BBN TECHNOLOGIES
A Verizon Company

April13, 2001

David E. Bakken, Assistant Professor, Computer Science
School of Elect. Eng. & Computer Science
PO Box 642752
Washington State University
Pullman, WA 99164-2752

To Whom It May Concern:

This is a letter of letter of reference for Dr. David Bakken regarding his suitability for upcoming opportunities as a consultant to development activities in the general area of distributed systems and advanced middleware solutions.

My name is Dr. Richard Schantz. I am a Principal Scientist at BBN Technologies, now a part of Verizon Communications Corporation. I have been at BBN Technologies (and its predecessors) for over 25 years, and have been instrumental in the emergence and evolution of formalizing distributed systems concepts starting from the limited, pre-Internet exploratory environments, through today's ubiquitous, world wide, emerging global connectivity envisioned for a communications infrastructure. In particular, my emphasis has been on leading the construction of working prototype systems demonstrating new, innovative concepts for developing distributed solutions, and technology transfer of these concepts into mainstream software engineering practice. As part of these activities we have been instrumental in developing middleware as a separate category of software from networking, and in developing the first operational system using distributed objects as an organizing paradigm. During my career I have worked with hundreds of talented system architects, developers, R&D proponents, academics and entrepreneurs.

Dr. Bakken joined my research group in 1994 fresh from completing his Ph.D. degree at the University of Arizona, and became a key contributor for his 5-year tenure at BBN. Dave joined us at a particularly volatile time: we were transitioning from emphasizing the technology of interconnection, which by that time was beginning to be successfully transitioned through commercial products and standards (such as DCE and CORBA), to emphasizing the properties of the results of the interconnection. These issues represented the next large leap forward. Along with a few other senior contributors, Dave helped formulate research plans for an integrated Quality of Service oriented approach to advanced middleware. Due to his previous background in fault tolerant behavior, Dave became the primary proponent of development activities in that area of focus. Over the next 5 years, Dave was introduced to the prevailing BBN R&D methodology, which combined elements of advanced concepts, rapid prototype development, and trial use by real users with real problems in the areas of concern. In his role as a senior organizer and contributor, Dave maintained interactions with leading academic researchers in his area of focus, established working and contractual relationships toward constructing prototype software, which embodied the new ideas, and helped guide the ensuing implementation.

Needless to say, in this environment, the need to transition advanced concepts into trial use leads to an emphasis on what can actually be built within limited time and resource constraints, and in working relationships with similarly focused collaborators.

The first half of Dave's tenure at BBN was largely focused on idea development and resource acquisition. The second half of Dave's tenure at BBN became largely focused on development, technical fine-tuning and idea dissemination through meetings and conference presentations. Dave excelled in the visionary aspects of the ideas which were being developed, and also in translating those ideas into effective working arrangements with other academic groups carefully chosen for compatible ideas and for their strong emphasis on working code to back up the emerging ideas. Although Dave left BBN for his current university position before his part of the development had sufficiently matured to the state of usefulness, he was instrumental is setting the direction which now is reaching the state of suitability for user trials. In addition, he has taken the research methodologies and research agendas, which he contributed to developing at BBN, with him to his current position at Washington State University. There, he continues to develop new ideas, new insights, and new concept implementation code, now as one of the academic collaborators with BBN. In addition, Dave is becoming one of the proponents of these research directions, while developing the particular branches most appropriate to his interests and point of view.

In summary, Dave has a background that is optimally rooted midway between the academic need to move into uncharted territory, and the commercial need for working systems right now. He has been part of a research laboratory style larger group pursuing these objectives, is currently organizing his own university style group, and is complementing that with consulting arrangements to enhance the transition opportunities. His background makes him well suited to recognize opportunities in this realm, and to understand the difficulties and the discipline needed to be successful in transition of new ideas and approaches.

Dr. Richard E. Schantz
Principal Scientist