

Remote Management of EDS Experiments

Website: <http://cred-c.org/researchactivity/remotemgt>

Researchers (Illinois): David Emmerich, Jeremy Jones, Tim Yardley

Industry Collaboration: This effort aims to enable capability to be leveraged for cyber-physical experimentation across the CREDC portfolio. As such, this activity is not directly tied to industry. However, indirectly, these capabilities enable the validation and verification of technology that will potentially be deployed to industry across the entire CREDC portfolio.

Description of research activity: A keystone to successful transition of CREDC research from concept to field deployment is use of testbed resources to develop those tools, and then to put them through a rigorous validation and verification process. While testbeds for EDS do exist in a variety of universities and national labs, they require the user/evaluator to be physically present at the testbed, with experiment configurations installed by testbed staff. This effort will leverage existing and proposed capabilities to realize a remotely accessible environment that supports tool development and evaluation. Our focus will be on providing near-seamless accessibility to testbed resources and necessary visibility to manage and operate experiments remotely. This builds on the composable virtual architecture and the physical provisioning.

How does this research activity address the [Roadmap to Achieve Energy Delivery Systems Cybersecurity?](#)

This research focus on enabling capabilities that allow researchers to explore all of the framework areas, including but not limited to:

- Build a Culture of Security
- Assess and Monitor Risk
- Develop and Implement New Protective Measures to Reduce Risk
- Manage Incidents
- Sustain Security Improvements

Summary of EDS gap analysis: A keystone to successful transition of CREDC research from concept to field deployment is use of testbed resources to develop those tools, and then to put them through a rigorous validation and verification process. While testbeds for EDS do exist in variety of universities and national labs, they require the user/evaluator to be physically present at the testbed, with experiment configurations installed by testbed staff. This effort will leverage existing and proposed capabilities to realize a remotely accessible environment that supports tool development and evaluation. This is critical for a consortium like CREDC, but will have broader impact as the framework we develop can be used by other EDS testbeds.

Full EDS gap analysis: Widely, there are no open-access energy delivery system research testbeds that can provide capabilities necessary to support CREDC research. Historically speaking, TCIPG has built a facility that is used to prove out and validate efforts in this domain. The research efforts associated with this project are part of a bigger picture mapping to enhance capabilities and extend the usability of this facility to support the depth and breadth of CREDC research.

Bibliography:

No direct references are necessary.