HPF+ Exhibition at SC97

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The **HPF+** Consortium:
AVL GesmbH - Austria
European Centre for Medium-Range Weather Forecasts (ECMWF) - England
Engineering System International SA (ESI) - France
NA Software Ltd (NAS) - England
University of Pavia - Italy
University of Vienna - Austria

1 SC97

The SC97 conference (formally known as Supercomputing) has been held in San Jose, California on November 15-21, 1997. SC97 represents one of the most important conferences in the field of High Performance Computing and Networking and this year it attracted more then 5000 attendees. The conference included both technical program and exhibitions. In the technical program, outstanding speakers gave an insight on different fields that cannot be get in any other conference. Invited talks were also given on a variety of subjects by well known experts in the field, .
Among others, H. Schorr (University of Southern California), J. L Hennessy (Stanford University) and K. Kennedy (CRPC, Rice University).
H. Schorr explored the role of supercomputers and networking in upcoming computer science challenges such as operating system research, electronic commerce in Internet and artificial intelligence issues for large knowledge based system, data mining and human-computer interfaces.
J. L Hennessy examined the tradeoff between the two most prominent architectures - distributed shared memory architectures and cluster-based architectures - and their application characteristics, such as bandwidth requirements and latency-tolerance.
K. Kennedy gave a survey on the achievements of software technologies for programming support that will be increasingly important in the near future, including compiler parallelization, run-time libraries and tools for performance analysis, visualization and debugging.

More then 50 technical papers were presented at SC97 covering topics ranging from astrophysics and hydrodynamic and computational fluid dynamic to compilation techniques, languages, visualization algorithms, metacomputing and tools.
Panels have been held on High performance I/O, simulation, computational grids, ASCI alliance as well as on the future of software development environments for parallel and distributed computing.

The exhibition, featuring research, poster, and industry exhibits at SC97 was the largest in the history of the SC conference series. The industry exhibits has drawn a large number of companies and interests. In particular, hardware vendors such as SGI, IBM, NEC, DEC, Fujitsu, Hitachi, Tera and Sony were present with stands.
The aim of the poster exhibition is to report on results and experiences in an informal one-to-one interaction. The posters at SC97 presented applications aspects, software systems, system/run-time tools and performance and debugging tools. In the framework of HPF+ the poster *SIS: SCALA Instrumentation System* has been displayed in the performance and debugging tools section.
The objective of this poster was to present the SCALA Instrumentation System (SIS), a compiler-integrated performance measurement tool which allows an automatic and selective instrumentation of irregular codes parallelized by the Vienna Fortran Compiler (VFC). SIS supports the measurement of important code regions such as subroutine calls, the overhead introduced by the compiler at each call, the INDEPENDENT loops with their work distribution, inspector, executor, gather and scatter phases, sequential loops and IO operations.

During the code parallelization SIS inserts runtime measurement functions automatically based on the compilation/analysis information. Different tracefile formats can be generated for different needs.

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The research exhibits give the opportunity to demonstrate late-breaking research projects and discuss them with researchers from all around the world. The purpose of the HPF+ exhibit was to demonstrate the results achieved in HPF+ with focus on benchmark development in HPF+ based on real scientific applications, the Vienna Fortran Compiler (VFC) and an evaluation of the effectiveness of HPF+ and its implementation.
Our exhibit, as part of the HPF+ dissemination activity, was an opportunity to demonstrate our new and innovative research performed in the project. The HPF+ exhibit is one of a few instances in which research performed in an Esprit LTR project is adequately represented in a world wide basis.

The HPF+ exhibition at SC97 was located in the research area R3 and booth R307, in a strategic position and between well known organizations such as Caltec, Scalable I/O Initiative and INRIA. This position allows our booth to be seen by a large number of visitors allowing each of the HPF+ partner present to interact with them and discuss both project related issues and their own commercial/research activities. The visitors to our booth either from industries or accademic organizations demonstrate great interest on our work.

The HPF+ booth has been organized by the University of Vienna with the collaboration of all the HPF+ partners. In particular the following partners and persons have been directly involved in the management of the HPF+ booth.

- NAS (N. Brown)
- NEC (G. Lonsdale)
- University of Pavia (Massari, Tessera)
- University of Vienna (Benkner, Pantano, Zima)

Flyers, reports and brochures have been distributed during the exhibit and several demos of VFC and MEDEA have been given. Posters of the HPF+ and a poster for each partner contribution have also been displayed.

In conclusion, SC97 can be considered a great opportunity for the HPF+ project to interact and discuss the work we have done and the future of our research on a world wide basis.

We believe this was a significant and successful dissemination exercise.