

# Research Opportunity - DoD's Role in Homeland Security



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- **Example of Homeland Security/Homeland Defense in a recent Joint war game experiment.**
- **Challenge for statisticians and researchers in conducting Homeland Security oriented experiments and analyses.**

# Role of Federal Government in Homeland Security

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- **Homeland Security is best accomplished by building on state and local capabilities.**
- **The role of the Federal Government in Homeland Security is to enhance the capabilities at the lowest level of government.**
- **The Federal Government's Department of Homeland Security (DHS) is to:**
  - **Consolidate Federal activity.**
  - **Integrate national preparedness and response.**
- **The DoD established US Northern Command to consolidate under a single unified command homeland defense and civil support missions that were previously executed by other military organizations, specifically: to conduct operations to deter, prevent, and defeat threats and aggression aimed at the United States, its territories, and interests within the assigned area of responsibility; and as directed by the President or Secretary of Defense, provide military assistance to civil authorities including consequence management operations.**
- **US Northern Command plans, organizes, and executes homeland defense and civil support missions. The command will be assigned forces whenever necessary to execute missions as ordered by the President.**

# Decision Flow - Homeland Security

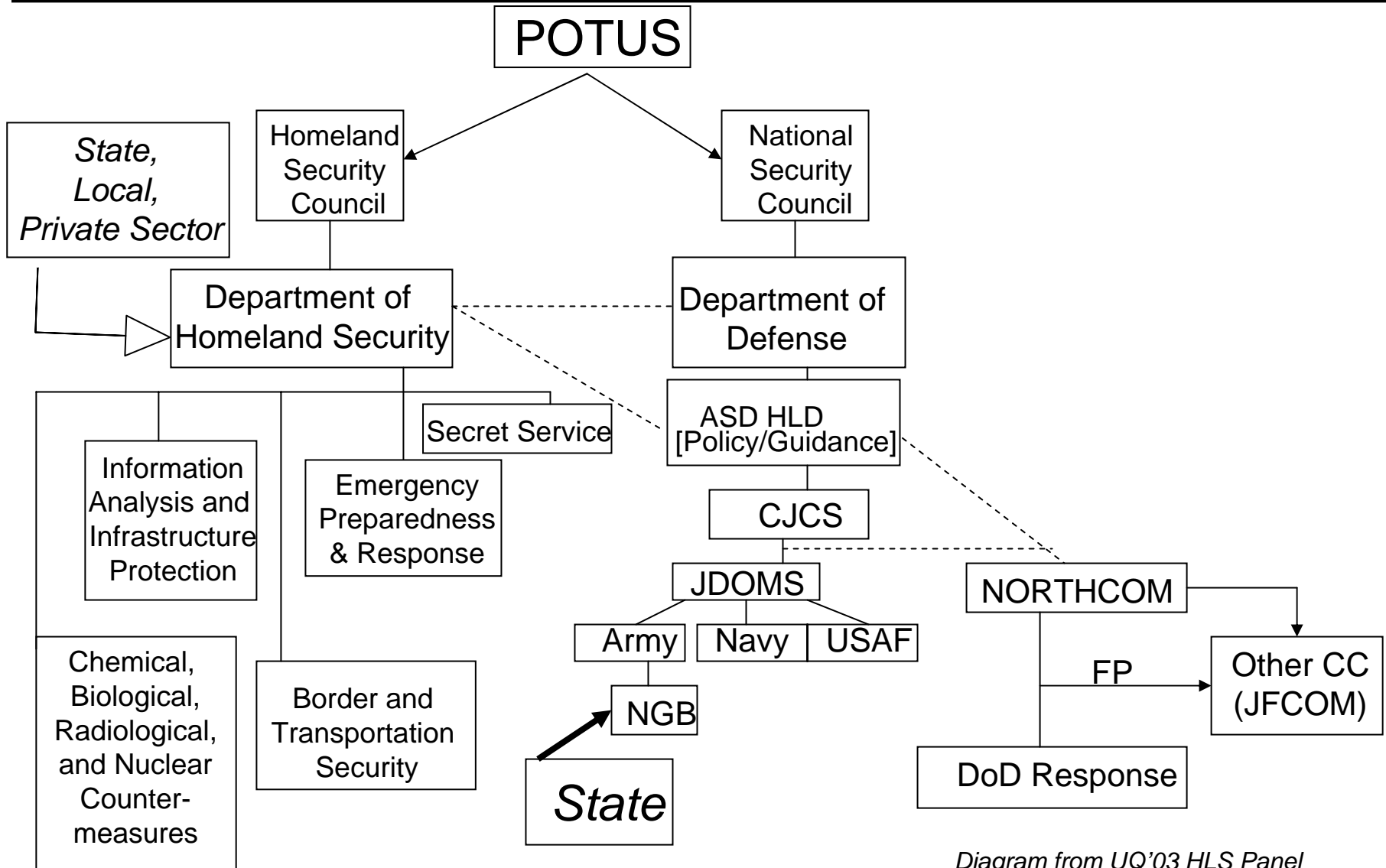


Diagram from UQ'03 HLS Panel  
Senior Mentor

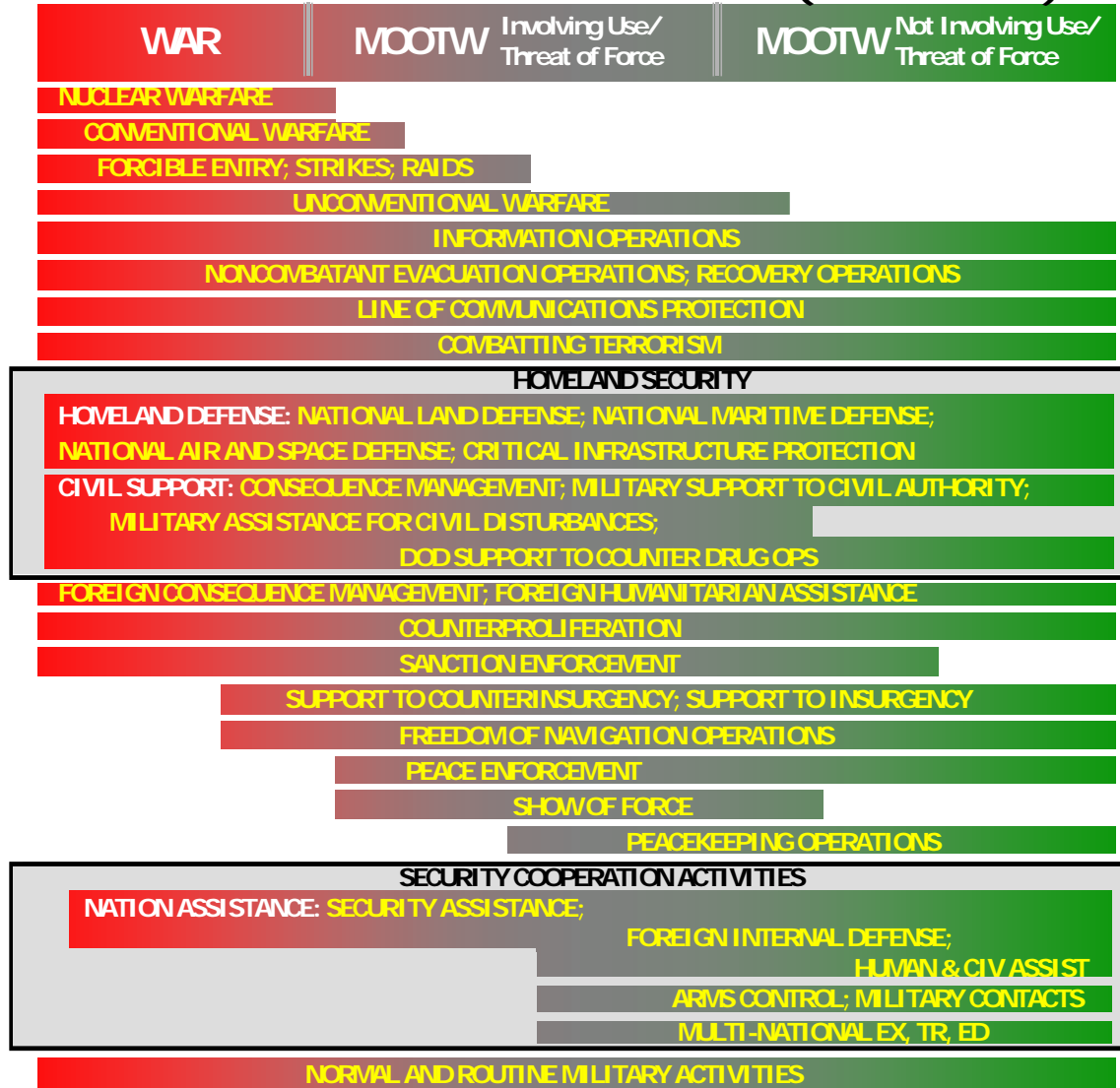
# Responsibilities of DoD in HLS

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- **DoD is responsible for:**
  - Defense of the US.
  - DoD capability support to the civilian authorities.
- **Area of responsibility is US, Canada, Mexico and the land, sea, and aerospace approaches. NORTHCOM and PACOM are to oversee:**
  - Military support to Domestic Consequence Management.
  - Support and protection of the Critical Defense Infrastructure in the Homeland.
  - Support Civilian Support operations (an Army core competency) (Army Modernization Plan 2003).
- **Homeland Security is best accomplished by building on state and local capability.**
  - Training and equipping state National Guards and militia.
  - Developing, coordinating, and cooperating with the First Responder community.

# Defining the Range of Military Operations

## Interim RANGE OF MILITARY OPERATIONS (JROCM080-02)



Homeland Defense

Civil Support

JOpsC  
Version 4.0  
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# Responsibilities of DoD in HLS (2)

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- **In the event of national need, DoD will have a role in three broad circumstances:**
  - **Limited in scope/temporary in time, requiring DoD to assist/train state and local actors (DoD supports):**
    - Special events.
    - Training First Responders.
    - Support to law enforcement.
