SEVENTH FRAMEWORK PROGRAMME
Research Infrastructures

INFRA-2007-2.2.2.1 - Preparatory phase for 'Computer and Data Treatment' research infrastructures in the 2006 ESFRI Roadmap

PRACE

Partnership for Advanced Computing in Europe

Grant Agreement Number: RI-211528

D3.2.1
First Industry Seminar

Final

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Document Keywords and Abstract

Keywords:	PRACE, HPC, HET, industry needs, industrial usage definition
Abstract:	This document is intended to cover all parts of the planning, execution and analysis of the First Industry Seminar organized by GAUSS, GENCI and NCF in Amsterdam the 3 September 2008. Around 93 attendees were present and this event was a first "rendez vous" for PRACE with the European industry community. It allowed PRACE to present the project and the attendance to discuss and exchange about HPC in industry as a tool for increasing competitiveness and production and accelerating their innovation. It was also an opportunity to gather during interactive discussion with the attendance needs and expectations about PRACE and to elaborate how the project will build a significant European industrial HPC offer.

Table of Contents

References and Applicable Documents

[1]   http://www.prace-project.eu
[2]   http://www.prace-project.eu/events/past-events/first-prace-industry-workshop-industrial
competitiveness-2013-europe-goes-hpc-september-3-2008-amsterdam
netherlands/?searchterm=first%20industry%20seminar
[3]   http://hpc.science.doe.gov/

List of Acronyms and Abbreviations

CSC	The Finnish IT center for science
EC	European Commission
GENCI	Grand Equipement National de Calcul Intensif
GAUSS	Alliance of the three national supercomputer centres FZJ, USTUTT-HLRS and BADW-LRZ
HET	High Performance Computing in Europe Taskforce. Taskforce by representatives from European HPC community to shape the European HPC Research Infrastructure. Produced the scientific case and valuable groundwork for the PRACE project.
HPC	High Performance Computing; Computing at a high performance level at any given time; often used synonym with Supercomputing.
INCITE	Innovative and Novel Computational Impact on Theory and Experiment
NCF	Netherlands Computing Facilities
PRACE	Partnership for Advanced Computing in Europe; Project Acronym
SME	Small and Medium Enterprises
SOX	The Sarbanes-Oxley Act of 2002
WP3	PRACE Work Package 3: Dissemination, Outreach and Training

Executive Summary

The First Industry Seminar named "Industrial Competitiveness: Europe goes HPC" has been organised by GAUSS, GENCI and NCF, it took place in the NH Grand Hotel Krasnapolsky in Amsterdam on September 3th 2008. The programme of this one day event was organised around a detailed PRACE presentation given by Prof. A. Bachem, 4 success stories from major European companies about their regular HPC usage, an overview of HPC trends and how PRACE maps them by F. Robin PRACE WP7 leader, an interview of Prof. P. Grünberg 2007 Nobel Prize and two sessions of interactive discussions with the speakers and the attendance about industrial needs and expectations regarding PRACE.

One of the goals of the seminar was a wide European attendance. The First Industry Seminar attracted a total of 93 attendees coming from 13 European countries (plus one attendee for the EC and one attendee for USA), representing 35 European companies (29 major companies and 6 Small and Medium Enterprises) covering a wide spectrum of the Scientific Case domains. Ten academic people and 33 people of PRACE or European HPC Centers were also participating to the seminar.

Another goal was to discuss with the attendance about their needs and expectations about PRACE. The feedback collected during the seminar through discussions and evaluation forms are very promising.

The next step is now to organize during one year a dedicated follow up with each attendee in order to address more precisely its needs and expectations.

An online survey will also be organized among all the attendees and all the companies contacted during the invitation phase.

Both initiatives will allow the PRACE project to elaborate a pertinent HPC industrial offer and to present this during a Second Industry Seminar in 2009.

Feedback collected on the evaluations forms showed that the attendees are now very interested in PRACE and as Organizing Committee we think that our final goal to aggregate an European industrial community around HPC has also been fulfilled.

1   Introduction

The overall objective of PRACE is to prepare the creation of a persistent pan-European HPC service. PRACE is divided into a number of inter-linked work packages.

The scientific case developed by HET confirmed that access to a research infrastructure with tier-0 resources and cooperation between scientists in academia and industry for grand challenge applications are critical for maintaining and improving the competitiveness of the European industry.
A liaison program with industries and businesses requiring extreme computing capability will be established:

- to ensure that PRACE takes their needs for tier-0 resources into account
- to enable efficient technology and knowledge transfer

Through frequent contacts with industries and businesses, the consortium will also be able to assess the impact of the tier-0 resource on European industries and businesses. In addition, two workshops dedicated to industry and business will be organized during the project. A survey on industrial collaboration and usage based on the feedback from the workshops will be made to learn from the experiences. Especially the content of the second workshop will be decided based on the experience of the first workshop and other PRACE dissemination work.

It is expected that workshops result in an increased industrial interest for high-end computing and in the reinforcement of contact networks between industry and providers of computing services. In addition, a few industrial pilot applications suitable for Petaflop/s scalability are planned to be identified and run with the prototype systems as a proof of the concept.

2 Goals of the first industry seminar

The First Industry Seminar has been designed exclusively for CEO (Chief Executive Officer), CTO (Chief Technical Officer), CIO (Chief Information Officer) and R&D Managers, responsible for research and development infrastructures in business sectors that are likely to benefit from the use of future HPC infrastructure deployed by PRACE.

It aimed to give to the European industry attendees detailed information about PRACE and to through panel discussions collect their needs and expectations about the project.

Between the two seminars this feedback and the associated follow up for each interested attendee will help to elaborate an industrial offer for PRACE compatible with the attendees expectations and the project goals.

The final name of the First Industry Seminar was:

Industrial Competitiveness: Europe goes HPC

in order to emphasize the gain of competitiveness for the industry provided by the use of HPC.

3 Organising Committee

The PRACE First Industry Seminar has been organized by GAUSS (Germany), GENCI (France) and NCF (Netherlands).
The formed Organising Committee was composed by the following persons:

- Patrick Aerts (NCF)
- Florian Berberich (GAUSS)
- Frances Hoogenboom (NCF)
- Naomi Messing–Klopstra (NCF)
- Mark Parsons (EPSRC)
- Stéphane Requena (GENCI)

A mailing list called *prace-industry@fz-juelich.de* has been created in order to join all the persons involved on the Organising Committee. This email has been used for all the invitation process and the communication with the potential and final attendees.

