



Linking Scientific Computing in Europe and the Eastern Mediterranean

HPC Roadshow

LinkSCEEM resource allocation



Who are the resources in LinkSCEEM for?



What Resources are available?

Cyl

Cy-Tera:

- QDR Infiniband network for MPI
- 350TB GPFS filesystem
- **30+ Tflop**
- 36 Fermi GPU
- 12 Core Nehalem
- 116 dual 12-core nodes
- 4GB RAM per core

BA

- 130 8-core nodes
- **Total peak performance 11.8 TFlops**
- Total memory 1.05 TBytes (132 * 8GB)
- DDR Infiniband @ 10 GBbps network
- Lustre filesystems
- Storage: 36 Tbyte

Aim of the resource allocation process

- Provide resources where they can be most productive
- Recognising how the resources are used
- Recording the science being generated
- Planning for the future
- Ensuring sustainability by justifying the cost

Aim of the resource allocation process

- Applications are encouraged from all scientific fields
- The purpose of this application process is to provide computational resources to the most deserving projects
- All applications undergo a technical review
- Large requests undergo a scientific peer review

What are the different types of access?

- **Preparatory access – up to ~10K core hours** **Call always open**
 - (a) Code Scalability (6 months)
 - (b) Code Development (6 months)
 - (c) Code Development with support (6 months)
- **Production access – up to ~200K core hours (12 months)** **Two calls each year**

Welcome to the LinkSCEEM/Cy-Tera HPC proposal submission site!

This site is intended for those who wish to apply to use the resources of the LinkSCEEM and Cy-Tera projects.

There are two types of access available

- Preparatory access for projects that require porting, scalability testing, development or specialised assistance. These projects undergo only a light technical review and the call for proposals is permanent. The upper limit for allocations for such projects is 5,000 to 10,000 core hours
- Production access for projects to implement a scientific research project. These projects undergo a full technical and scientific review. There are 2 calls for proposals per year with published opening and closing dates. In general, such a call is for experienced users where the codes necessary for the project are available on the system requested and/or, in case of codes developed by the applicants, have been sufficiently tested for efficiency, scalability, and suitability (either via proposals for preparatory access or in systems similar to the LinkSCEEM-2 systems). The upper limit for allocations for such projects is 100,000 to 200,000 core hours. There must be a verifiable work plan for resource usage included in the proposal

Announcements

No announcements at this time.

In order to apply, you need to sign in below, or create an account. You may view the [sample application forms](#) without an account.

Sign in

Email:

Password:

[Forgot Password?](#)

Be sure to logout when you are done.

[Have an OpenID? ▶](#)

Email Spam Filters: To make sure that you receive important email that is being sent from this site (e.g., registration and submission confirmations, password reminders, decision notifications, review assignments, etc), you should include

