

# Cy-Tera

## The Cyprus High-Performance Computing Facility

Coordinated by CaSToRC, The Cyprus Institute

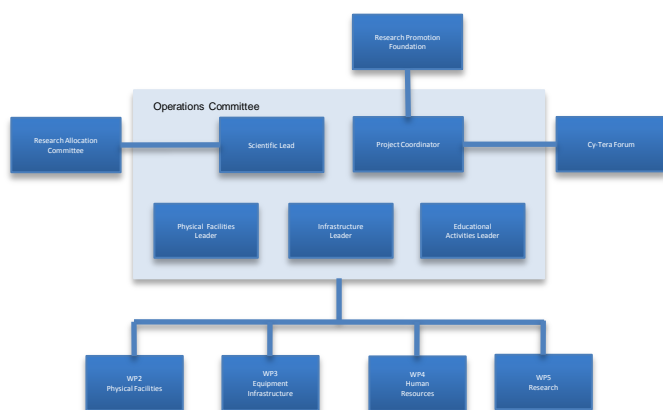
### Objectives

Host a high-performance computing infrastructure  
>20 Teraflops per second performance and  
>100 Terabytes of data storage  
Support research activities of international reach in  
computational science, engineering and scientific  
computing  
Integrate Cyprus and the Middle-East region with EU  
HPC activities in concert to government policy to  
transform Cyprus into a knowledge-based society

### Partners



### Project Structure



### System Design

Hybrid architecture combining standard CPUs and GPUs  
A high speed interconnect for message passing and storage access  
Standard Linux OS with resource allocation software to provide a familiar user environment  
Specialised compilers and debugging environment

### A research HPC Infrastructure

A unique facility for Cyprus and the region for carrying out cutting edge research in science and technology and for becoming an educational center in HPC.

Strong research groups involved:

- Climate change (Cyl, MPI-Mainz)
- Desalination and cogeneration of energy (Cyl, MIT and NCSA)
- Visualization activities/Digital Cultural Heritage (Cyl, NCSA and SESAME)
- Multi/core architectures, GPUs, High Energy computational Physics (University of Cyprus, JSC and NCSA )
- Computational Biology, Biophysics (University of Cyprus)
- Synchrotron data analysis(SESAME)

### Impact, sustainability, opportunity

The Cy-Tera project provides core funding for the first infrastructure of CaSToRC, planned as a regional HPC center

Aiming to:

- provide Cyl and its partners computational resources enabling frontier research
- build local know-how in HPC enabling an upgrade to a Tier-1 regional facility

Sustainable operation and future expansion of the Cy-Tera facility beyond the four year period of the project is being planned

Opportunity to develop joint research activities with Eastern Mediterranean partners and act as a catalyst to the development of a regional computational science virtual research community

#### Consortium Institutions:

The Cyprus Institute (<http://www.cyi.ac.cy>)  
National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign (<http://www.ncsa.illinois.edu>)  
Jülich Supercomputing Center (<http://www.fz-juelich.de/fs/en>)  
University of Cyprus (<http://www.ucy.ac.cy>)  
Synchrotron-light for Experimental Science and Applications in the Middle East (<http://www.sesame.org.jo/>)