  - **Emergency, requiring DoD to augment capabilities of civil authorities (DoD Supports):**
    - Post-event management.
    - Logistics, supply, mobility.
  - **Extraordinary, requiring DoD unique capabilities (DoD leads):**
    - Combat air patrols (CAP) around high-value sites (NYC, DC, etc.).
    - Explosive ordnance detonation (EOD).
    - Interagency augmentation using combat forces.

# **Analysis of DoD Support to HLS in Temporary and Limited Circumstances**

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- **Temporary in time/limited in scope, requiring DoD to assist/train state and local actors:**
  - **Special events**
    - Represent venues such as the Boy Scout National Jamboree or the Super Bowl and use simulation to develop plans, and contingencies to enhance control and mitigate manmade or natural disaster.
  - **Training First Responders**
    - Use simulation tools to develop training scenarios based on operational plans and contingencies.
    - Simulations like the Emergency Preparedness Incident Command Simulation (EPiCS)\*\* to train the command element of First Responders and their interface to other agencies.
  - **Support to law enforcement**
    - Assist the Border Patrol and area law enforcement to plan sensor arrays.
    - Assist law enforcement in developing contingency plans and asset use plans through the use of models and simulation. (As an example, a version of SimCity suitable for realistic plans and contingency development sufficient in detail to represent applicable C4ISR.)

