

Press release
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3rd PRACE Industrial Seminar is Bridging the Gap between Industry and Academia

Stockholm, Sweden. The 3rd PRACE Industry Seminar: "Europe goes HPC: Industrial Competitiveness" was held on March 28-29, 2011 at the Waterfront Congress center in Stockholm, Sweden, and organised by SNIC with PDC-Center for High Performance Computing at KTH serving as the local organiser. The program was developed by a programme committee with representatives from 14 PRACE member countries.

Over eighty participants from 22 countries: representing 39 companies and 13 PRACE partners made this 3rd PRACE Industry Seminar a successful event following its two predecessors in Amsterdam 2008 and Toulouse 2009. Participants represented a range of companies in size, business area, and national origin. Present were large industries, such as Saab, Renault, ABB, AIRBUS, as well as small and medium enterprises (SMEs), such as Rila, Vratis, EURO/CFD, and Vestas. Additionally, independent software vendors (ISVs) such as CD-Adapco, ANSYS, ESI Group or Numtech took part along with HPC vendors such as AMD, Cray, IBM, Intel, Numascale, Southpole, and Supermicro.

The aim of this seminar was to bridge the gap between industrial HPC users and researchers from academia. During the two days of presentations, parallel sessions, and panel discussions, PRACE members described how the PRACE Research Infrastructure can assist industrial users in terms of resources and expertise. Representatives from industry identified their currently existing HPC needs and discussed a roadmap of tight collaboration with the PRACE Research Infrastructure.

Koen Hillewaert, a research scientist at Cenaero's CFD and Multiphysics group, confirmed that "By reaching out to industry, PRACE acknowledges the importance of fundamental research for European companies. The logistic support of pre-competitive research and the common platform where academia and industry can meet, will lead to an enhanced focus and exchange of ideas and a faster pace of progress. For Cenaero the access to the PRACE infrastructure will speed up significantly the work on novel high-order finite element methods for simulating unsteady turbulent flows. The combination of algorithmic developments and HPC computing will, in the near future, allow significantly increased reliability of predictions of noise, flow instabilities, dynamic loading, etc., for full-scale complex industrial geometries". Cenaero is an applied research center providing high fidelity numerical simulation methods and tools to companies focusing on innovation and novel design of highly competitive products. Cenaero is one of the pilot industry users of the PRACE Research Infrastructure that has already produced pioneering results (<http://www.cenaero.be/>).

Industry representatives were very open in their presentations and in discussions about the challenges they face in modeling, simulations, HPC resources and business environment. As an example of a medium-size company with large HPC challenges, **Anders Rhod Gregersen**, Senior Scientist at Vestas (www.vestas.com), described their approach to both identifying suitable locations for wind energy parks and short-to-medium term forecasting of wind energy production from wind energy

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parks, the latter being a regulatory requirement in some countries for effective integration into reliable electric-energy systems as well as for maintenance scheduling of wind turbines. Large amounts of detailed meteorological data for many years form the base for their simulations and forecasts. "The renewable energy industry is working with an energy source, that—unlike power plants burning fossil fuels—are inherently hard to predict the power production from. If we want alternative energy sources like wind to be on par with oil and gas, we need better predictability on expected power production. This is achieved by usage of high-performance computing. With a European ambition of great reductions in CO₂ and thus alternative energy, collaborations between academia and industry like the 3rd PRACE Industry Seminar are of great importance", said Anders Rhod Gregersen.

As an example of a large global industry, **Ola Widlund**, Principal Scientist at ABB Corporate Research, described the multiphysics HPC challenges in design, manufacturing, and deployment of high-voltage, high-power transmission equipment for which ABB is a well recognised world leader (<http://www.abb.com/>). These products typically are customised, one-of-a-kind products for which accurate simulations from molecular to a macro scale of tens of meters is critical for successful product design, manufacturing, installation and reliable operation. As a global company, expertise as well as HPC resources are located at several centers around the world and solutions require effective distributed collaboration and solution approaches. "The PRACE Industry Seminar was an excellent occasion to learn more about PRACE and the ways it can benefit European industry. It was also a good opportunity to meet other industry representatives and exchange thoughts about common challenges in HPC and in the field of numerical simulations generally," said Ola Widlund. He continued, "PRACE is an important initiative for coordinating European HPC efforts, which would otherwise risk being fragmented and diluted. While the top-of-the-line HPC resources are important for attracting the top scientists and keeping European science in the front-line, the greatest benefits for a company like ABB probably lie in the access to world-class technical competence and the possibilities it gives to experiment with new methods and applications together with academic partners."

The next PRACE industrial Seminar is planned to be held in Bologna, Italy, in 2012 with CINECA being the local organiser.

Presentations given during the third industrial seminar are available on the PRACE RI website: <http://www.prace-ri.eu/Presentations-from-the-3rd-PRACE>

More information: send email to industry-info@prace-ri.eu

About PRACE: The Partnership for Advanced Computing in Europe (PRACE) is an international non-profit association with its seat in Brussels. The PRACE Research Infrastructure (RI) provides a persistent world-class High Performance Computing (HPC) service for scientists and researchers from academia and industry. The PRACE leadership systems form the apex of the performance pyramid and are well integrated into the European HPC ecosystem. PRACE receives funding from the EU's Seventh Framework Programme (FP7/2007-2013) under grant agreement n° RI-261557.

About SNIC: The Swedish National Infrastructure for Computing (SNIC) is the national metacentre for high-performance computing. SNIC is operating under the Swedish Research Council. The national coordination of Sweden's six HPC-centres ensures that the resources are used and

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developed optimally. SNIC is also the Swedish partner in PRACE and several other international initiatives/projects for high-performance computing. For more information visit <http://www.snic.vr.se/>

About PDC: PDC – Center for High Performance Computing operates leading-edge, high-performance computers on a national level as part of the Swedish National Infrastructure for Computing (SNIC). PDC offers easily accessible computational resources that primarily cater to the needs of Swedish academic research and education. PDC also takes part in major international projects to develop high-performance computing for the future and stay a leading national resource in high-performance computing. For more information visit www.pdc.kth.se

About KTH: The Royal Institute of Technology (KTH) accounts for one-third of Sweden's technical research and engineering education capacity at the university level. Education and research cover a broad spectrum – from natural sciences to all the branches of engineering as well as architecture, industrial engineering and management, urban planning, work science and environmental engineering. In addition to the research carried out by KTH's Schools, a large number of both national and local Competence Centres are located at KTH. Various research foundations also finance a number of research programmes. For more information please visit www.kth.se

