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Final Report

Project Title:

Securing Global Trade through Secure Freight Transportation

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Description of problem: Given the increased probability of disruptions to global supply chains, and the significant impact these have on national and global economies, the problem is how to secure global trade.

Approach: The proposed method of addressing this is to first understand the vulnerabilities and the propose methods for mitigating the vulnerabilities existing in global freight transportation systems and processes. Overall this was done through a portfolio of research initiatives (including a thesis project focusing on 100% Cargo Scanning requirement, development of a risk management maturity model, assessment of technology that could support a global supply chain chain of custody, assessment of vulnerability through field visits and survey, and development of relevant frameworks).

Methodology: Several literature reviews were conducted, various sets of semi-structured interviews conducted, a preliminary throughput model was developed and the various insights were synthesized into relevant frameworks. Additionally, the funding for this work has also been used to support a survey focused on maritime transportation system security and resilience (although this work is still in process as of this date).

Findings: The concept of a global trade chain-of-custody has been developed for the pharmaceutical industry supported by RFID technology, although the technology has not achieved suitable reliability or functionality to warrant universal adoption. Beyond preliminary literature review and assessment, this study therefore did not focus efforts on further developing these concepts. Instead, the effort was refocused on developing the concepts of secure and resilient global supply chains. This included a focused study on resilient freight movements within the US, and the development of a risk management maturity model framework. A more extensive final report can be found in the collection of papers that were produced and/or supported by the Principle Investigator as follows:

"Development of a Statewide Freight System Resiliency Plan"
Project Report, July 23, 2008 by Dr. Chris Caplice and James B. Rice, Jr.

"100% Container Scanning: Security Policy Implications for Global Supply Chains" MIT Thesis by Allison C. Bennett and Yi Zhuan Chin, June 2008;
Thesis Advisor – James B. Rice, Jr.

"How Risk Management Can Secure Your Business" by James B. Rice, Jr., MIT and Bill Tenney, Target Corporation, published in *Supply Chain Strategy*, June 2007

"Rethinking Security" by James B. Rice, Jr., published in *Logistics Management*, May 2007

"Give Your Transborder Supply Chain a Strategic Lift" by James B. Rice, Jr., MIT and Philip Spayd, Global Trade Systems, published in *Supply Chain Strategy*, February 2007

"Assessing Cargo Supply Risk" by Dan Purtell, First Advantage Corp. and James B. Rice, Jr., MIT, in *Security Management* (Summer 2006 and online)