4 Addressing the Target Audience

Raising the interest of the top-level representatives of large European companies for a full-day event on a topic that might not be in the focus of their attention is a challenge on its own. The Organizing Committee, supported by the PRACE Management Board and NCF as the hosting partner, has decided on a set of measures to achieve the maximum attractiveness of the event:

- A program with a mix of high ranked speakers from both industry and academia, with presentation titles that "speak the language" of industry
- An attractive place (large European capital) that is easy to reach via plane and a meeting venue that high-level industrial representatives will find appropriate
- VIPs as a testimonials (in our case the Physics Nobel Price winner Peter Grünberg, and the mayor of Amsterdam, Job Cohen)
- A mix of attendees from different countries representing either big HPC traditional HPC users with potential users, SMEs, academic users and representative of some European HPC Centers. This was done in order to increase contacts and discussions about potential technology transfer
- Exploitation of the personal contacts of the PRACE Management Board members
- Exploitation of institutional contacts of PRACE Partners through industrial cooperation
- No attendance fee was charged
- The possibility for the attendees to exhibit R&D only posters

Since a major goal was to foster communication between PRACE and industry and gather information about industrial needs and expectations, the programme was also designed to provide some instructiveness. This was achieved through panel discussions and a joint dinner where the participants were seated at small round tables, mixing attendees from different industrial sectors with those from PRACE.

5 Location of the Seminar

After a preliminary evaluation of the potential number of attendees expected, NCF which hosted the seminar has proposed the following location:

NH Grand Hotel Krasnapolsky
Dam 9
1012 JS Amsterdam
The Netherlands

NH Grand Hotel Krasnapolsky is a luxurious 5-star hotel and conference centre located in the very heart of Amsterdam city overlooking Dam Square.

Photo of the Krasnapolsky Hotel

Photo of the Grand Ballroom during the Seminar

Photo of the Wintergarden during the Business Lunch

6 Website of the conference

With to the help of CSC a webpage dedicated to the first industry seminar has been created on the PRACE website [2].

It contains general information about the seminar and also materials like the flyer of the conference, the final version of the programme, the photos taken during the seminar and finally the slides of the talks in PDF format.

7 Flyer of the conference

In order to inform the potential attendees during the invitation phase done by the MB and the WP3 representatives a flyer has been created by the Organizing Committee.

It may be downloaded directly from the webpage of the seminar [2].

8 Booklet of the conference

This booklet and the final programme have been distributed to the attendees the day of the seminar.

In parallel, PRACE will prepare the deployment of Petaflop/s systems in 2009/2010. Prototype systems will be procured and evaluated, scientific libraries and codes from major user communities will be ported and scaled to the Petaflop/s range. A permanent process of technology evaluation for future Multi-Petaflop/s systems will be initiated. The development of new technologies and components will be influenced through collaborations with the European IT industry.

HPC in Energy: Getting ready for Petaflop capacities and beyond, a utility perspective

J.-F. Hamelin, EDF, France

The talk will briefly explain why EDF, the leading producer and marketer of electricity in Europe, became involved in high performance computing (HPC).

A number of examples will be discussed that show the opportunities that HPC already brings to our business today, the involvement of our R&D teams and the possible benefits for other parties in terms of open source scalable codes or platforms. We will also try to illustrate the vast amount of R&D work that is necessary to expand those opportunities and the current collaborative work that is ongoing with a number of leading academic institutions and universities in Europe.

Eventually, we will present some remarks on the possible role of an industrial end-user like EDF in the PRACE initiative and why we believe close relationship with some leading industrial users can be a booster to Europe Petaflop and Exaflop endeavours for research.

The Kaleidoscope Project: Breaking the sound barrier in seismic imaging

Jesús García San Luis, Director of Innovation, Repsol YPF, Spain

The Seismic Method is the most common used technique to find hydrocarbons buried beneath the earth. Seismic is a son of Seismology but restricted to the upper few kilometres of the crust. Seismic procedures borrow ideas and techniques from others areas: Geology, Optics (Geometrical and Electromagnetic), Signal Treatment Theory and Computer Engineering.

The increased exploration on ultra deep water in the Gulf of Mexico is giving rise to new challenges for sub salt seismic imaging. Community agrees Reverse Time Migration (RTM) is the accurate technology in seismic imaging for the complex geological conditions in this particular area. However, RTM cannot be applied on daily basis due to the extreme computational demand. A really RTM application needs systems in Petascale threshold.

The Kaleidoscope Project encompasses a simultaneous research in Hardware and Software to achieve a Petascale solution to Seismic imaging. Four years ago, Repsol YPF defined the goal for this innovative project: developing a complete RTM on a particular multi-element processor (IBM CELL B.E.) ready to be used when the processors were commercially available. In this project, Repsol YPF counts with the collaboration of 3DGeo, Barcelona Supercomputing Center (BSC) and CSIC (Consejo Superior de Investigaciones Científicas).

Keynote: Industry and Government collaboration – Example of the US DoE INCITE program

S. Kalwani, General Motors, USA

For several decades, the US Government has done an excellent job of providing a strong environment for key defense, research and academic institutions thru the usage of HPC technologies. Recently it has begun a process, engaging in a similar formula for enhancing the competitiveness of US industries. The innovative and Novel Computational Impact on Theory and Experiment (INCITE) program, now in its sixth year is being taken up by key US industries in which they are awarded significant allocations on some of the world's most powerful supercomputers for innovative, large-scale computational projects to enable high-impact advances. An example of such a collaboration is to develop software and algorithms which attempt to solve problems on an industrial scale will be discussed as well as the history, background, current needs and future expectations of industry in this regard.

Keynote: HPC trends: Challenges and Opportunities

F. Robin, CEA, GENCI, France

Understanding, taking advantage of, and trying to influence HPC trends is of critical importance for the PRACE project since its goal is to deploy a persistent world class HPC infrastructure in Europe. This work is mainly conducted by WP7 (short term trends) and by WP8 (long term trends) through shared activities including meeting with vendors and prototypes deployment.

While technology will still make possible to build in the future more and more powerful systems, several important challenges will need to be addressed. The most important are:
1) the degree of parallelism and complexity of supercomputers will increase, making necessary to use very scalable applications to get good performances;
2) maintaining the electric consumption and the reliability at an acceptable level
After discussing the current HPC trends and challenges, the presentation will describe the PRACE prototypes and show how they will help to address these challenges.

