Using Service Oriented Architecture in a Generic Virtual Power Plant

The purpose of this paper is to find and describe a suitable software framework that can be used to help implement the concept of a Generic Virtual Power Plant in the future power system. The Generic Virtual Power Plant concept, along with the utilization of distributed energy resources, has many interesting properties that can influence the future shape of power markets. The concept holds many promises including cheaper power to the consumer, a more flexible and responsive power production and the support of a more environment-friendly development. In order to realize a software solution supporting the Generic Virtual Power Plant, an array of different software design principles, patterns and architectures must be applied. Especially Service Oriented Architecture (SOA) can aid in implementing the Generic Virtual Power Plant.