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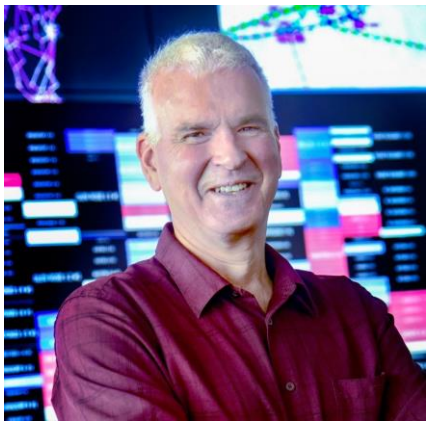
IEEE BDA Tutorial Series: Big Data & Analytics for Power Systems

New Developments in the Visualization of Wide-Area Electric Grid Information with Application to Grid Interconnection Studies

Prof. Thomas J. Overbye
Texas A&M University



9:00 am-10:30 am, Wednesday, Jun. 23, 2021, Pacific Time
(6:00 pm - 7:30 pm, Wednesday, Jun. 23, 2021, Central European Summer Time)

Abstract: An ongoing power system big data challenge is how best to utilize and ultimately present information to a human user derived from either actual system sensors or engineering studies for large-scale electric grids. In operations this data might come from measurement systems such as SCADA or PMUs, while in a study context it might be generated by a various applications such as power flow and dynamic simulations. This presentation discusses some of the newer visualization techniques that are being deployed by the electric power industry. These include animation, contouring, time-varying graphs, geographic-based displays, image blending, and data aggregation techniques. The techniques are demonstrated using a variety of actual and synthetic electric grids including some studies focused on the interconnection of large-scale electric grids.

Bio: Thomas J. Overbye is professor and holder of the O'Donnell Foundation Chair III in the Department of Electrical and Computer Engineering at Texas A&M University (TAMU). Prior to joining TAMU in 2017 he was a Fox Family Professor at the University of Illinois at Urbana-Champaign. He received his BS, MS, and Ph.D. degrees in Electrical Engineering from the University of Wisconsin-Madison. Before starting his academic career he was employed with Madison Gas and Electric Company. He is the original developer of PowerWorld Simulator, a co-founder of PowerWorld Corporation, and an author of a widely used Power System Analysis and Design book. He was also the recipient of a University of Wisconsin-Madison College of Engineering Distinguished Achievement Award, the IEEE Power and Energy Society Outstanding Power Engineering Educator Award, and is a member of the US National Academy of Engineering.

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