do_not_reply@linklings.com

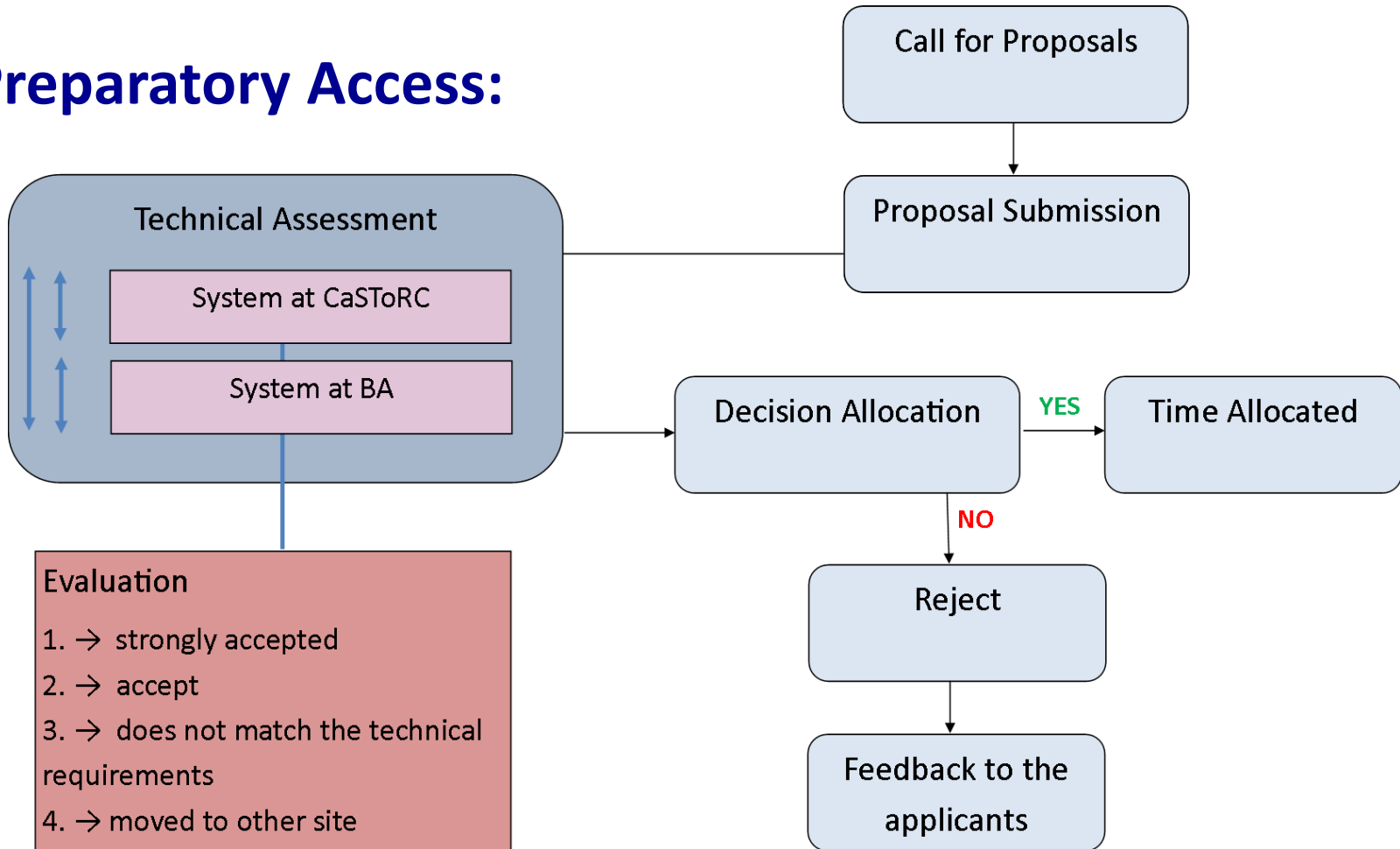
in your spam filter's whitelist. Failure to do this may result in you missing an important email.

Applying for Resources

- Online System
<https://ssl.linklings.net/applications/linksceem/>
- **Year round preparatory access call** – access to systems as soon as technical evaluation is complete
- **Production access calls twice a year** – access after decision of RAC (2 months)
- Currently, the 3rd Production Call is open until the 28th of February

Management of Access to Resources

Preparatory Access:



Preparatory Access

Title

Please enter the title of your research project here.
Please use standard title capitalization, neither ALL CAPS nor all lower case.

Title

Research Field

Research field?

Other:

How you heard of LinkSCEEM/Cy-Tera

We would like to track how people heard about the Call for Proposals and their previous experience with the project.

How did you hear about the LinkSCEEM/Cy-Tera Call for Proposals?

- Workshop or training event Colleague
 Mailing list Conference
 Website Other:

Have you or one of your collaborators ever attended a LinkSCEEM or Cy-Tera workshop or training event?

- Yes No



Preparatory Access

Type of proposal & resources request

- Type A - Code scalability testing:
Scalability testing to obtain scalability plots which can be used as supporting information when applying to future Cy-Tera or LinkSCEEM project calls.
Please fill out questions 1.1-2.2 of the project information section of the application form.
- Type B - Code development:
Code development and optimization by applicant (without Cy-Tera or LinkSCEEM support).
Please fill out parts 1.1-2.3 of the project information section of the application form.
- Type C - Code development with support:
Code development and optimization by applicant with support from Cy-Tera or LinkSCEEM experts.
Please fill out parts 1.1-3.3 of the project information section of the application form.

