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Preface

High-Performance Computing and Networking (HPCN) is driven by several initiatives in Europe, the United States, and Japan. In Europe several groups, the Rubbia Advisory Committee, the European Industry Initiative, the Teraflops Initiative, and others encouraged the Commission of the European Communities (CEC) to start an HPCN programme. They recognized the economic, scientific, and social importance of the HPCN technology for Europe.

Members of these groups started the first HPCN conference last year in Amsterdam. The other player in this field was Supercomputing Europe, an annual exhibition and conference, that was founded by Royal Dutch Fairs in 1989.

Due to the personal engagement of Bob Hertzberger, University Amsterdam, Dorte Olesen, University Copenhagen, Peter Linnenbank, Royal Dutch Fairs, and others, we succeeded in combining important European HPCN activities to organize the HPCN Europe 1994 in Munich.

The HPCN Foundation is responsible for the Conference and the Technology Demonstrators Display. The Exhibition and the Vendors Session is organized by Royal Dutch Fairs. The Organizing Committee's intention is that HPCN Europe becomes a sister of the well-known American supercomputer events.

This new start inspired many HPCN experts in Europe. More than 60 specialists decided to take an active role in the Advisory Board and in the Programme Committee, to look for interesting contributions in this field. They enthusiastically broadened the base for HPCN in Europe.

As a result of this activity, more than 220 contributions from all over the world have been submitted, and the Programme Committee selected 140 papers and 40 posters. Over 20 well-known experts from Europe and the United States have agreed to present an invited lecture, demonstrating the advantages of using high-performance computers in their industrial and research application fields, including the keynote speakers, Horst Forster, CEC, Geoffrey Fox, NPAC, and David Williams, CERN.

Many different application areas, such as engineering, environmental sciences, material sciences, computational chemistry, electrical CAD, high-energy physics, astrophysics, neural networks and parallel databases are covered in the conference. In the context of real applications, subjects like languages, programming environments, algorithms, compilers, data parallel structures, monitoring, debugging, and benchmarking of parallel systems are discussed as well.

This event would not have been possible without the broad and personal support and the invaluable suggestions and contributions of the members of the Programme Committee and the Advisory Board. In addition, we would like to thank the referees in the Programme Committee, who spared no effort in evaluating so many papers, in a very short time over Christmas.

Many thanks to our sponsors, the CEC and the Royal Dutch Fairs, for their financial support of HPCN Europe 1994; without this support it would have been impossible to start such a considerable initiative. Also, we highly appreciate the personal efforts of Monika Grobecker and Anschi Kögler, who managed the conference secretariat and prepared these proceedings, and Hans-Georg Paap, who decoded and uncompressed nearly 100 Mbytes of papers. Finally, we are pleased to thank the staff from Springer-Verlag for publishing these proceedings just in time.

March 1994

On behalf of the Advisory Board
and the Programme Committee
Wolfgang Gentzsch and Uwe Harms

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