International Federation for Information Processing
Technical Committee 2: Software Theory and Practice
Working Group 2.5: Numerical Software
http://www.nsc.liu.se/wg25/

September 9, 2009

R. Baker Kearfott, Chair
IEEE Interval Arithmetic Working Group
Box 4-1010
University of Louisiana at Lafayette
Lafayette, LA 70504-1010

Dear Professor Kearfott,

The IFIP Working Group 2.5 on Numerical Software very much appreciates the important work of the IEEE Interval Arithmetic Working Group in the development of a standard for interval arithmetic to support scientific computing with guarantees.

In that regard, WG 2.5 strongly supports inclusion of an exact dot product in the IEEE Standard P1788. The exact dot product is essential for fast long real and long interval arithmetic, as well as for assessing and managing uncertainty in computer arithmetic. It is a fundamental tool for computing with guarantees and can be implemented with very high speed.

We believe that this capability would provide much needed support for verifiable numerical computing, whose easy availability would serve to increase the reliability of scientific computing for many critical applications. This issue was discussed at length by the Working Group, which voted unanimously at its meeting in August 2009 to make its views known to your committee. With 30 members and 18 affiliates from 13 countries,

WG 2.5 represents a wide cross-section of the numerical computing community, and we believe our views are representative.

Thank you for your kind attention.

Sincerely,

Dr. Ronald F. Boisvert
Chair, IFIP Working Group 2.5

Cc: Members, WG 2.5
Nathalie Revol
George Corliss
Juergen Wolff von Gudenberg
Dan Zuras
John Pryce