Advanced Identity Management for Extreme-Scale Scientific Collaboration

Summary of Single Investigator Proposal in response to DE-FOA-0000695

PI: Von Welch, Indiana University

Identity Management is fundamental for establishing trust. It involves managing entities and privileges – who they are, how they are identified, how they are authenticated, what privileges they have, what roles and responsibilities they have – and enabling the communication of that identity information to interacting entities, allowing them to authenticate and authorize each other.

Extreme-scale collaborations bring many challenges to identity management, including the incorporation of the collaboration itself, as a participant in the interaction between scientists and the resources, both in the role of providing identity information and intermediary services. There has been a great deal of applied research and controversy in the community regarding how collaborations should interact with resource providers, but a common model has yet to be achieved.

This proposal focuses on formalizing the IdM model for collaborations, expressing how they interact with their users and the resource providers. It will build software to support that relationship, both to validate the models it develops and advance the state of practice. The focus on collaborations within IdM was chosen due to its importance to the scientific community, the limited number of collaboration-resource provider relationships, making it a reasonable area for progress. Additionally, the fact that much applied research has been done in this specific area, makes it ready for a formal model.

The proposal spans a three-year effort, and mixes development of models through community input, technical leadership and socialization, and development of software to provide a balance between intellectual leadership and practical improvements. The PI is well qualified with significant experience in designing, developing, operating and achieving community agreement on IdM solutions. The project results will be open to foster community contributions and adoption.