Evolution of a GIS-Based Capability (FASTMap) to Support Analysis of Critical Infrastructure Disruption

Angie Kelic, Ph.D.

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Sandia National Laboratories

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U.S. DEPARTMENT OF **ENERGY**

NNSA
National Nuclear Security Administration

Overview

- A bit of history
    - How FASTMap came to be and the early goals
- Situational awareness
- Visualization of model results
- Incorporation of models
- How our customers use FASTMap

A bit of history

- FASTMap was developed in support of crisis action response efforts of the National Infrastructure Simulation and Analysis Center (NISAC) for the Department of Homeland Security

- Driven by and continuing to this day:
  - The need to respond more quickly (hurricane analysis went from a 3 day to a 12 hour turnaround)
  - An increased number of areas of concern for the customer
  - The need to free up analysts to be analysts rather than data processors by automating performance of tasks analysts do all the time

Situational Awareness

- What's in and around the impact region for the infrastructure I care about?

- What are some statistics that are important to that infrastructure?

- Is it bad enough that I need to run a detailed model to see what happens?

- Can I have a production quality map for my report or presentation?

- Can I send a link to anyone and have them see what I see?
  - Earthquake [example](#)
  - Hurricane EP/wind [example](#), surge [example](#)
  - National Level Exercise IND [example](#)

What about the customers?

- FASTMap is accessible on the web with a Sandia CryptoCard
- Our DHS customer (DHS/OCIA) uses FASTMap part of their crisis action response for maps and statistics
- Infrastructure data for that instantiation is from HSIP Gold and other Sandia-purchased data sources
- DHS is currently funding the incorporation of the Regional Economic Accounting (REAcct) economics model into FASTMap and the automated generation of telecommunications outage contours
- FASTMap is also available on the web over JWICS with MIDB data
- SHARC is used in support of the U.S. Nuclear Render Safe capability and outputs to FASTMap

Direct Linking of Models

- Models can write to a space that FASTMap can read in a format it can display (SHARC)

- Model algorithms can be implemented in FASTMap itself (REAcct, telecommunications outages)

- Can allow models to interact without major rework or changes in user interface

- Allows analysts and algorithms to work in the environment best suited for the problem

Questions?