

## CILEA for scientific and technical computing

In the last few years simulation and computing have become remarkably important in science and technology, either for research and academic studies, either for industrial prototyping and production. CILEA has over 30 years of experience in hardware and software management. It can therefore offer support to both researchers who are looking for a high performance environment for running their codes in a safe and reliable environment and to small medium enterprises that need more assistance to approach this kind of techniques and resources.

### Resources

CILEA since its foundation in 1975 has had state-of-the-art computing platforms, constantly upgraded and replaced and periodically mentioned in the Top500, the list of the 500 most powerful supercomputers in the world. Users can therefore always find the most suitable architectures and development tools for the solution of their complex computing needs. Whenever possible, CILEA tries also to have computers of different architectures, in order to offer the most suitable one for each specific computing need. Besides the hardware, the most known computing codes and libraries are available. They include both proprietary and open source software, covering a wide spectrum of applications, like mechanical and structural analysis, fluido-dynamics and bioinformatics, to mention but a few fields. They are available to the customers with modalities determined by agreements with package distributors.

### Services

In the field of high performance computing, CILEA is able to offer services ranging from the simple access to its computers by expert users up to the most complete assistance in the development of new simulations and applications. Users access systems remotely, even through easy to use web interfaces (via the <http://www.supercomputing.it> portal) or through a dedicated graphic node for remote rendering. Expert personnel provides user support including on-line assistance, software and libraries installation. But CILEA can also take over the development of completely new applications. When necessary, CILEA can use help from expert researchers from the universities belonging to the Consortium. An updated list of available applications is maintained at <http://www.supercomputing.it> portal, area "Supercomputing at CILEA".

## Projects

CILEA is not in itself a research institution, but it is often involved in research projects as a partner, sharing its facilities and competence. Currently the Consortium is involved in the major project LITBIO (Laboratory for Interdisciplinary Technologies in Bioinformatics), a laboratory funded by the Italian Ministry of Universities and Research with a FIRB2003 grant for the period from 2005 until 2010. The aim of LITBIO is to provide the international bioinformatics community a reliable computing environment, sharing also the competence and knowledge of CILEA's staff. In order to reach this goal, a supercomputer especially designed for bioinformatics applications has been installed.

## Training and promotion

According to its mission of service and promotion of the use of supercomputing, CILEA periodically organises courses concerning software development in advanced computing environment and all the aspects of hardware and software management. Seminars and workshops are also organised in tight cooperation with Independent Software Vendors.

## Contact details

For every information about scientific, technological or financial aspects or to ask for a quotation, please contact Eng. Giovanni Meloni [ph. +3902269951 email: [meloni@cilea.it](mailto:meloni@cilea.it)] or write to the following email address: [assistenze\\_hpc@cilea.it](mailto:assistenze_hpc@cilea.it). More information is available on the website: <http://www.cilea.it>, area "High Performance Computing".