The role of knowledge workers and high performance computing in drug discovery & development

J. de Vlieg, Schering-Plough, Radboud University of Nijmegen, the Netherlands

Bioinformatics and genomics are well-established and mature scientific disciplines in pharmaceutical research. The availability of complete genome sequences and vast amounts of other genomics-based information have stimulated many efforts to rationalize the drug design process.

It is believed that "omics" and bioinformatics may create many opportunities to speed up the multidisciplinary drug discovery process by increasing our understanding of diseases at the molecular level. This new knowledge may pave the way for novel approaches to the design of drugs otherwise not possible and may give hope for treatment of unmet critical medical needs. However, low productivity and high late stage attrition continue to challenge the pharmaceutical industry. Integrated R&D research approaches and advanced computing solutions are increasingly needed to address the attrition problem and to make full use of advances in genomics to realize its full potential.

In particular, the role of high performance computing and bioinformatics technologies in drug discovery and development process will be discussed in this presentation.

In 20 years

Th. Lippert, Forschungszentrum Jülich, Germany

Europe invests considerable time and effort into designing, developing and deploying a comprehensive and hopefully sustainable ecosystem of well interconnected e-infrastructures. Roadmaps guide the European Commission in supporting the activities. Developers from science and industrial research build the infrastructures and policy bodies are formed to pave the way and to remove administrative barriers. Elements of these pan-European e-infrastructures are Supercomputers (PRACE, DEISA), Grids (EGEE, DEISA, Seegrid, Diligent and many more), Storage and Data services (PARADE). Where do these developments lead us? Who is being served by them? A look onto the crystal ball will try to cover the next two decades.

Go for IT

H.J. van den Herik, Tilburg University, the Netherlands

At the 24th Annual Congress of the game Go, held in Portland, Oregon from August 2-10, 2008 the brand-new Dutch supercomputer Huygens defeated a human Go professional in an official match with a 9 stones handicap. It is the first victory of a computer playing Go against a human being. The application 'MoGo-Titan', developed by INRIA France and Maastricht University, runs on the new Dutch National Supercomputer Huygens, an IBM Power 575 Hydro-Cluster system.

After the victory of IBM's Deep Blue against Garry Kasparov, the game of Go has replaced chess as test bed for Artificial Intelligence (AI) research. Although there has been quite some research in the Go domain for 40 years, the progress in Computer Go has been slow. The best programs played at a (weak) amateur level. All kinds of AI techniques, which were able to produce good results in either games or other application domains, failed to make an impact. Since 2006, when a new algorithm called Monte-Carlo Tree Search was proposed, the level of Go programs has improved drastically.

The current result forecasts that before 2020 a computer program will defeat the best human Go player on a 19x19 Go board in a regular match under normal tournament conditions. This is remarkable, since around 2000 it was generally believed that the game of Go was safe to any attack by a computer program. The recent 9-stones handicap victory by the new Dutch National Supercomputer Huygens casts severe doubts on this belief.

About the 1st PRACE Industry Seminar

The 1st PRACE Industry Seminar aims at bringing together CIOs, CTOs and R&D managers, responsible for research and development infrastructures in business sectors that are likely to benefit from the use of Europe's new most powerful computing infrastructure.

Applications in aerospace, car manufacturing, energy, chemical industry, drug design and medical industry, metal industry, bioinformatics, telecommunication companies, finance and insurance and many more can benefit from the European wide new high-end infrastructure.

During the seminar participants will receive first hand information about the planned PRACE research infrastructure, services and usage. State-of-the-art experiences on super-computing usage in industrial applications will be shared between the seminar participants in order to map the industry needs and expectations in terms of services to be provided, training, security, R&D collaborations and technology transfer by the new supercomputing infrastructure.

The 1st PRACE Industry Seminar is a unique opportunity for industry to voice their specific requirements and potential obstacles for using the PRACE services in an early stage of conception of the future European high-end infrastructure.

About PRACE

The Partnership for Advanced Computing in Europe is a pan-European cooperation of 16 countries and under the same name an EU-funded project. PRACE is to realize an infrastructure for very high-end computing through the acquisition of world class supercomputers and a very practical embedding in the overall European ecosystem of computer resources, the research network and the pan-European grids. Through this effort PRACE seeks to support world class research in science and industry to be conducted in Europe.

The present PRACE preparatory phase project is a €20 million activity funded partly by the EU's 7th Framework Programme , only to prepare for the latter infrastructure to be established. In this context the legal framework, the technology assessment, the access review systems and the contacts with all stakeholders are yet to be realized. As the European industry is one of the major stakeholders, PRACE addresses both the vendor and the consumer industries in High Performance Computing (HPC). The Industry Seminar is a PRACE project activity seeking to foster strong collaborations with businesses and industry to the benefit of both parties. It allows the industry to express its requirements and interests in the earliest stages of the infrastructure development. It is well conceivable that PRACE will form a formal industry board with industry chambers in different countries. Within PRACE five countries have a distinguished role. These are the so-called Principal Partners, who have agreed to host one of the maximally five world class supercomputers, all of different architecture. The Principal Partners are France, Germany, Spain, the Netherlands and the United Kingdom.

PRACE Partners

1. (Coord.) Forschungszentrum Juelich GmbH FZJ Germany
2. Universität Stuttgart – HLRS Germany
3. LRZ der Bay. Akademie der Wissenschaften BADW-LRZ Germany
4. Grand Equipement national pour le Calcul Intensif GENCI France
5. Engineering and Phys. Sciences Research Council EPSRC United Kingdom
6. Barcelona Supercomputing Center BSC Spain
7. CSC Finnish IT Center for Science Scientific Computing Ltd. CSC Finland
8. ETH Zürich – Swiss National Supercomputing Centre CSCS ETHZ Switzerland
9. Netherlands Computing Facilities Foundation NCF Netherlands
10. Johannes Kepler Universität Linz GUP Austria
11. Swedish National Infrastructure for Computing SNIC Sweden
12. CINECA Consorzio Interuniversitario CINECA Italy
13. Poznan Supercomputing and Networking Center PSNC Poland
14. UNINETT Sigma AS SIGMA Norway
15. Greek Research and Technology Network GRNET Greece
16. Universidade de Coimbra UC-LCA Portugal

About Amsterdam

Amsterdam has always been an important European centre of business, banking, craftsmanship, and arts. It has a historic 16th century city centre with its well known canal network and at the same time it is a lively city, home to many cultures and people, always sparkling, full of different cultures, various religious backgrounds and free professions – famous for its role as a safe haven to writers and thinkers throughout the centuries. Its wealth originated from the strategic position near the North Sea, yet inland, at the large water front of the IJ river where the port of Amsterdam grew to be one of the biggest in Europe.

