



# IEEE KW Section



## Issues of Network Control Plane for the Grid Community- What Has Changed?

**Dr. Admela Jukan**

**Date: Dec. 9, 2005**

**Time: 9:00-10:00am**

**Location: Davis Center 1304, University of Waterloo**

**ABSTRACT:** E-science applications present a new challenge for networks, as they require the high bandwidth connectivity to support leadership class supercomputers (teraflops+) and, at the same time, highly dynamic operation enabled through Grid computing today. Significant research activity has been carried out to meet this challenge and, in particular, in understanding how to provision and use high capacity connections in networks below the IP layer, such as in optical networks. In contrast to the common belief, however, the use of high-capacity networks is not about installing fibers between remote research centers; instead, it is how these connections are accessed and utilized by the driving applications. This presentation will address the new evolving paradigms for network control plane and will argue that the majority of issues related to networking have changed: from architecture, over the role of users and resources, to network services.

**Admela Jukan** received the M.Sc. degree in Information Technologies and Computer Science from the Polytechnic of Milan, Italy, and the Ph.D. degree in Electrical and Computer Engineering and the Habilitation degree (venia legendi) in Communication Networks, from the Vienna University of Technology (TU Wien), Austria. She is currently Associate Professor at INRS/Univ of Quebec in Montreal and she is also Visiting Associate Professor at the University of Illinois at Urbana Champaign (UIUC). Prior to joining UIUC, she served as Program Director in Computer and Networks System Research at the National Science Foundation (NSF) in Arlington, VA, and she was Research Assistant Professor at the Georgia Institute of Technology in Atlanta, GA. While at NSF, she was responsible for funding and coordinating US-wide university research, education and technology transfer activities in the area of network technologies and systems. For seven years, she has been with the Vienna University of Technology, Austria, first as Assistant Professor and then as University Lecturer. In 1999 and 2000, she was Visiting Scientist at Bell Labs, NJ. Dr. Jukan is the author of numerous papers in the field of networking, and she has authored and edited several books. Her work has produced seminal contributions to the field, and she is recognized for having introduced the concept of Quality-of-Service and constraint-based routing in optical networks. She is the recipient of numerous research grants in Europe and in the US, and she also received the Best Innovative Research Award of the Vienna Academic Anniversary Foundation, in 1999, and the Best Research Proposal Award from Sprint, in 2002. She serves as a member of the Quality Assurance Committee of the Network of Excellence research initiative, currently the largest pan-European research program. Dr. Jukan has chaired and co-chaired several international conferences and she is a Liaison Editor of the IEEE Communication Magazine Feature Topic on Optical Control Plane for the Grid Community: Opportunities, Issues and Vision, to appear in March 2006.