\*\*EPiCS is an HLS command and control rehearsal model developed and maintained by TRAC-WSMR.  
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# **Analysis of DoD Support in HLS –**

## ***Emergency Circumstances and Situations Analyses***

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- **Emergency situations, requiring DoD to augment capabilities of civil authorities, include:**
  - **Post-event management**
    - **Effectiveness of means and methods to control and isolate the forward range boundaries of effect of WMD/WME.**
    - **Identify means to open and secure APOD/SPOD and protect the borders and littorals from insurgents.**
  - **Logistics, supply, mobility**
    - **What are the underlying assumptions in place regarding the availability of transportation and stores of emergency medical supplies like vaccines and antiagents?**
    - **What protection means are required to secure lines of communication within the affected site?**
    - **What effectiveness is provided by available complementary capabilities provided by private organizations, other agencies, or other governments?**
  - **Support civilian support operations (an Army core competency (*Army Modernization Plan 2003*))**
    - **Military support to Domestic Consequence Management.**
    - **Support and protection of the Critical Defense Infrastructure in the Homeland.**

# **Analysis of DoD Support in HLS –**

## ***Extraordinary Circumstances Planning, Experimentation, and Analysis***

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- **Extraordinary, requiring DoD unique capabilities – use of combat forces within the US:**
  - **Combat Air Patrols**
    - Evaluation of materiel, sensor, and communication systems for target detection, control, and reduction.
  - **Explosive ordnance detonation (EOD)**
    - Projection of areas of influence, areas of effect.
    - Evaluation of contingency plans based on risk assessment of potential target areas, and means and methods of risk mitigation.
  - **Interagency augmentation and protection using combat troops**
    - Augmentation of US Customs Service, Border Patrol, and Immigration and Naturalization Service.
    - Evaluation of security vulnerabilities for sites of interest such as military bases, ports, airports, lines of communication, embassies, and chemical and nuclear storage facilities.
    - Evaluation of the effectiveness of sensors, lethal and less-than-lethal weapons.
    - Evaluation of joint force contribution for desired effect.
    - DoD and interagency force projection to detect, identify, preclude, preempt, or prevent a terrorist attack on the US, its territories or allies.

# Introduction to HLS Strategy

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- **The discussion above was the roles and expectations of DoD in Homeland Security/Homeland Defense or more generally, Homeland Operations.**
- **Next, the three phases for which a strategy must be planned:**
  - **Prevention**
  - **Immediate Response**
  - **Reaction and Recovery**

# Strategy Planning Phase -- Prevent Terrorism

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## Pre-attack, anticipatory response

- **Preemption**
  - **Strike at terrorist operations, infrastructure, motivations.**
  - **“Follow the money.”**
- **Protection**
  - **Physical security to harden targets, limit damage.**
- **Preparation**
  - **Blunt psychological impact.**
- **Prevention**
  - **Even one success will save lives and property.**

# Strategy Planning Phase -- Prevent Terrorism

*(Continued)*

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# America's Critical Infrastructure Sectors

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- **Critical Sectors**

- **Agriculture**
- **Food**
- **Water**
- **Public Health**
- **Emergency Services**
- **Government**
- **Defense Industrial Base**
- **Information and Telecommunication**
- **Energy**
- **Transportation**
- **Banking and Finance**
- **Chemical and Shipping**

- **Department of Homeland Security is working with federal departments and agencies and regional, state, and local agencies to develop national infrastructure protection plans. Modeling and simulation tools will be developed to understand how the complex and connected infrastructure behaves.**

# Strategic Response – Attack Executed

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## Trans-Attack – Immediate, preplanned response

### – Crisis Management:

- End terrorist attack. End further damage.

### – Consequence Management:

- Rescue survivors, limit damage.
- Coordinate First Responders.
- Initiate recovery and reconstitution.
- Defend domestic and defense industrial base.
- Defend National Security infrastructure.
- Defend, support, and restore civil operational structure.