Today's Amsterdam continues to be one of the most modern cities in Europe, competing at the very top as a location for business, conferencing, banking and of course the internet, due to the glass fibre infrastructure and huge internet hub. Just like the currency exchange in the 17th century then famous for its solidity, the Amsterdam Internet Exchange is second to none in the world in terms of domain-changed data. The city of Amsterdam develops its profile in ICT, very high-end computing, gaming, software design, creative industry, genomics and bioscience, and cancer research. It hosts IBM's worldwide expertise centre for water management, is the new home of Philips HQ and the seat of many multinationals from all over world. At the same time Amsterdam is a city where living conditions are exceptionally pleasant in terms of facilities, arts, education and accessibility.

The Amsterdam City Government is convinced of the importance of IT developments and of the innovative power of High Performance Computing. To underline this belief, the Mayor of Amsterdam, Dr. Job Cohen, will address the seminar.

About the speakers

Dr. Patrick Aerts – Director of the Netherlands National Computing Facilities Foundation (NCF), The Hague, the Netherlands, since 1990; member of the Board of Directors of the Netherlands Organisation for Scientific Research (NWO); advisor to the Board of "ICT for Science" of the SURF-Foundation, responsible for the advancement of ICT-use for higher education and research; official Netherlands delegate of the e-Infrastructures Research Group (e-IRG); Dutch coordinator and member of the e-IRG Support Programme (e-IRGSP2); Chairman and member of SIRENE; Dutch representative and member of the EGI Policy Board; Dutch representative and member of PRACE.

Prof. Dr. Achim Bachem – Chairman of the Board of Directors of the Research Centre Jülich, Germany; Chairman of the Board of Directors of the German Gauss Centre for Computing, Germany; Coordinator of PRACE; Vice-President of the Helmholtz Association; member of Advisory Boards of several institutes of the Max-Planck and Fraunhofer society and Universities (RWTH and FH Aachen), as well as of industry advisory boards (Pironet NDH AG, NRW Bank and others); member of academic institutions such as the International Academy of Astronautics, Academy of Geoscience Hannover and others.

Dr. J.-F. Hamelin – Director Information System, Electricité de France (EDF), France. In charge of developing advanced simulation and advanced Information Technology applications with EDF. Member of governing board of CERFACS, CCRT, Teratec and systematic Paris Region. Previous assignments at EDF R&D. Chief R&D Information Technology Officer, Deputy Head of Nuclear R&D (300 research staff), Head of Information and Control R&D Department (60 research staff)

Dr. Jesús García San Luis – Director of Innovation, Repsol YPF, Spain.

Dr. Anwar Osseyran – Managing Director at SARA Computing and Networking Services, Amsterdam, the Netherlands; Chairman of CSCS Advisory Board; member of the National Swiss Strategic Project Team; member of the IT Scientific Advisory Committee of Cyprus; Chairman of the Amsterdam Green IT Initiative; Chairman of the Advisory Board of Almere Grid.

Dr. Job Cohen – Mayor of Amsterdam, the Netherlands.

Dr. Sharan Kalwani – HPC Manager, General Motors, USA; member Steering Committee at IDC HPC User Forum.

Dr. Mark Parsons – Commercial Director, EPCC – Supercomputing Centre of the University of Edinburgh, UK; since 1995, leader EPCC's extensive work with industry and responsible for over €25 million of collaborative projects with industry each year; PRACE WP6 leader.

Dr. François Robin – CTO of the French National Agency for HPC (GENCI), France; Advisor for large HPC systems and infrastructures of the French Atomic Energy Commission (CEA), France, including the CEA Supercomputing Complex in France and the new computing center for fusion that will be located in Japan and used for ITER simulations; PRACE WP7 Leader.

Prof. Dr. Jacob de Vlieg – Global Head Drug Design & Informatics, Schering-Plough Corporation, the Netherlands; Professor Computational Chemistry at the CMBI (Centre for Molecular and Biomolecular Informatics), Radboud University, Nijmegen, the Netherlands; member of the NCF board, IT board CTMM (Center for Translational Medicine), BIG Grid board (the Dutch e-Science grid-based infrastructure); Netherlands Genomics Pre-seed fund, and the KNAW (Royal Netherlands Academy of Arts and Science) Research Foresight Committee "Mathematics in Life Sciences".

Prof. Dr. Thomas Lippert – Director of the Jülich Supercomputing Centre, Germany; member of the Board of Directors of the John von Neumann Institute for Computing; chair/holder for Computational Theoretical Physics at the University of Wuppertal.

Prof. Dr. Peter Grünberg – Scientific staff at the IFF Institute, Forschungszentrum Jülich, Germany; Wolf-Foundation Prize in Physics 2007; Nobel Prize in Physics 2007 for the discovery of Giant Magnetoresistance.

Prof. Dr. Wim C. Nieuwpoort – Professor Emeritus of Theoretical Quantum Chemistry of the University Groningen, the Netherlands; Founder in 1967 of the Quantum Theoretical Chemistry Section funded by the Netherlands Foundation for Chemical Research (SON) under the auspices of the Netherlands Organisation for Scientific Research (NWO); highly responsible for the early realisation of the Dutch high-end computer infrastructure since the seventies and for the foundation of the Netherlands National Computing Facilities Foundation (NCF); former Chairman of the Scientific Board of NCF; Chairman of the Computational Science program of NWO.

Prof. Dr. H. Jaap van den Herik – Professor of Computer Science at the Tilburg University, the Netherlands; Leader of the Dutch efforts in computer chess, computer Go, and computer games; Professor of Law and Computer Science at the Faculty of Law of Leiden University, the Netherlands; co-founder and honorary member of the Belgian/Dutch Association for Artificial Intelligence (BNVKI); Chairman of the Dutch BIG Grid e-Science grid-based infrastructure project

Abstracts

PRACE – Europe goes HPC

Achim Bachem, PRACE Coordinator, Germany

Supercomputers are indispensable tools to solve the most challenging problems through simulations and are becoming more and more important for global companies who need to stay ahead of their competition – both in developing innovative products and offering services. To remain internationally competitive, European scientists and engineers must be provided access to leading class supercomputer systems. PRACE, the Partnership for Advanced Computing in Europe, will create a persistent pan-European HPC service and infrastructure, provided by three to five tier-0 HPC centres. PRACE will enter close collaborations with national and regional HPC centres, scientific user groups and the European industry to advance and shape the European HPC ecosystem.

