ALL HAZARDS ANALYSIS FRAMEWORK

All Hazards Analysis (AHA) is a dynamic dependency analysis framework that enables critical infrastructure knowledge discovery and decision support.

INL researchers and analysts use the AHA tool to look holistically across energy infrastructures for vulnerabilities and mitigations in the system before natural or manmade disasters occur.

AHA is an optimized framework for the collection, storage, analysis, and visualization of critical infrastructure information. Developed by Idaho National Laboratory (INL), AHA identifies dependencies and associated risks, giving decision-makers and emergency managers a comprehensive view of interconnected infrastructure systems. Utilizing a function-based approach, it presents information in the form of nodes (infrastructure) and links (dependency relationships).

Because AHA continually learns, it can blend general and facility dependency profiles with new information and changing network structure. This allows for more detailed sector and consequence analysis than possible with other infrastructure modeling systems.

DATA

As a distinctive tool, AHA users are provided with a baseline dataset built from open-source structured and unstructured data, along with spatial heuristics. Users are then able to import and manage their own data based on their expertise and focus area. The data entered is only accessible to authorized users.

VISUALIZATION

This tool provides both geospatial and graph visualization capability due to problem space complexity. Data can be viewed through linked Map View and Dependency Graphs. AHA has a user-friendly interface but can be customized to user needs.

APPLICATION AND USERS

Applications uses include the National Response Framework (Prevention, Protection, Mitigation, Response and Recovery)

AHA's uses are extensive—from analyzing potential consequences to ensuring continuity of operations. AHA users include:

- State and Local
- Governments
- Federal Government
- National Laboratories
- Private Sector
- Colleges and Universities

INL
Idaho National Laboratory

AHA's unique use of geospatial imaging and interdependency prediction enable planners to simultaneously visualize the location and connectivity of infrastructure networks and potential cascading of consequences within a community and across regions.
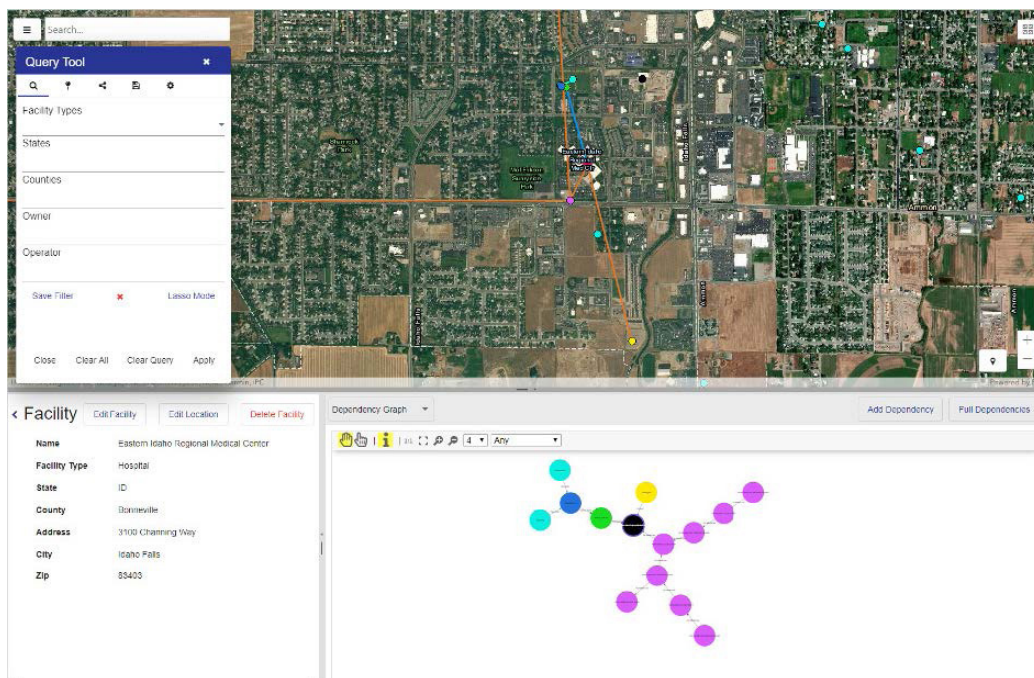
QUICK FACTS

AHA provides the ability to store and model infrastructure systems as linked multi-graphs providing an intuitive and natural representation.

- Visualizes the consequences of infrastructure failure from man-made and natural disasters
- Enables collection and documentation of dependency information
- Provides a framework and capability for both analysts and decision-makers
- Enhances the continuity of operations across all sectors
- Enhances disaster preparedness planning through realistic scenario modeling and table-top exercise execution
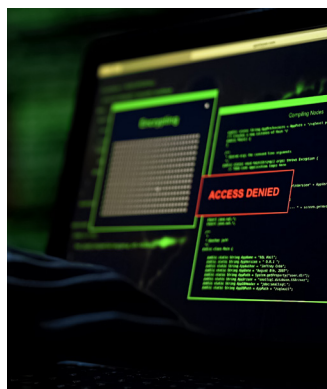
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