

Project Sponsored by  
the United States Department of Homeland  
Security (DHS)  
Countering Weapons of Mass Destruction  
Office (CWMD)

Hosted by  
the Cross-Border Threat Screening and  
Supply Chain Defense Center (CBTS)  
a DHS Center of Excellence  
at the Texas A&M University System



R7 CBTS-TAMU  
DHS-CWMD  
Objectives



Data-Lake System

Generate a risk-guided platform to provide access to datasets, predictive models and experts' opinions to produce



Risk Assessment Model

Formulate a comprehensive risk assessment model, mapping qualitatively participating processes needed to simulate



Risk Mitigating  
Strategies

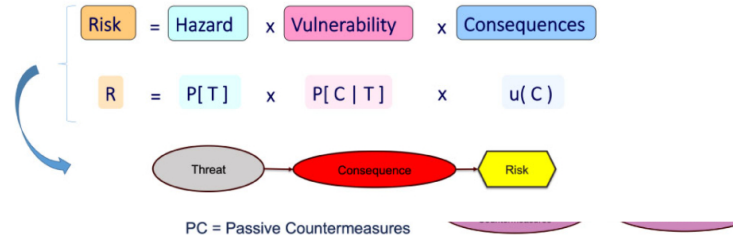
Generate risk-mitigating strategies based on resiliency

experts' opinions, to provide evidence-based support on the causes and effects posed by COVID19 on the U.S. trade supply chain infrastructure

procedures needed to estimate 'prognosis and diagnosis scenarios' of social, economic and environmental impacts posed by COVID19 on the U.S. trade supply chain infrastructure

and sustainability supported by evidence collection and the associate risk assessment model, to address causes and effects posed by COVID19 on the U.S. trade supply chain infrastructure

### Bayesian Risk Decision-Making Framework



### R-7 CBTS-TAMU DHS-CWMD Milestones



### Data-Lake System

- One-on-one interactions with experts representing each component of the trade supply chain infrastructure.
- Generation of the platform for the curation and sharing of the sources of information collected.
  - Identify available evidence and gaps of evidence from COVID19 risk model: databases, predictive models, and experts and stakeholders
  - Set mechanisms for collection of available evidence (at DHS, TAMU, and at all other organizations supporting CBTS projects)
  - Collection and characterization of available evidence: databases, predictive models, experts and stakeholders
  - Strategy for collection of non-available evidence: databases, predictive models, experts and stakeholders

### Development of Risk Assessment Model

- One-on-one interactions with experts representing each component of the trade supply chain infrastructure.
- Formulation of risk assessment model using Bayesian Networks.



### Risk Mitigating Strategies

- Education of DHS and participating organizations on the risk-guided platform and the risk assessment model, which will serve as the basis to develop risk mitigating strategies.
- Development of a set of qualitative risk mitigating strategies by all supporting organizations of the project, to be added to the Risk Assessment Model as risk countermeasures. Producing as a result, a Risk Assessment and Management Bayesian Network including the proposed mitigating strategies.





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