### – Mitigation – turn from defense to offense via planned response.

# Strategic Response – Attack Executed

*(Continued)*

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# Strategic Response -- Post Incident

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## Post Attack – Reactions and Recovery -- Tempered by laws and society

- Threat interdiction:
  - Defeat terrorist infrastructure.
  - Again, “Follow the money.”
- Attribution.
- Recovery from natural and man-made disasters.
- Free-flow of Information.
- Respond with civil support:
  - Protect
  - Recover
  - Calm the public and restore confidence
  - Re-energize
- Form the basis of long-term strategy:
  - Thwart terrorists
  - Prepare for natural disasters

# Strategic Response -- Post Incident

*(Continued)*

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# 2003 Army/JFCOM HLS War Game Experiment Guidance

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- **Collaborative Effort**
  - Improve learning potential.
  - Create venue for innovation.
  - Examine Joint operational concept.
  - Stress strategic capabilities.
- **Coordinated Objectives and Research Issues using 2003 Army Objectives and 2003 JFCOM Objectives**
- **Common Global Scenario**
  - Scenario linked via economic and social-political interests, energy concerns, international terrorism, and international crime.
- **Game Inputs**
  - Thinking intelligent Threat in future strategic and operational environment.
  - Joint, interagency, coalition players.
  - National Security and National Military Strategies.
  - Coordinated Joint campaign plans.
- **Outcomes**
  - Strategic messages disseminated through Army/JFCOM produced insight pamphlets:
    - Wargame Insight Briefings
    - Integrated Analysis Reports
    - Issue Focused Articles

# HLS War Game Purpose and Scenario

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- **2003 Experimental Purpose:** In a Seminar War Game setting, explore the capabilities required for an integrated and comprehensive Homeland Security effort using local, state, regional, national, joint, and service competencies while conducting a global campaign.
- **It is 2015. Assume:**
  1. **Transnational crime funding and terrorist interests continue to support attacks on US interests.**
  2. **No major change in the nature of the nation state system has taken place. However, non-state actors are increasing in power.**
  3. **Alliances and coalitions are expected to be more complex and dynamic.**
  4. **Despite major increases in economic interdependency and the impact of information technology, there has been no basic change in the nature of the global economic system.**
  5. **No major changes have taken place in preexisting international treaties, agreements, and organizations, except as were specifically stated in the game scenario and materials provide during the game's conduct.**
  6. **Local, state, regional, and US Government agencies and organizations continue to exist in the game's timeframe, and are structured in accordance to Presidential directives.**

# War Game Events

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- **Prepare/Defend**

- Intelligence confirms specific threats to the US requiring active protection.
- Special purpose forces intend to attack seaports and airports to disrupt US force deployment.
- Terrorist attacks against shopping malls, amusement parks, and special events are scheduled to coincide.
- Attacks against public utilities are also planned.

- **Response to Hostile Event**

- An attack has been conducted against a port:
  - Explosion aboard a merchant vessel creates immediate casualties and potential for many more.
  - Port as well as airport operations are suspended.
- State, regional, and DoD assets are required to provide coordinated and synchronized measures to restore the port commercial and operational area.

- **Respond to Non-hostile Event**

- A major earthquake occurs along the New Madrid fault (Mississippi River) causing extensive damage from St. Louis to Baton Rouge.
- State, regional, and DoD assets are required to take immediate steps to provide coordinated and synchronized measures to save lives, prevent further property damage, reduce suffering, and restore the viability throughout the Mississippi River basin.

# Results: Concern Areas

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- **Changing Threat Perspectives**
  - **Concern for the Homeland because of the Threat preemptive strikes and reach.**
  - **Countering area denial (Peacetime Theater Engagement) may prompt Threat action.**
  - **Concern for the Homeland because of the Threat cyber attacks and other activities.**
  - **Concern for the Homeland because of the Threat affecting airports and seaports as well as the physical safety of the US population.**
    - **Secure APOE/SPOE operations are required for force deployment.**
    - **Population safety concerns may cause limitations in plans for high demand/low density assets.**

# Results: Operational Concerns

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- **Integrated Global Operations – Regional issues are global:**
  - A global view to the challenges of deployment, employment, and sustainment (DES) is required, of communicating coherent messages through the media, and of public perceptions.
- **Concern for the state of the security of the homeland communication assets.**
  - Concern for the state of the security of the homeland because that is where the APOE/SPOE.
  - Concern for the sustainment base in the defense industrial operations.
- **Concern because there may be a change in public and political intent in support of a war effort.**
  - The Threat may use actual or pseudo attacks in an attempt to change public support, or impart heightened concern due to the use of ports as DES gateways.
  - Public concern could slow port transiting, or even require ports to be operated with federal support.

