

Security Visualization



*Developing
visualization
methods for
situational
awareness*

Industry partners have indicated that they receive millions of network-related security events per day creating two challenges: detecting and identifying warning signs of advanced cyberattacks and the risk of losing information in the enormous amount of event data generated on a routine basis. New methods are required to support operators to identify and understand anomalous behavior across their networks. This project develops new technologies based on visual metaphors – as well as 3D and immersive visualization techniques – to provide effective approaches to handling large amounts of dynamically changing information relevant to mitigating typical cyberattacks.

KEY TAKEAWAYS

- Visualizes power-network related data in a cross-platform compatible manner

OUTCOME

The network-based visualization metaphor developed through this effort includes all components of the power grid, facilitating a quick and effective understanding of the whole system. A proof-of-concept implementation is developed that can interactively show large, complex networks.

PARTICIPANTS



ROLE

This project is part of the Secure Evolvable Energy Delivery Systems (SEEDS) academic consortium. SEEDS researches and develops innovative cybersecurity technologies, tools, and methodologies to advance the energy sector's ability to survive cyber incidents while sustaining critical functions.



Develops visualization methods and proof-of-concept implementation.

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DOE Share: \$12,226,504

Cost Share: \$3,082,610

CYBERSECURITY FOR ENERGY DELIVERY SYSTEMS (CEDS)

CEDS projects are funded through DOE CESER, which aims to enhance the reliability and resilience of the nation's energy infrastructure by reducing the risk of energy disruptions due to cyberattacks.

Website: <https://www.energy.gov/ceser>

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