Select the applicable category

- Type A - Code scalability testing
- Type B - Code development
- Type C - Code development with support

Which resource centers are you requesting access to?

- Bibliotheca Alexandrina
- CyI/CaSToRC

Do you require GPU resources?

- Yes
- No

Preparatory Access - Scientific Information

1.1: Summary of the project

Please give a brief summary of what it is you wish to achieve during this project.

1.1: Summary of the project (Maximum 200 words)

0 words

1.2: Scientific background of the project

Please give a short description of the science behind the project. This description is intended to help the LinkSCEEM/Cy-Tera technical staff to categorise the project, give specialised assistance where possible and/or indicate possible software solutions for this effort.

1.2: Scientific background of the project (Maximum 500 words)

0 words

1.3 Computational Resources Requested

This section is for you to detail the amount of computational resources you require. It is used by the HPC sites to ensure that what you need is within the scope of what we can offer. You need to describe here the amount of resources you require and of what type they are (e.g. GPUs)

To help us do this efficiently, we will list some parameters below that we will assume for your application. **If the following parameters do not fit to your application then you need to explain why, what the actual parameters are and justify them:**

- Total CPU time required is 2000 core hours
- If GPU resources are required, the amount is 400 GPU hours
- Total storage required is less than 20GB(*this is only available for the duration of the preparatory access project*)
- Total number of files to be created is less than 10000
- The maximum amount of data to be transferred to the system at the beginning of the project (or from the system at the end) is less than 5GB
- The maximum amount of memory (RAM) used per core in the application is less than 1GB
- The application is *not* I/O intensive, i.e., does not create a large number of files, does not create very large files (>1GB), does not use frequent file system accesses

Please remember that Preparatory Access is not intended to be used for production. Therefore, the maximum resource request is typically 10,000 CPU hours or 500 GPU hours.

1.3 Computational Resources Requested

0 words



Preparatory Access – Software Information

2.1: Application software details

If known, please provide the following information on the simulation software required by your project:

- Name and version
- Any software dependencies (such as special compilers, libraries, software applications, etc.)
- Webpages or other references
- Licenses required; If the code is open source please state "open source".

2.1: Application software details (Maximum 200 words)

0 words

2.2: Algorithms and Parallelisation of Application Software

If known, please briefly describe the main algorithms used (e.g., conjugate gradient) and whether they have been parallelized.

If they are parallelized how is the parallelisation implemented (MPI, CUDA, etc.)?

2.2: Algorithms and Parallelisation of Application Software (Maximum 300 words)

0 words

2.3: Enabling/optimization work required

Describe the application enabling/optimization work that needs to be performed to achieve the target performance.

This may include factors such as, for example:

- Implement parallelisation such as MPI, OpenMP, hybrid, CUDA, OpenCL etc.
- Improve I/O
- Reduce global communication

