GOALS

• Develop a visualization application to aid understanding of the complex security guidelines and relationships conceptualized in the National Institute of Standards and Technology Interagency Report (NISTIR) 7628, Guidelines for Smart Grid Cyber Security.
• Enable the aggregation and organization of cyber security guidance in flexible, user-specified ways to enable rapid synthesis of strategic ideas.
• Examine approaches for mapping guidelines to actual network maps.
• Provide an application to easily and effectively convey cyber security concepts and guidelines to widely varied audiences.
• Automate the ingestion of “guideline” and “relationship” information.

FUNDAMENTAL QUESTIONS/CHALLENGES

• NISTIR 7628 is a 3-volume, 600+ page technical document. Very challenging to digest and understand
• Organizes the power system into 7 domains having 49 actors, ...

RESEARCH RESULTS

• Web-based, HTML-5 visualization tool.
• User selects and controls the information displayed:
  – Zooms in and out;
  – Rotates in 3 axes;
  – Selectable Layers;
  – Windowed “player” information from NISTIR 7628
• Seeking effective methods to label actors, logical interfaces, and interfaces compatible with interactive perspective changes.
• Seeking ways to increase information content available to user.

BROADER IMPACT

• Visualization application has the potential to provide far-reaching benefits in conveying complex information effectively to wide audiences.

FUTURE EFFORTS

• Leverage an advanced application platform to increase the NISTIR 7628 technical content available to the user.
• Automate data and “relationship information” ingestion.
• Leverage computer graphics expertise outside the existing team.
• Investigate effective ways to visually map NISTIR 7628 guidelines to realistic cyber networks.
• Broaden the tool’s application to similar complex information visualization requirements.