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Challenges in Infrastructure Risk Management Analysis in a Distributed Risk Management Environment

Military Operations Research Society

Nexus of National Security and Homeland Security

Working Group 4, Session 1



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Agenda

- Distributed Risk Management Environment
- Security vs. Resilience
- Risk Avoidance vs. Risk Tolerance
- Way Ahead



Distributed Risk Management Environment

The homeland security “enterprise” refers to the collective efforts and shared responsibilities of Federal, State, local, tribal, territorial, nongovernmental, and private-sector partners — as well as individuals, families, and communities — to maintain critical homeland security capabilities. It connotes a broad-based community with a common interest in the safety and well-being of America and American society.

Quadrennial Homeland Security Review Report, February 2010



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Distributed Risk Management Environment (Cont.)

- There is an expectation of local, high-fidelity coverage throughout the Nation
- Much of the infrastructure and data are privately owned
- The NIPP taxonomy for administration does not correlate well with physical “systems of systems”
- The lack of consistency among systems increases the challenge in performing cross-sector analysis
- The network topology of the systems does not correlate with political boundaries



Security vs. Resilience

- National Preparedness Goal Balances Security vs. Resilience
 - Resilience is a buzz word on the Hill
 - Security
 - Something that secures: protection
 - Measures taken to guard against espionage or sabotage, crime, attack, or escape
- Merriam-Webster



Security vs. Resilience (Cont.)

- Resilience

- Ability of systems, infrastructures, government, business, and citizenry to resist, absorb, recover from, or adapt to an adverse occurrence that may cause harm, destruction, or loss of national significance
- Capacity of an organization to recognize threats and hazards and make adjustments that will improve future protection efforts and risk reduction measures

– DHS Risk Lexicon



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Security vs. Resilience (Cont.)

Infrastructure Risk Management Continues to Mature

- Started with asset protection from terrorists: gates, guards, guns
 - Police/Security function
- Next evolution was understanding dependency on inputs to the asset
 - Police/Security Plus function
- Current evolution was understanding a nodes role within a system/network
 - Operations Analyst/Systems Engineer/Logistician function
- Programs stuck in Police/Security mode will not evolve



Risk Tolerance

- **Risk Avoidance:** strategies or measures taken that effectively remove exposure to a risk
- **Risk Control:** deliberate action taken to reduce the potential for harm or maintain it at an **acceptable** level
- **Risk Tolerance:** degree to which an entity, asset, system, network, or geographic area is willing to accept risk



Way Ahead

- Continue to collaborate and coordinate
- Look within organizations for systems analysis expertise
- Continue to work with private sector partners





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