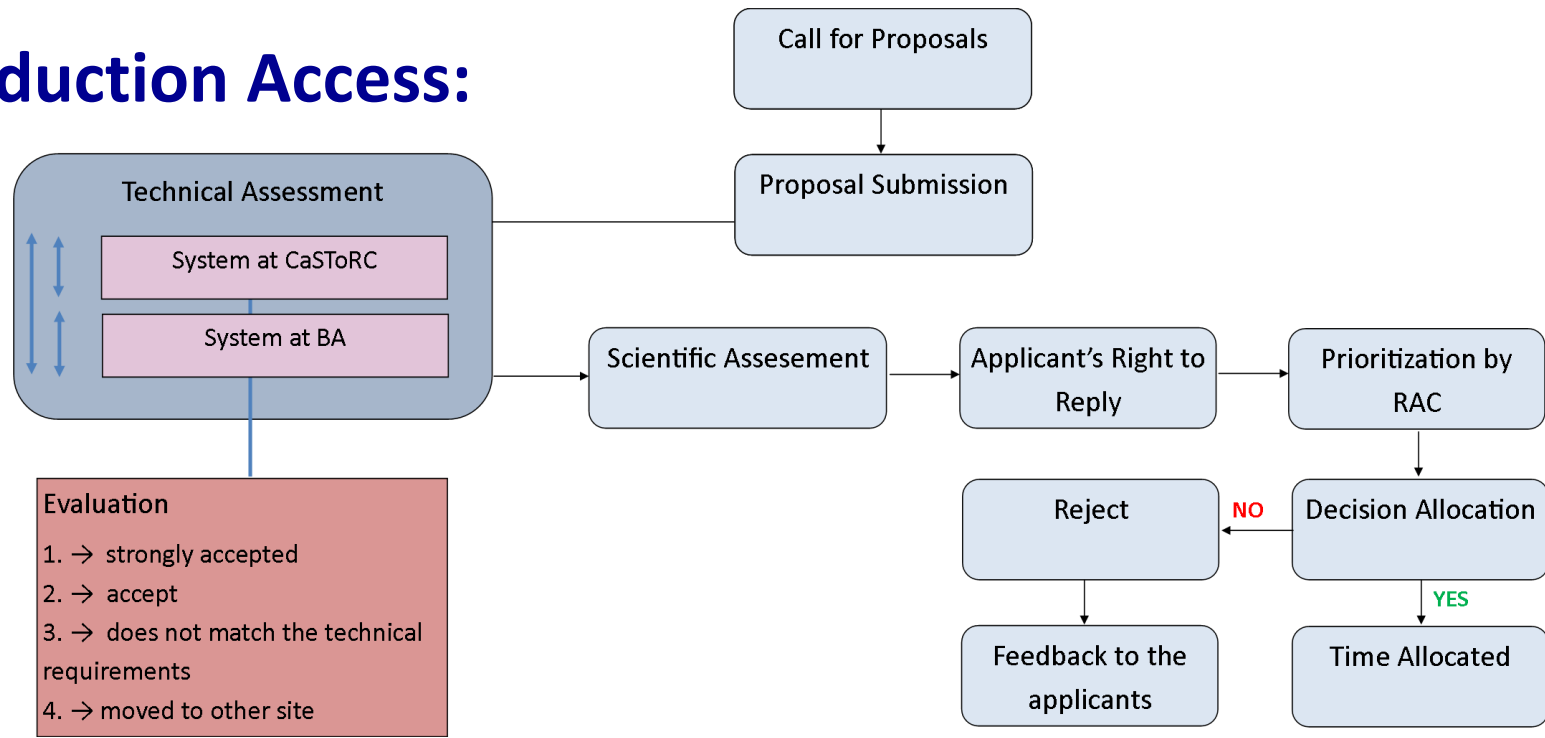
2.3: Enabling/optimization work required (Maximum 300 words)

0 words

Management of Access to Resources

- Create a peer review process for coordinating access to HPC, visualization and storage resources
- Form a Resource Allocation Committee to implement and oversee the process

Production Access:



Technical Criteria (Production Access)

- **Proposals should prove the need to run on a LinkSCEEM-2 HPC system.**
- **The codes necessary for the project must be scalable on an available system**
- **The project proposed should be suitable to run on the architecture requested. The technical assessment may redirect projects to a more appropriate machine.**

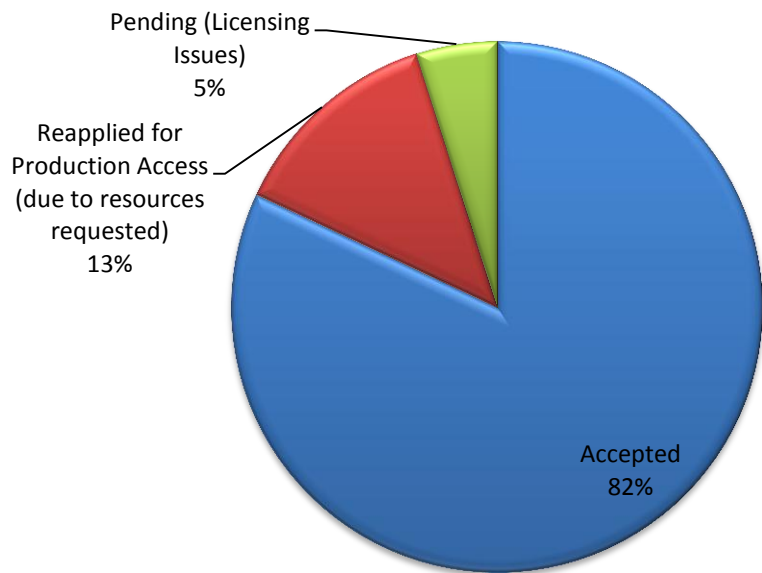
Scientific Criteria (Production Access)

