

## Project 5: Risk Analysts' Workbench (Neches, Orosz)

RAW is a software platform that enables policy/decision-makers and risk analysts to share computing tools, models, data, analysis and results, and supports each in their unique roles and needs in risk-sensitive assessments and planning.

**Modeling Area:** Risk Assessment

**Case Studies Supported:** All

**Principal Investigator:** Robert Neches

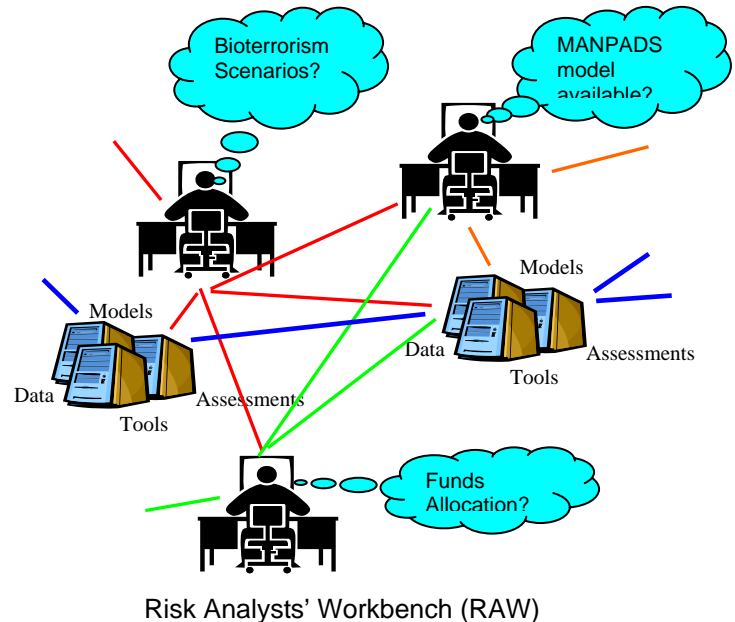
**Institution:** USC Information Sciences Institute

**Other Investigators:** Mike Orosz, Terry Benzel, Tatiana Kichkaylo, Jennifer Chen

### Brief Description:

The Risk Analysts' Workbench (RAW) is a software tool for policy/decision-makers and risk analysts, enabling synergies that help both more effectively perform their individual roles in assessing terrorism threats and evaluating strategies for countering those threats. Its coverage spans risk assessments and models, decision support tools, scenario and threat definitions, supporting data, and presentation and review tools. RAW is being developed to also

enable integration of different risk and consequence models in a common user and data set management interface. The current user interface allows creation and specification of new scenarios and models for analysis, management of existing scenarios, sharing of scenarios among multiple analysts, roll-up into composite analyses, and review of combined scenarios by policy developers and decision makers.



### Objectives:

- Integrate additional resources from CREATE, FAZD, and other DHS sponsored Centers of Excellence into the RAW framework
- Complete development of system administration/maintenance component
- Develop a Common Modeling Environment (CME) prototype. CME facilitates both automated and human-mediated linking of models, data, and other resources found in RAW into one or more composite systems to answer risk-based questions
- Develop a web-based education interface to the technology

### Major Products and Customers:

- Prototype software that support analysis of MANPADS threats, selected bioterrorism threats, selected economic models, selected foreign animal disease threats, and selected border security threats
- Access via the DHS University Network of Centers web page
- Prototype software that includes a common-look-and-feel user interface that aids the risk analyst/researcher and policy/decision-makers
- RAW server containing CREATE, FAZD, and other DHS Center of Excellence produced models, software, data, and reports
- Initial Common Modeling Environment (CME) infrastructure and a proof-of-concept application
- Initial web-based education interface
- Complete RAW documentation, including Concept of Operations (ConOps), requirements specification, detailed design specifications, test manual and reports, and user's and system maintenance/admin manuals

The intended customers include the following:

- CREATE, FAZD and other Centers of Excellence researchers
- State and local government decision-makers
- DHS researchers and decision-makers

**Interfaces to other CREATE Projects:**

RAW integrates tools, data, and assessments from many sources, including the MANPADS case study and case studies from the bioterrorism and border security projects, and subcontractors

**Interfaces to non-CREATE Projects:**

RAW includes tools, data, and risk/threat assessments from several case studies from the DHS sponsored National Center of Foreign Animal and Zoonotic Diseases Defense (FAZD) center at Texas A&M, and will be extended to other Centers

**Technical Approach:**

1. Update design and software based on user feedback
  - a. Review feedback from user community
  - b. Update software system design
  - c. Update software based on user feedback
2. Develop initial Common Modeling Environment (CME) prototype
  - a. Develop detailed CME software system design
  - b. Develop database server
    - i. Initial server execution support
  - c. Develop example application based on a CREATE scenario
  - d. Demonstration – collect user feedback
3. Develop release 2
  - a. Extend server capabilities at ISI to support additional case studies, models, tools, data, and supporting documentation
  - b. Extend common-look-and-feel user interface based on user community feedback
  - c. Integrate into RAW models, tools, data, and supporting documentation from bioterrorism and/or border security case studies
  - d. Integrate into RAW models, tools, data, and supporting documentation from other DHS-sponsored Centers of Excellence
4. Develop initial education support module
  - a. Develop system requirements
  - b. Update RAW design to support new requirements
  - c. Develop and test initial education module
    - i. Internal CREATE testing (alpha testing)
    - ii. USC classroom testing (beta testing)
  - d. Insert into classroom environment
    - i. Additional USC courses
    - ii. CMU courses

**Major Milestones and Dates:**

1. RAW Release 2 (improved administration interface) – December/January 2007
2. Education module (beta release and Release 2.1) – January 2007
3. Initial CME description, including description of proof-of-concept application– Feb 2007
4. Education module (production Release 2.2) – March 2007
5. CME detailed software design – March/April 2007
6. Initial CME prototype (example application, Release 3.0) – August 2007
7. Updated documentation – September 2007