In the framework of a two year project funded by the European Commission, PRACE will prepare for the implementation of the infrastructure in 2009/2010 by defining and setting up a legal and organisational structure involving HPC centres, national funding agencies, and scientific and industrial user communities to ensure adequate funding, coordinated procurements, efficient use, and fair access.

9 Final Program

The final program with its final design as distributed to the attendees the day of the seminar:

1st PRACE INDUSTRY SEMINAR

Industrial Competitiveness: Europe goes HPC

Programme

| 10:30 | **Walk in** | |
11:00	**Seminar Opening**	P.J.C. Aerts (NCF)
11:15	**PRACE – Europe goes HPC**	A. Bachem (Forschungszentrum Jülich, PRACE Coordinator)
11:45	**Success Stories**	
	HPC in Energy: Getting ready for Petaflop capacities and beyond, a utility perspective	J.- F. Hamelin (EDF)
	The Kaleidoscope Project: Breaking the Sound Barrier in Seismic Imaging	J. G. San Luis (Repsol)
12:30	**Business Lunch**	
	Poster Exhibition	
13:30	**Amsterdam's Mayor welcome**	J. Cohen (Mayor of Amsterdam) (introduced by A. Osseyran, SARA)
13:45	**Industry: Needs and Expectations**	
	Keynote Talk: Industry and Government collaboration – Example of the US DoE INCITE program	S. Kalwani (GM)
	Panel Discussion	M. Parsons (EPCC)
14:45	**Trends and Actors**	
	Keynote Talk: HPC Trends	F. Robin (CEA/GENCI)
	The role of knowledge workers and high performance computing in drug discovery & development	J. de Vlieg (Schering-Plough)
	Guided Discussion	M. Parsons (EPCC)
16:15	**Coffee Break**	
	Poster Exhibition	
17:00	Interview with Peter Grünberg	P. Grünberg (2007 Physics Nobel Prize) W. C. Nieuwpoort (University of Groningen)
17:30	**Results and Lessons Learnt**	Th. Lippert (Forschungszentrum Jülich)
19:00	**Evening Dinner**	
	Dinner Talk: Go for IT	H. J. van den Herik (Tilburg University)
22:00	**End of Seminar**	

10 Attendees

As the participation in the seminar was on invitation only it has been asked to each member of the MB (with the help of WP3 representatives and the organizing committee) to contact potential attendees and to invite them personally to attend to the seminar. In a first step, the potential attendees received an invitation letter, which was sent by each national PRACE partner. After the letter was send out, PRACE MB members and the organising committee made the follow up by phone calls and personal visits.

This process lead to a final participation the day of the seminar (03 September 2008) of **93 attendees** including:

- 13 European countries represented: Netherlands, Portugal, Sweden, France, Germany, United Kingdom, Italy, Spain, Finland, Greece, Switzerland, Austria and Poland

- one industry representative from USA

- one representative from the EC

- 40 industry attendees representing 35 European companies with 6 SMEs (Small and Medium Enterprises)

- 10 representatives from the academic domain

- 33 representatives of PRACE and other HPC European Centres

- 8 more representative including the Amsterdam's Mayor, Peter Grünberg, representatives of Dutch Ministers and some journalists

- a wide range of industrial domains of the HET's Scientific Case covered

A complete list of attendees with their names, countries and affiliations can be found on chapter 15 (Annex 1) of this document.