- **Demonstrate scientific excellence**
- **Proposals should be novel, well integrated in the context of the call and timely.**
- **The project should aim to develop an important scientific topic**
- **Appropriate methodology**
- **Dissemination and knowledge exchange**
- **Solid management structure**

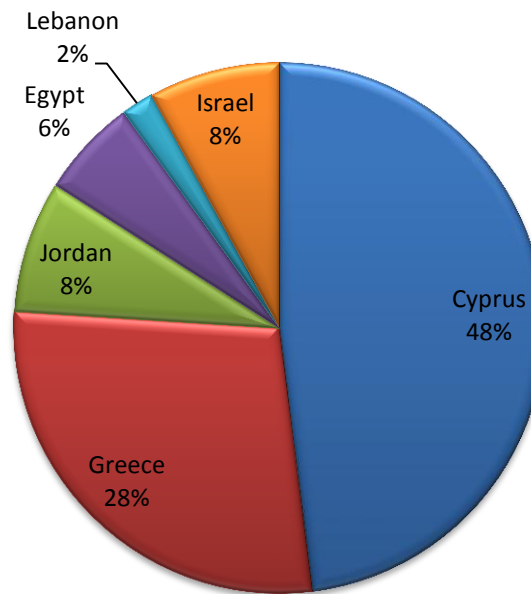
Statistics of Applications – Preparatory Access

- **95% success rate!!!**

Preparatory Calls Applications



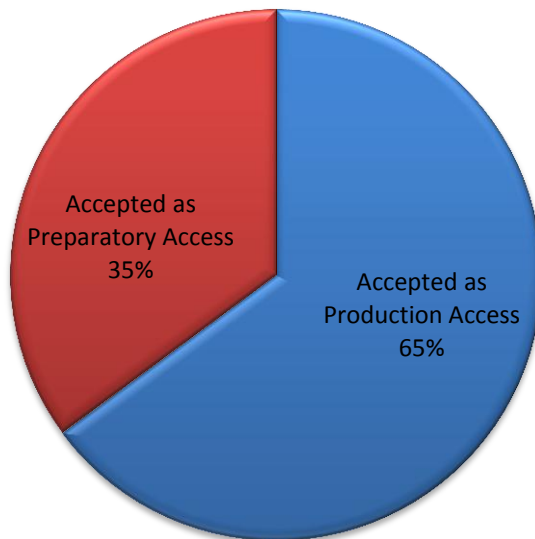
Preparatory Calls Applications by Country



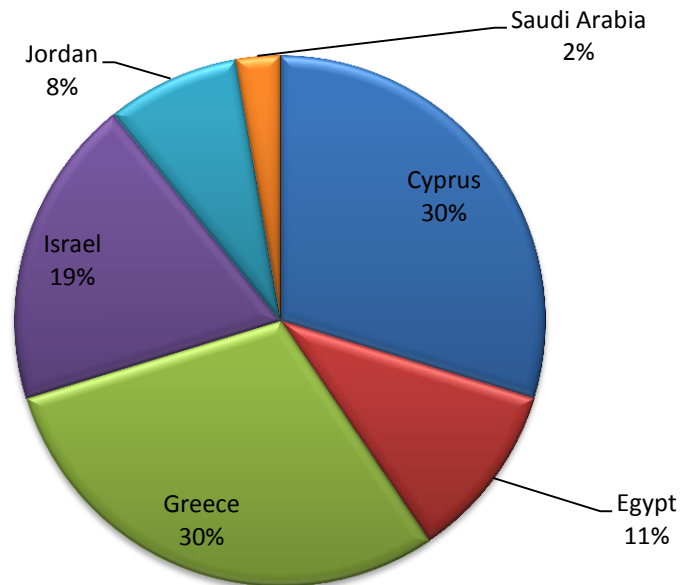
Statistics of Applications – Production Access

- **100% success rate!!!**

Production Calls Applications



Production Calls Applications by Country



Thank you