# Challenge for Statisticians and Analysts

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- **The role required of DoD in HLS will serve as a catalyst for the transformation of the Army and DoD.**
  - **How do the requirements for Homeland Defense parallel those projected for the Future Force of the Army?**
  - **How to determine the importance and utility of expanded situational awareness.**
  - **How to model and evaluate efficient, networked systems that can immediately and accurately direct forces to perform critical missions.**
- **The community of applied statisticians, which offer capabilities in experimental design, data collection, analysis and interpretation, and modeling and simulation, can be a critical partner in accomplishing these and the following tasks:**

# Statisticians Role in DoD's HLS Experimentation

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- **Plan, coordinate, and execute experiments:**
  - Support procurement decisions.
  - Evaluate tactics, techniques, procedures, and concepts of operations.
  - Evaluate new training processes and/or devices.
- **Participate in experiments, “wargames,” and exercises to enhance the value of the experiment by providing techniques and procedures that result in valid experimental insights and conclusions.**
- **Assist in design, execution, and analysis of experiments to evaluate:**
  - Game theoretic risk assessment.
  - Screening criteria.
  - New equipment procedures.
  - Crisis management techniques, procedures, and approaches.
  - Potential value of specific security, counterterrorism, or crisis management activities.
- **Develop models and simulations:**
  - Develop the means to validly represent concepts, equipment, and behaviors in a model or simulation.
  - Implement those representations in high resolution computer simulations that can be used for quantitative analysis, as a training driver, or to support experimentation.
  - Develop both training and analytic scenarios.
- **Serve as the HLS experimental designers, war gamers, survey/test developers, data collectors, and analysts.**

# Studies & Analyses for DoD HLS Operations

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- **Determine the planning and operational requirements to support domestic disaster relief, antiterrorism, and consequence management operations.**
  - **In cooperation with HLD planners, conduct analysis of disaster relief, antiterrorism, and consequence management plans to flesh out plan details, validate the overall COA, and enhance the quality of those plans through operational plan (OPLAN) analysis.**
  - **Evaluate cost of alternate approaches to HLS.**
  - **Identify the need for materiel solutions necessary to accomplish the mission (analysis of requirements (AoR)).**
  - **Support the selection of optimum materiel solutions through the conduct of analysis of alternatives (AoA)).**
  - **Course of action and tactics, techniques, and procedures (COA and TTPs):**
    - **Assess the cost effectiveness of local or regional Homeland Security efforts against likely threats to those areas by conducting economic risk analysis.**
    - **Determine the cost impact resulting from heightened security measures (cost analysis).**
    - **Determine the importance and utility of expanded situational awareness.**
    - **Design efficient, networked systems that can immediately and accurately direct forces to perform critical missions.**

# Studies & Analyses for DoD HLS Training Development

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- **Determine the training and exercise requirements to support domestic disaster relief, antiterrorism, and consequence management operations.**
  - **In cooperation with HLD planners, develop training and exercise scenarios of disaster relief, antiterrorism, and consequence management plan. Exercise the plan details, validate the overall COA and consequence anticipation.**
  - **Evaluate training system emplaced to train new HLS systems and/or process.**
  - **Evaluate cost of alternate approaches to HLS training and exercise. For example, the use of distributed simulation with a mix of human and virtual entities.**
  - **Develop the means to exercise developed COAs and TTPs:**
    - **Assess the effectiveness of training approaches, training events, and new equipment training through training impact analysis (training analysis).**
    - **Implement the representations of expanded situational awareness and networked systems.**

# Questions?

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