10.1 Attendees per domain
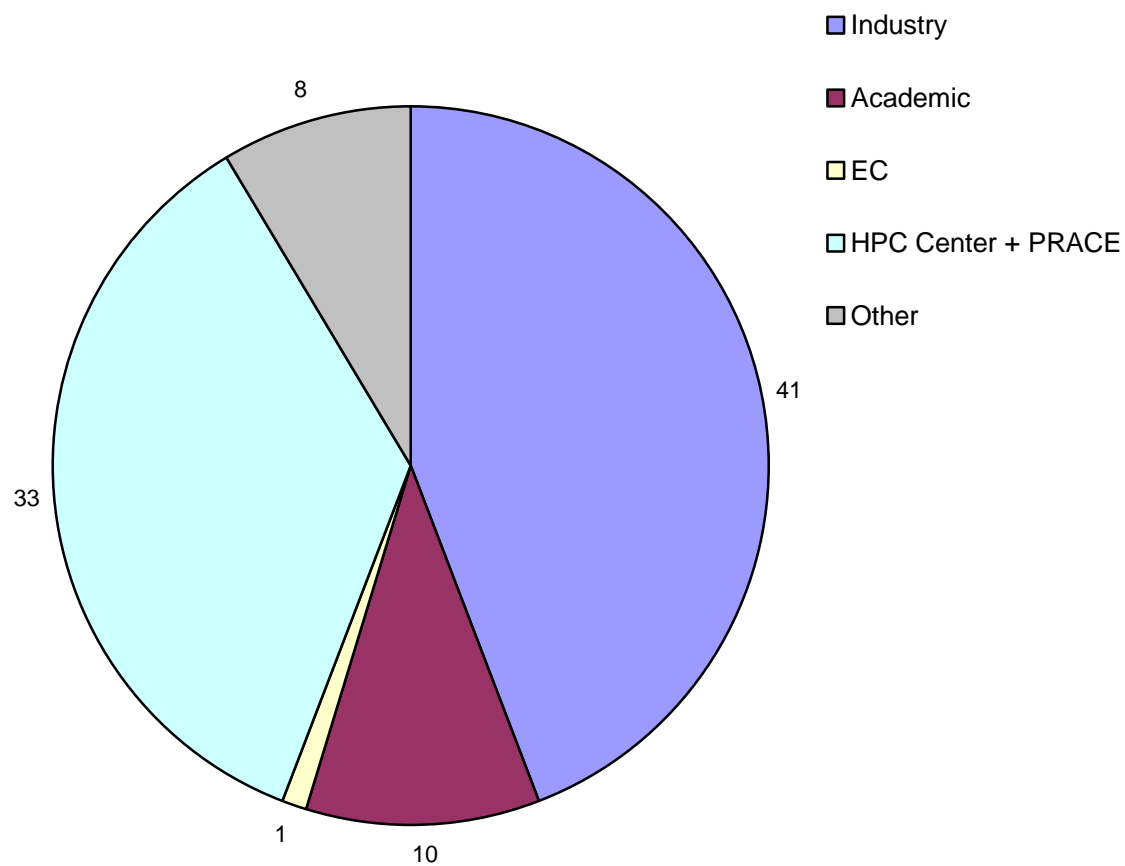
10.2   Attendees per European country
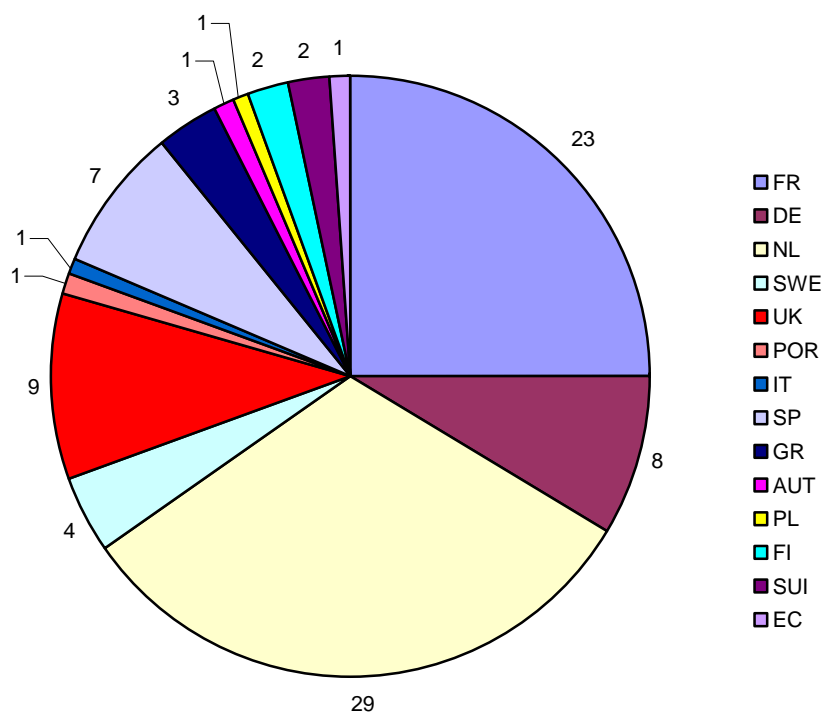
10.3   Attendees per industry domain
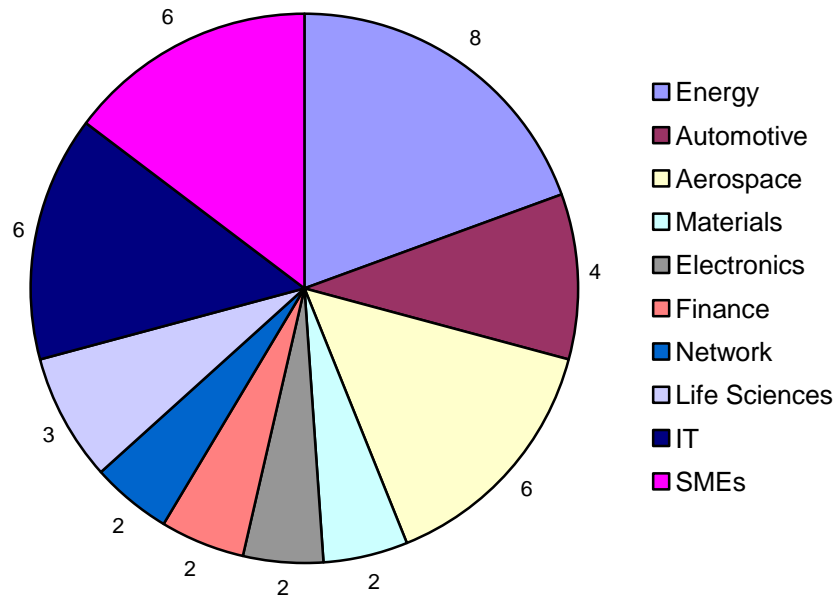
The Energy domain was represented by the following companies:

- CEA (FR), EDF (FR), ENI (IT), TOTAL (FR), IBERDROLA (SP) and REPSOL (SP)

The Automotive domain was represented by the following companies:

- GM (USA), PORSCHE (DE) and SCANIA (SWE)

The Aerospace domain was represented by the following companies:

- AIRBUS (UK), BAE (UK), EADS (FR), SNECMA-SAFRAN (FR) and VOLVO AERO (SWE)

The Materials domain was represented by the following companies:

- ARCELOR-MITTAL (FR) and HUTCHINSON (FR)

The Electronics domain was represented by the following companies:

- PHILIPS (NL) and NXP (NL)

The Finance domain was represented by the following companies:

- BNP PARIBAS (FR) and SOCIETE GENERALE (FR)

The Network domain was represented by the following companies:

- ALCATEL LUCENT (FR) and RENATER (FR)

The Life Sciences domain was represented by the following companies:

- NOVARTIS (SUI), SCHERING PLOUGH (NL) and AKZONOBEL (NL)

The IT domain was represented by the following companies:

- CERFACS (FR), CS (FR), EDS (UK), TER@TEC (FR) and T-SYSTEMS (DE)

The SMEs (Small and Medium Enterprises) domain was represented by the following companies:

- ACUMEN (SWE), ALLINEA (UK), GNODAL (UK), NUMTECH (FR), NAG (UK) and RISC (AUT)

11 Feedback of attendees

Just before the wrap up done by Prof. Thomas Lippert, an evaluation form were distributed to all the attendees of the seminar. The model of the evaluation form can be found in the chapter 16 (Annex 2) of this document.

On 93 total attendees, 59 evaluation forms were collected with 33 answers for the industry attendees (representing 28 companies) and 10 answers for the academic domain and the EC and affiliates (one representative from EC and 2 persons from ICT REGIE). The other evaluations are coming from PRACE partners or European HPC Centres.

The 33 industry answers are representing 80% of the total number of industry attendees and also 80% of the total number of companies.

Anonymous answers have also been dropped.

