs with little or no HPC experience to try out their proposal for enhancing their business via the application of HPC

What SHAPE *is not*:

- A way of getting processor cycles for production runs for existing codes – there are other avenues for this via PRACE such as the project access calls.

2 How to Apply

All proposals must be submitted via the Online Application Form, or by completing the downloadable version of the form, and emailing it to shape@prace-ri.eu. Information on how to access the forms for any current SHAPE call are available here: <http://www.prace-ri.eu/hpc-access/shape-programme/>.

All mandatory fields must be filled in before the application form can be submitted. The form includes comments and advice on how to fill it in.

3 Eligibility

SHAPE is open to SMEs which meet the following criteria:

- They meet the definition of an SME as defined here: http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en
- Their head offices are based in one of the following countries or they can justify substantial R&D activity in one or more of these countries:
 - o Austria
 - o Belgium
 - o Bulgaria
 - o Cyprus
 - o Czech Republic
 - o Denmark
 - o Finland
 - o France
 - o Germany
 - o Greece
 - o Hungary
 - o Ireland
 - o Israel
 - o Italy
 - o Luxembourg
 - o Netherlands
 - o Norway
 - o Poland
 - o Portugal
 - o Slovakia
 - o Slovenia
 - o Spain
 - o Sweden
 - o Switzerland
 - o Turkey
 - o United Kingdom

- Only proposals with a civilian purpose will be eligible to participate in SHAPE.

Note that if the machine time for the project is to come from the preparatory **access type D call**, there are some further restrictions (see Preparatory Access Terms of Reference document, available here: <http://www.prace-ri.eu/prace-preparatory-access/>).

4 Evaluation of applications

The evaluation of applications to SHAPE is undertaken by a review panel assigned by PRACE. The panel adhere to the confidentiality/non-disclosure and no conflict of interest rules as described here: <http://www.prace-ri.eu/information-for-reviewers/>.

All reviewers are instructed to evaluate the applications as submitted. No interaction between the reviewers and the applicants is expected during the evaluation of applications.

The panel will try and take into account the applicant's preferences (if expressed) in the application, such as preferred PRACE partner/machine etc., but there is no guarantee that PRACE will be able to meet these preferences.

The results of the evaluation of applications are expected to be communicated within two months of the closing date for the call. For the accepted applications, this communication will include the PRACE expert to work with the SME, a proposed start date and the amount of effort available for the collaboration from the PRACE side.

The evaluation decisions for PRACE SHAPE, including timing, duration and any resources allocated, are not open for negotiation.

5 Criteria for assessment

The panel judges the applications using the following criteria:

- Fit with the goals of SHAPE
 - See section 1
- Strength of the business case
 - The expertise and resources provided through the SHAPE programme are expected to produce a significant Return on Investment for the company. In the mid-term, the SME should be able to build on the results to, for instance, increase its market share, renew its investment, offer new products or services, or recruit dedicated staff. The solution implemented should be part of a business plan to further engage in HPC in the long term.
- Technical Achievability
 - The proposals are expected to be realistically achievable in the timescales described and with the resources made available.
- Other aspects considered
 - The commitment of the SMEs to co-invest with PRACE in achieving the project goals. This would manifest itself as the effort detailed in the work plan for the project being at least approximately equally split between the SME and PRACE
 - The innovative aspects of the proposal
 - The social and economic impact on society as a whole

The applications must supply a clear motivation for why assistance from SHAPE will enhance the business of the SME. A work plan for how the project will progress and where the human effort (both from PRACE and the SME) will be spent must be provided.

Where possible, technical information should be provided with regards the work to be done, such as: any software licensing requirements, preference of target machine architecture, resource requirements, current code information (language, libraries etc), current scalability issues, suggested parallelisation strategy, and so on. However, it is appreciated that due to the nature of SHAPE not all SMEs will be able to provide answers to all of the questions in the form. In this case the SME should instead provide as much relevant technical information as they are able, and this will be accommodated by the review panel.

6 Award of resources

The awarding of SHAPE projects is limited by the amount of resources available, both in terms of machine time and PRACE experts. For those applications with a successful evaluation, awards will be based on a first-come, first-served basis, according to the final submission date.

