JÜLICH
FORSCHUNGSZENTRUM

JSCNews
Jülich
Supercomputing
Centre

No. 201 • Feb. 2012

Success in HGF Portfolio Process

The Helmholtz Association's portfolio process was introduced in 2010 in order to quickly tackle important research topics that are not covered by the Helmholtz programmes. JSC participated in three proposals that all passed the experts' review and are now being funded.

"Supercomputing and Modelling for the Human Brain" is one of the portfolio topics led by Forschungszentrum Jülich. In 2013, JSC, the Institute of Neuroscience and Medicine INM-1 at Forschungszentrum Jülich, the German Cancer Research Centre (DKFZ), and the German Research Center for Environmental Health (HMGU) together with international partners and RWTH Aachen University will start to construct a realistic organ model of the human brain. This cooperation will also form the basis for the development of future computer architectures, since it will try to adapt the fundamental working mechanisms of the brain to computer hardware.

JSC's working group "Safety and Traffic" has successfully completed two third-party-funded projects in 2011. In cooperation with the Karlsruher Institut für Technologie (KIT) and Deutsches Zentrum für Luft- und Raumfahrt (DLR, project leader), this work will be continued in the HGF portfolio project "Security Research". JSC will focus on the development of simulation models in the areas of "Fire Protection" and "Pedestrian Traffic".

The portfolio topic "Large-Scale Data Management and Analysis" addresses the increasing amount of scientific data. KIT (project leader), DESY, GSI, and JSC together with a number of universities will develop and integrate tools for data management and analysis into the scientific life cycle of selected applied sciences through the introduction of "Data Life Cycle Labs" and a distributed cross-sectional "Data Services Integration Team".

Helmholtz Group Successfully Concluded

Six years after its inception at the beginning of 2006, the Helmholtz University Young Investigators Group "Performance Analysis of Parallel Programs" headed by Prof. Felix Wolf has been concluded.

Having published more than 60 scientific papers, received three publication awards, and acquired more than € 1 million in third-party funding on the way, the group is proud of its main result, the performance analysis tool Scalasca, which was developed in cooperation with the group headed by Dr. Bernd Mohr. Designed as a scalable version of its predecessor KOJAK, Scalasca is now installed at numerous sites worldwide and has been successfully used to optimize academic and industrial simulation codes. Many of the group members will continue to work at JSC, others followed Prof. Wolf to the German Research School for Simulation Sciences in Aachen. Scalasca, which is now jointly managed by the two organizations and funded through a whole array of new R&D projects, aspires to become part of an international exascale software stack.

Forschungszentrum Jülich GmbH
in der Helmholtz-Gemeinschaft
Jülich Supercomputing Centre
52425 Jülich I Germany

Phone +49 2461 61-6402

jsc@fz-juelich.de
www.fz-juelich.de/jsc

Simultaneously with the Helmholtz Group, two of its spin-offs, the "Virtual Institute – High Productivity Supercomputing" and the BMBF project SILC were also concluded. The virtual institute is recognized in the HPC community not only for its technical contributions but also for its high-quality tools training programme held in venues as well known as the annual SC conference in the US and as unusual as Chile and Saudi Arabia. Today it includes nine partners from Germany, France, and the US who are committed to supporting its mission with funding from alternative sources for the foreseeable future. SILC, finally, laid the foundation for a closer integration of Scalasca with other performance tools such as Vampir, TAU, and Periscope, which will all soon rest on the common measurement infrastructure Score-P developed in this project. A first version of Score-P was released in January.
(Contact: Prof. Dr. Felix Wolf, *f.wolf@fz-juelich.de*)

EU Project COPA-GT Under Way

The Initial Training Network "Coupled Parallel Simulation of Gas Turbines" (COPA-GT) got under way with a kick-off meeting hosted by the coordinator, the Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique (CERFACS), in Toulouse on 24 January 2012. Funded by the EC Marie Curie Programme, COPA-GT will provide multidisciplinary training for young researchers in the field of propulsion and electric power generation systems.

As an associated partner, the JARA-HPC SimLab "Highly Scalable Fluids & Solids Engineering" based at JSC will welcome guest students and postdocs for up to three months and will organize a special porting workshop in summer 2013. Research topics in the project will include fluid and structural mechanics, combustion, acoustics and heat transfer with an emphasis on improving system performance and reliability, adaptation to sustainable fuels and operating conditions, and reduction of environmental impact. These goals will be pursued by combining expertise in high-performance computing (HPC), physics and engineering to develop a new generation of advanced numerical simulation tools. The COPA-GT partners include the Von Karman Institute for Fluid Dynamics (NL), RWTH Aachen University, SIEMENS AG, TURBOMECA, University of Twente, Barcelona Supercomputing Center, Loughborough University, Rolls-Royce plc and Bull. For more information see *http://copagt.cerfacs.fr/*
(Contact: Mike Nicolai, *mi.nicolai@fz-juelich.de*)

Computing Time on the JARA-HPC Partition

Jülich and Aachen researchers will have joint access to shares of the HPC infrastructures at JSC and RWTH. JSC is committing 500 teraflop/s of its Blue Gene system and RWTH Aachen University is adding 100 teraflop/s of its Compute Cluster to the new JARA-HPC Partition. Computing time on these systems will now be available jointly via a new application procedure; for details see *http://www.jara.org/de/research/jara-hpc/partition/*.
(Contact: Dr. Walter Nadler, *w.nadler@fz-juelich.de*)

Calls for Computing Time Applications

The Gauss Centre for Supercomputing (GCS) has issued its seventh call for large-scale projects. Proposals from publicly funded German academic and research institutions are eligible. Projects are classified as "large-scale" if they require more than 5% of the potentially available CPU cycles on a member centre's high-end system. Available systems are the IBM Blue Gene/P system JUGENE in Jülich, the CRAY XE6 installation HERMIT in Stuttgart, and the IBM iDataPlex SuperMUC in Garching. Further details can be found at: *http://www.gauss-centre.eu/computing-time/call*.

Also, applications can now be made for regular simulation projects on JUGENE and on the general-purpose supercomputer JUROPA at JSC. For more information see: *http://www2.fz- juelich.de/jsc/computing-time/*.

Finally, applications for computing time can be made on the above-mentioned JARA-HPC Partition via *http://www.jara.org/de/research/jara-hpc/partition/*.

All applications should be submitted by 29 February 2012 at the latest.
(Contact: Dr. Walter Nadler, *w.nadler@fz-juelich.de*)

JSC at CeBIT 2012

CeBIT, the world's largest computer exhibition, will take place in Hannover from 6 to 10 March 2012. The Gauss Centre for Supercomputing (GCS) with its three members in Jülich (JSC), Garching (LRZ), and Stuttgart (HLRS) will again be present at the booth of the German Federal Ministry of Education and Research (BMBF, Hall 9). The highlight topic will be "Energy" this year, showcased by displays and presentations. In addition, all three sites will show simulation results from science and engineering obtained using supercomputers and they will inform the public about their activities. We are looking forward to seeing you at the CeBIT.
(Contact: Dr. Walter Nadler, *w.nadler@fz-juelich.de*)

Events

Winter School "Hierarchical Methods for Dynamics in Complex Molecular Systems"
Date: 5-9 March 2012
Venue: Jülich Supercomputing Centre, Rotunda
Info: *http://www.fz-juelich.de/wshd*

Editor: Dr. Sabine Höfler-Thierfeldt, ext. 6765