The evaluation form was composed by the following questions:

Ranking Level: 1-2 for Excellent, 3-4 for Average and 5 for Poor

Question	Results for all attendees	Result for industry attendees	Result for EC+academic attendees
Overall impression	1.58	1.73	1.4
Relevance of topics	1.53	1.58	1.3
Agenda	1.59	1.79	1.5
Quality of background documents distributed	2.39	2.48	2.4
Discussions	2.17	2.33	2.1
Speakers	1.63	1.64	1.5
Preparation & distribution of background documents	2.02	2.18	1.9
Support from organising staff	1.31	1.42	1.1
Conference facilities	1.41	1.55	1.2
Hotel choice	1.29	1.42	1.1

Attendees were also asked to answer to the following questions:
- Do you wish to receive news from the PRACE project? **For this answers the results showed a massive YES result which is a promising result in terms of European industrial interest for PRACE.**

- During the 2 seminars do you want to be contacted for a follow up about your needs and expectations of your company on the project? **The important result is to see that on 33 answers coming from the industry attendees only 8 refused or are not able to give at the moment an answer. It**

illustrates now the need of a dedicated follow up after the seminar in order to discuss in depth needs and expectations of each attendee.

- Do you (or one of your colleagues) plan to attend to the second industry seminar in 2009?
  Again the important result of this question is that 29 of 33 industry attendees are interested on participating on the second industry seminar. This number reported to the total number of industry attendees represent a 70% of interest and 25 over 40 (the total of industry companies without GM) companies motivated.

Finally for those who are interested in participating in the second industry seminar it was asked regarding during the panel discussions to suggest topics and the following were common answers:

- Need to work on parallel sessions
- Focus on automotive and telecom industry requirements
- Focus on cognitive science & applications
- How to scale industry applications and how PRACE will help industry
- Network issues (bandwidth/latency, IP protection, reliability, cost, operators, industrial usage of some academic networks, …)
- Security and trust issues
- Legal issues, SOX
- Licensing problems
- Possible business models
- Involvement of SMEs
- How PRACE can boost European HPC technologies
- Directory of European industry HPC success stories on PRACE Website
- Programming models available, debugging Petascale software
- Training, Stimulating Petascale computing in schools and undergraduate courses
- Which kind of software usable within PRACE? Open Source?
- What IPR should be shared out of industrial-PRACE collaboration?
- Which industrial users are targeted first by PRACE?
- Peer review access for industry
- Integration of capacity with capability
- Actions for PRACE to promote HPC in a "maximum" European industrial community = democratic HPC

12 Dissemination activities

A press release about the success of the First Industry Seminar has been published on the PRACE website on September 19. This press release has been widely spread on other sites like HPCWire, Supercomputing Online or Inside HPC.
The announcement is available here:
http://www.prace-project.eu/news/1st-prace-industry-seminar-greatly-successful

As some journalists (from Platform or EnterTheGrid/Primeur Magazine) were attending the seminar and others from La Recherche (France) or Scientific Computing World (UK) are interested on covering this event we expect to publish more information about the seminar sooner.

Also the next PRACE newsletter (issue number 4) will contain an article about the First Industry Seminar.

Finally we give also access to the slides presented by the speakers during the seminar (in PDF format with the agreement of the speakers) through this link:
http://www.prace-project.eu/documents

13 Future steps

13.1   Follow up meetings

As discussed during the conference and as asked by a lot of attendees when they filled in their evaluation form one of the next steps now will be to organize a dedicated follow-up with each interested attendee.
It will allow having more in depth discussions about the content and the deliverables of the PRACE project and about the needs and expectations of the attendee.

13.2   Online survey

Quickly after the first seminar (in a two months timeframe) an online survey will be conducted among all the participants of the first industry seminar plus all the potential contacts gathered during the invitation process.
This survey will address some important topics regarding the needs and expectations like:
- The kind and the configuration of the hardware and software resources needed
- The type of access requested (research, production, both) and the frequency (permanent, on demand for peak demands, for crash recovery scenario)
- The cost and the terms of access (peer review, cost scheme similar to the INCITE program [3], …)
- The issues of network, security/trust, cost of software licences, training, user support, …

As complement of the follow up meeting the online survey will allow to create a coherent and suitable offer of PRACE project to the European industry.

13.3   Second Industry Seminar

One year after the First Industry Seminar a second seminar will be organised by GAUSS and GENCI.

The goals of this seminar will be to present an industrial offer of PRACE after one year of discussions with the European industry and the EC.

The first industry seminar was targeting testimonials of big European companies (EDF, Repsol, Schering Plough) using HPC for increasing their competitiveness, for boosting their productivity and accelerating their innovation.

The second one will try to address the same benefits on SMEs (Small end Medium Enterprises) which represent in Europe a big reservoir of potential HPC users.

During the invitation process of the first industry seminar a lot of companies unavailable for the first seminar expressed their interest on being involved in the work during the two seminars and confirmed their presence on the second seminar.

14 Conclusions

The First Industry Seminar was a very successful event. It was an opportunity for PRACE to very early in the project timeframe, exchange ideas with a vast attendance representing 13 European countries, 35 European companies and covering a vast panel of the HET's Scientific Case.

During this one day event, attendees were given detailed information about the project in both strategic and technical directions and learnt about the regular usage of HPC in 4 major companies for increasing their competitiveness and productivity or boosting their innovation (EDF, Repsol, GM and Schering Plough). Additionally they were able to discuss their needs and expectations of PRACE with representatives of the project.

The feedback collected during discussions and from the evaluation forms is very positive and now the project has to ensure follow up and regular information with the attendees in order to build an attractive HPC industrial usage model which will be presented next year for the Second Industry Seminar.

15 Acknowledgments

For their contribution and precious help, the author and the Organizing Committee want again to express their thanks to the attendees and the speakers of the First Industry Seminar, the PRACE MB (especially Catherine Riviere and Thomas Lippert) and the WP3 members (especially to Anni Jakobsson).

PRACE is also very grateful for the sponsorship from NCF and the City of Amsterdam and the warm welcome by the mayor of Amsterdam.

16 Annex 1 – List of attendees

The following table reflects the list of the attendees gathered on September 3th 2008 at the registration desk of the seminar.

The list is sorted alphabetically from the last name.

