Applications of Software-Defined Networking (SDN) in Power System Communication Infrastructure: Benefits and Challenges

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PSERC Public Webinar
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Description: In recent years, the Software Defined Networking (SDN) has gained significant popularity among network operators and equipment manufacturers. By providing an efficient way to separate the forwarding decisions from packet processing, the SDN approach is able to address many challenges in design and operation of complex networks, including the high cost of developing and deployment of new applications, poor utilization of network resources, inadequate support of real-time applications, and many others.

We will begin the presentation by surveying the fundamentals of the SDN approach. We will provide a detailed explanation of the network abstractions and protocols, including a core data model, as well as primitives including instructions, actions, meters, groups, and queues. Then, we will discuss the benefits and advantage of using SDN for improving the performance and availability of power systems networks. We will emphasize meeting specific requirements of transmission and distribution systems as well as handling faults and outages. Finally, we will discuss research efforts, the technology outlook for OpenFlow and SDN technologies, and open research problems.

Biography: Dr. Sprintson is an Associate Professor with the Department of Electrical and Computer Engineering, Texas A&M University, College Station. From 2003 to 2005, he was a Postdoctoral Research Fellow with the California Institute of Technology, Pasadena. His research interests are in the general area of communication networks with a focus on network coding and software defined networks. Dr. Sprintson received the Wolf Award for Distinguished Ph.D. students, the Viterbi Postdoctoral Fellowship, and an NSF Faculty Early Career Development (CAREER) award. Currently, he serves as an associate editor of the IEEE Transactions on Wireless Communications. He has been a member of the Technical Program Committee for the IEEE Infocom from 2006 to 2015.

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PSERC's Webinar Coordinator: Venkataramana Ajjarapu, Iowa State University, vajjarap@iastate.edu.

Professor Ajjarapu welcomes your feedback on PSERC webinars and suggestions for future ones.