

April 09, 2013

Teratec Forum to Explore High Performance Modeling and Simulation

April 9 — High performance Modeling and Simulation are major technological challenges for industry and research. The Teratec Forum is the opportunity to meet the key industry players and the most advanced users who will present their last developments and their medium term perspectives in these strategic domains for competitiveness and innovation.

On Tue., June 25, the plenary sessions will be dedicated to industrial strategies and public policies on HPC and illustrate the increasing variety of usages of supercomputing and simulation. This day will bring together leading technology providers and industrial users as well as highly innovative SMEs.

Have already confirmed their participation: Charbel Farhat, Professor of Stanford University, who will present an overview of the evolution of HPC, Dr. Sudip Dosanjh, Department of Energy U.S., Jean-François Minister, Scientific

We will also have the participation of public officials, including Louis Gallois, Commissaire général à l'investissement, which will close the debates of the day.

On Wed., June 26, the main market players and recognized experts will be involved in workshops whose aim is to take on emerging technologies and new areas of application of HPC. This year we propose three workshops technology oriented (tools design and optimization of complex systems, energy efficiency of HPC, HPC and big data) and three workshops usage oriented (HPC in materials simulation, HPC in biology and health, Modeling and simulation for smart cities).

- **Embedded and Mechatronics Complex Systems: Trends and Challenges** — This workshop will be dedicated to technologies, methods & state-of-the-art tools for complex mechatronics embedded systems design and optimization. This workshop will address the strategic vision of research labs, industrials from the aeronautical sector, but also techno-providers in the hardware field (leading-edge embedded high performance computing technologies) and software (new algorithms paradigms).
- **Materials Simulation** — This workshop intends to review current engineering practices in three industrial fields for which this type of simulation is particularly relevant: mechanics, chemicals, and biotechnology. We will present simulations performed on the CEA's Tera 100 supercomputer to demonstrate the possibilities of HPC under such extreme conditions. The workshop will conclude with a presentation of Cecam and its network of European researchers.
- **Big Data and HPC** — The big data session will try to cast a light on the challenges arising from large volumes and short processing times in relation with their HPC needs. Actors from the scientific and industrial worlds will illustrate those two aspects. They will also explain the relation between HPC and their Big Data usage.
- **Energy Efficiency of HPC systems** — In this session we propose to focus on the latest technology advances targeted for the largest HPC centres, on the techniques based on system software for power control and on the potential role played by the application layer. On this last point in particular, some of the latest research topics on power aware algorithms, characterisation techniques for energy profiling and load balancing methods will be presented.
- **HPC in Biology and Health** — The aim of this workshop organized in partnership with the Medicen competitiveness cluster is to bring a general foundation for future initiatives combining healthcare and HPC in two specific fields of application: integrative biology (particularly in researching and designing new medications), the use of medical imaging and virtual reality techniques.
- **Modeling and simulation to support sustainable cities** — This workshop organized in partnership with the Advancity competitiveness cluster will call on specialists from various fields—city planning, architecture, construction techniques, natural hazards, and atmospheric pollution modeling—to attempt to determine how modeling and simulation can be applied to the transformation of cities.

In parallel, will be held the 2013 ScilabTECH, the fifth edition of the Scilab User's Day.

During these two days, there will be an exhibition covering the whole HPC industry. Systems manufacturers and software vendors, integrators and distributors, service providers, academic and laboratory researchers, public and private sector developers will present their latest HPC innovations.

A Systematic Paris-Region Village at the heart of 2013 Teratec Forum

You will be able to discuss with new innovative companies from the Systematic ecosystem and Working Groups: definitely from the Systems Design and Development Tools WG, but also from the Free & Open Source Software WG and the Smart Energy Management WG. All these innovation players are now acting today to meet the future HPC