Last Name	First Name	Country	Affiliation
Aerts	Patrick	NL	NCF – PRACE
Alberto	Pedro	POR	University Of Coimbra – PRACE
Anderson	Nicholas	SWE	VOLVO AERO
André	Jean Claude	FR	CERFACS
Appa	Jamil	UK	BAE SYSTEMS
Audoin	Olivier	FR	ALCATEL LUCENT
Bachem	Achim	DE	FZJ – PRACE
Barthel	Jan Piet	NL	ICT REGIE
Baerends	Evert-Jan	NL	VU University Amsterdam
Beal	Pierre	FR	NUMTECH
Benoualide	Daniel	FR	HUTCHINSON
Berberich	Florian	DE	FZJ - PRACE
Berg	Axel	NL	SARA – PRACE
Broer	Ria	NL	University of Groningen
Carlini	Antonio	IT	ENI
Chauliac	Christian	FR	CEA
Cohen	Job	NL	Mayor of Amsterdam
Coron	Francois	FR	EADS
Cross	Murray	UK	AIRBUS

Last Name	First Name	Country	Affiliation
Davari	Sonia	SWE	SCANIA
de Kruijk	Mark	NL	Amsterdam Topstad
de la Fuente O'connor	José Luis	SP	IBERDROLA
de Roode	Thessa	NL	NCF – PRACE
de Vlieg	Jacob	NL	SCHERING PLOUGH
Dijkman	Hans (J.P.)	NL	University of Amsterdam
Dijkstra	Henk	NL	University of Utrecht
Doherty	Thomas	FR	Société Générale SGIB
Duysens	Jacques	FR	CS
Eickermann	Thomas	DE	FZJ – PRACE
Fernandez Prieto	Santiago	SP	REPSOL
Ford	Anthony	UK	GNODAL
Geiger	Alfred	DE	T-SYSTEMS
Girona	Sergi	SP	BSC – PRACE
Gonnord	Jean	FR	CEA
Griffiths	Eugene	SP	BSC – PRACE
Grunberg	Peter	DE	FZJ – 2007 Physic Nobel Prize
Guembel	Chrisoph	DE	PORSCHE
Hagedoorn	Peter	NL	CIO Platform
Hagersten	Erik	SWE	ACUMEN
Hamelin	Jean-Francois	FR	EDF
Hewitt	Terry	UK	EDS
Hollenberg	Jaap	NL	NCF – PRACE

Last Name	First Name	Country	Affiliation
Hoogenboom	Frances	NL	NCF – PRACE
Johansson	Niclas	SWE	SCANIA
Jones	Andrew	UK	NAG
Kaizer	Arie J.M.	NL	PHILIPS
Kalwani	Sharan	USA	GENERAL MOTORS
Kanellopoulos	Christos	GR	GRNET - PRACE
Karayannis	Fotis	GR	GRNET - PRACE
Kerkhove	Dave	NL	AKZONOBEL
Koning	Ilse	NL	OCW
Koski	Kimmo	FI	CSC – PRACE
Krieger	Michael	AUT	RISC
Kunszt	Peter	SUI	CSCS – PRACE
Lenglet	Frédéric	FR	SNECMA - SAFRAN
Lichnewsky	Alain	FR	GENCI – PRACE
Lippert	Thomas	DE	FZJ – PRACE
Llurba	Rossend	NL	NCF – PRACE
Malzac	Philippe	FR	TOTAL
Mathis	Gaël	FR	ARCELOR MITTAL
Menache	Christine	FR	CEA
Messing-Klopstra	Naomi	NL	NCF – PRACE
Meyer	Norbert	PL	PSNC – PRACE
Michielse	Peter	NL	NCF – PRACE
Mueller	Claus Axel	DE	T-Systems Services for Research

Last Name	First Name	Country	Affiliation
Musy	Fabrice	SUI	NOVARTIS
Nackhle	Michel	FR	CS
Nemirovsky	Mario	SP	BSC - PRACE
Nicholson	Jane	UK	EPSRC – PRACE
Nieuwpoort	Wim (W.C.)	NL	University of Groningen
Osseyran	Anwar	NL	SARA – PRACE
Parsons	Mark	UK	EPSRC - PRACE
Pironneau	Olivier	FR	Université Pierre et Marie Curie (Paris 6)
Ramalho-Natario	Maria	EU	EC
Ranti	Tuomas	FI	ICT - Business and Innovation Development, Turku School of Economics
Requena	Stephane	FR	GENCI – PRACE
Riviere	Chaterine	FR	GENCI – PRACE
Robin	Francois	FR	GENCI – PRACE
Rudgyard	Michael	UK	ALLINEA
Sa Dias	Ana Bela	NL	NCF – PRACE
Saguez	Christian	FR	TER@TEC
San Luis	Jésus Garcia	SP	REPSOL
Schillemans	Nazli	NL	Amsterdam Topstad
Scoutheeten	Geoffrey	FR	BNP PARIBAS
Smit	Theo	NL	NXP
Subirada	Francesc	SP	BSC – PRACE
t Hoen	Paul	NL	ICT REGIE
Van den Herik	Jaap (J.H.)	NL	Tilburg University

Last Name	First Name	Country	Affiliation
Vandromme	Dany	FR	RENATER
Versweyveld	Leslie	NL	SCIENTIFIC COMPUTING
Vlakopolou	Effie	GR	Technopolis Thessalonilci
Vogd	Foppe	NL	CIO Platform
Wright	Andrew	UK	EPSRC - PRACE

17 Annex 2 – Evaluation Form

In order to gather the feedback of the attendees an evaluation form has been distributed to the attendees just before the evening dinner.

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Dear Participant,

Thank you for attending the 1st Industry Seminar of PRACE, we hope you enjoyed this event. Please take a few moments to complete this short questionnaire.

EVALUATION FORM

Name: e-mail:

Institution / dept.:

Do you wish to receive news from the PRACE project: YES   NO

I. OVERALL IMPRESSION

What is your overall impression of the event?

Very productive	1	Productive	2	Not productive	3

II. RELEVANCE, AGENDA AND DISCUSSIONS

Please rate the following elements.

	Excellent		Average		Poor
1) Relevance of topics discussed	1	2	3	4	5
2) Agenda (adhered to, allocation of time per topic)	1	2	3	4	5
3) Quality of background documents distributed	1	2	3	4	5
4) Discussions	1	2	3	4	5
5) Speakers	1	2	3	4	5

Comments:

III. ORGANISATION

Please rate the following elements where applicable.

	Excellent		Average		Poor
6) Preparation and distribution of background documents	1	2	3	4	5
7) Support from organising staff	1	2	3	4	5
8) Conference facilities	1	2	3	4	5
9) Hotel (choice, convenience for meeting)	1	2	3	4	5

Comments:

IV. FOLLOW UP AND NEXT MEETING

During the 2 seminars do you want to be contacted for a follow up about your needs and expectations of your company on the project?

Yes	No

Do you (or one of your colleagues) plan to attend to the second industry seminar in 2009?

Yes	No

If yes what subjects would you like to be addressed?

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