

Specifications for the Power System Simulator

Anjan Bose
Washington State University

Dozens of software packages are available today that simulate some aspect of the power grid. Because a simulation package is limited, only a small range of applications can be tested on it. Is it possible to design more versatile simulators for broader applications? For example, can we study electromagnetic, electromechanical, and uniform frequency dynamics in the same simulator? How about a simulator that can handle transmission and distribution, digital protection and continuous control, and include communication and computation delays as well? Almost all the new technologies (smart grid) are dependent on digital data and communications, the performance of which have to be part of the simulation. We will discuss the challenges facing the design of the next generation test beds and applications.