

DOE—GMLC

Declaration of Interoperability



29 October 2016

We, the participants in the GMLC Interoperability program, based upon our collective resolve and industry experience, set forth these principles, enumerated below, aligned with the Department of Energy's congressionally mandated charter to convene, adopt, and deploy tools and techniques to enable interoperability to create a more reliable, secure, affordable, flexible, sustainable, and resilient electric power system. We believe this industry-led approach can, by following these principles, develop the needed solutions to achieve these goals.

We recognize that a lack of cost-effective interoperability creates onerous and ongoing problems for system integration and operation.

- It wastes energy.
- It wastes money.
- It wastes time.
- It impedes goals of renewable generation and grid performance.

Our future electric power system must easily integrate great numbers of an evolving mix of intelligent, interacting systems and components. Achieving this state requires the advancement of interoperability and the principles that support it; this is a shared challenge requiring alignment across all electric system stakeholders. It is therefore necessary to articulate interoperability goals and requirements and establish a strategic vision for interoperability.

Interoperability is "The ability of two or more systems or components to exchange information and to use the information that has been exchanged"¹. Interoperability also refers to the steps required to achieve this state, which directly relates to the level of effort to successfully integrate systems or components. With this understanding, we recognize the following principles:

- Systems or components need to interact according to agreements at their interface boundaries.
- A system architecture description needs to clearly identify the interface points where systems or components may interact.
- Interoperability concerns need to pervade across a heterogeneous mix of technologies, business practices, and deployment approaches.
- Stakeholders need to participate in the process to develop, use, and maintain interoperability standards, conventions, and supporting capabilities such as certification programs, registries, and security policies.

The principles above require changes in today's technologies, business practices, and deployment approaches, to promote interoperability and simplify the integration experiences.

We hereby recognize that improving stakeholder agreement on clear interface definitions and mechanisms to simply and cost-effectively integrate systems and components will catalyze the realization of a more efficient and secure electric system sensitive to our operational, economic, and ecologic needs. And in response, we join in the efforts to advance interoperability of the future electric system and commit to changing technologies and business processes to accomplish this mission.

¹ ISO/IEC/IEEE 24765: *Systems and software engineering — Vocabulary*. International Organization of Standards. 2010.