In addition, there are limitations regarding the availability of the support from PRACE experts, in terms of staff hours, and the type of expertise required. The expertise is provided by PRACE Hosting Members, and may not be available for certain fields of expertise. If the requested support is not available from PRACE experts, the application will be rejected.

7 PRACE HPC Systems available

There are a variety of systems available in PRACE, including the tier 0 and tier 1 systems accessible via the Preparatory Access calls (see <http://www.prace-ri.eu/prace-preparatory-access/>). Once the PRACE expert has been assigned to work with the SME, they can discuss the options for machine access – typically, this is attained through a further application to the Preparatory Access Type D programme, but some centres can accommodate ad hoc arrangements made at the local level.

8 Terms of access

Unless otherwise indicated, the Principal Investigator (PI) will be considered to be the person named as the “Contact Name” from the SME on the application form. They will co-lead the project with the PRACE expert. The PI and the PRACE expert will share responsibility for the delivery of the project goals.

When accepting the SHAPE award, the SMEs commit to:

- a) Providing effort from their organisation towards the collaborative project with the PRACE expert. Typically effort should be at least approximately equally split between the SME and PRACE.
- b) Provide a final report in the form of a technical white paper to PRACE, using the proper PRACE template, detailing the results obtained through participation in SHAPE. Given the collaborative nature of SHAPE, it would be usually expected that this report will be co-authored by representatives of both the SME and the PRACE partner. This report is due at the conclusion of the technical work, and will be peer-reviewed by PRACE representatives ready for publication on the PRACE website. In the case where particular results may be commercially sensitive to the SMEs business, it is still expected that a white paper could be published with a higher-level discussion of the techniques and approach used, omitting the details of particular sensitivity.
- c) Provide feedback on the SHAPE process during the work. This feedback will contribute to the ongoing evaluation of SHAPE and its processes, and is typically gathered annually as part of the SHAPE deliverables. A template will be provided for this feedback, and is typically of the order of two pages long.
- d) Provide follow-up feedback on the Return on Investment that participation in the SHAPE programme has affected. This will be gathered approximately 6-12 months following the

conclusion of the technical work, and a template will be provided with suggestions for the key performance indicators (KPIs) to be considered. As for (b), this will contribute to the ongoing evaluation of SHAPE and will be included in deliverables.

- e) Acknowledge the role of SHAPE and PRACE in all publications which include results arising from the SHAPE work. Users shall use the following wording in such acknowledgement in all papers and other publications:

“We acknowledge PRACE for awarding us access to expertise and resources as part of the SHAPE SME engagement programme. The support of [name of person/people] from [organisation name], [country] to the technical work is gratefully acknowledged.”

- f) Publicise the fact that the SME is working with PRACE and SHAPE. This can be through trade publications, company websites, press releases, twitter etc.
- g) Collaborate with PRACE, upon its request, in the preparation of any additional dissemination material.

In addition, if the machine resources come from an application to the Preparatory Access Type D programme, the Terms of Access for that programme also apply.

Access will be free of charge but conditional on the fulfilment of the eligibility criteria and terms of access described in this document and in the Online Application Form. If this differs from the terms of access that the collaborating PRACE centre may have in place, the terms of access of that centre will prevail.

Users will not hold PRACE and the relevant Members, including their Directors and staff, liable to any claim or expense arising out of the use of the awarded resources.

About PRACE

The Partnership for Advanced Computing in Europe (PRACE) is an international non-profit association with its seat in Brussels. The PRACE Research Infrastructure provides a persistent world-class high performance computing service for scientists and researchers from academia and industry in Europe. The computer systems and their operations accessible through PRACE are provided by 5 PRACE members (BSC representing Spain, CINECA representing Italy, ETH Zurich/CSCS representing Switzerland, GCS representing Germany and GENCI representing France). The Implementation Phase of PRACE receives funding from the EU's Horizon 2020 Research and Innovation Programme (2014-2020) under grant agreement 730913. For more information, see www.prace-ri.eu.
