Summary of Current Activities

IFIP Working Group 2.5 (Numerical Software)

1. A meeting of Working Group 2.5 was held in Portland, Oregon, USA on June 1-4, 2002. The meeting was hosted by the Intel Corp. During the business meeting a number of topics were discussed, such as the current and future status of Fortran, Java Grande applications, and a proposed standard API for discrete Fourier transforms. As part of the meeting an open two-day workshop entitled *The Mathematics of Mathematical Software* was held (see http://math.nist.gov/mmsworkshop/). Thirteen speakers were made presentations. They included WG 2.5 members, as well as researchers from Intel, Hewlett-Packard, and the Oregon Graduate Institute. Among the topics discussed were formal verification methods, interval arithmetic, automatic code generation for FFTs, high-performance numerical software for Intel processors, and practical error analysis. Approximately 35 persons attended the workshop.

2. The next meeting of Working Group 2.5 will be held in Strobl, Austria on June 15-21, 2003. An open four-day workshop on *Numerical and Symbolic Scientific Computing* will be held during the meeting. The general topic of the workshop consists in the design, verification, implementation, and analysis of numerical, symbolic, geometrical and graphical methods for solving large-scale direct and inverse field problems and their synergistic use in scientific computing for real-life problems of high complexity. The workshop will be hosted by the University of Linz, in conjunction with research centers in Graz, Vienna, Tubingen, Stuttgart, Munich, and Augsburg, and the Research Institutes CAESAR (Center for Advanced European Studies and Research) and RICAM (Johann Radon Institute for Computational and Applied Mathematics).

3. Working Group 2.5 members are developing a volume of papers entitled *Handbook on Accuracy and Reliability in Scientific Computing*. The objective of this book is to investigate some of the unique difficulties related to scientific computing, such as accuracy requirements and rounding, and to explain how to obtain accurate and reliable results. The audience for the book will be users of existing tools and packages who need to increase their confidence in the validity of the results, and those who wish to develop robust and reliable software of their own. Contributions from about a dozen working group members are planned.

4. Future meetings: Washington, 2004; Hong Kong, 2005

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