Abstract

The emerging Smart Grid vision is of an interconnected power distribution network that organizes transmission, distribution, monitoring, and control of electricity. This vision is being realized through the design and implementation of an information network overlaying the traditional power grid. Reliability, Privacy and Security communications and information management is substantial issue to all aspects of the Smart Grid.

We try to find a practical solution to the mismatch between the cyber and physical layer by using the overlay network to control the cyber network. We presented an overview of our foundations, and proposed a preliminary design model of cyber-physical integration. For the physical network we built our assumption by using the structure peer to peer network (Chord algorithm) to reduce computation and communication overhead between the nodes.

Future work lies in designing appropriate topologies and algorithms to bridge the cyber and physical layers.