

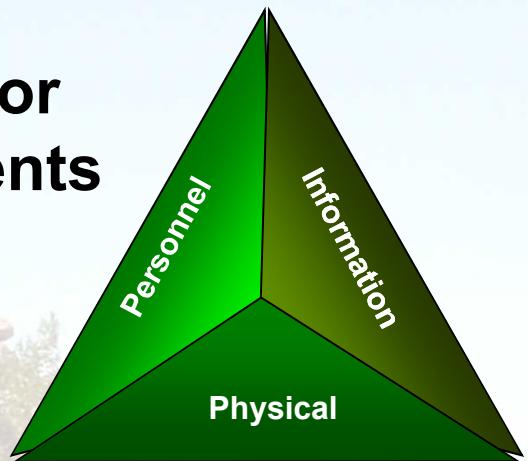


## *Managing Security Risks at International Borders*

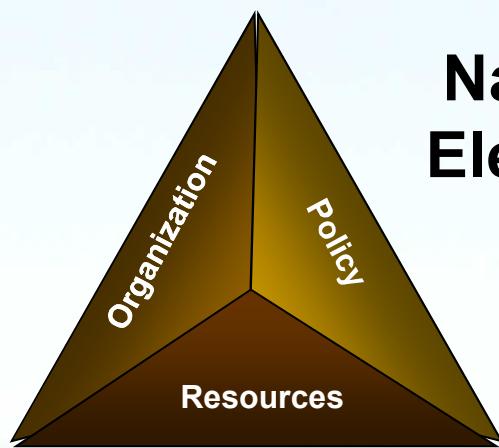
April 2008

# Border Management Systems Model

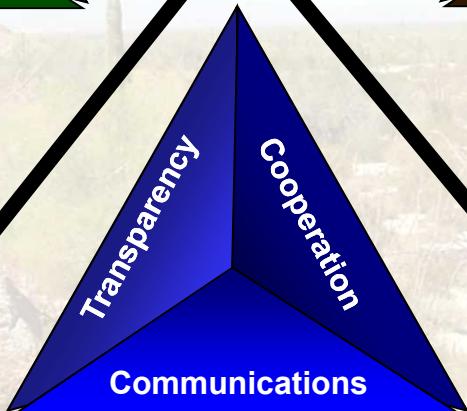
## Sector Elements



## National Elements



Points of Entry  
and areas in  
between in the  
domains of  
• Land  
• Water  
• Air



## Global/Regional Elements

# Challenges

## Human Challenges

- **Normal, Routine**
  - Tourists, Traders
  - Nomadic, Tribal, Cultural, Familial
- **Abnormal**
  - Refugees, Illegal Immigration
- **Criminal**
  - Smugglers, Traffickers
- **Malevolent**
  - Terrorists, Insurgents
- **Military**

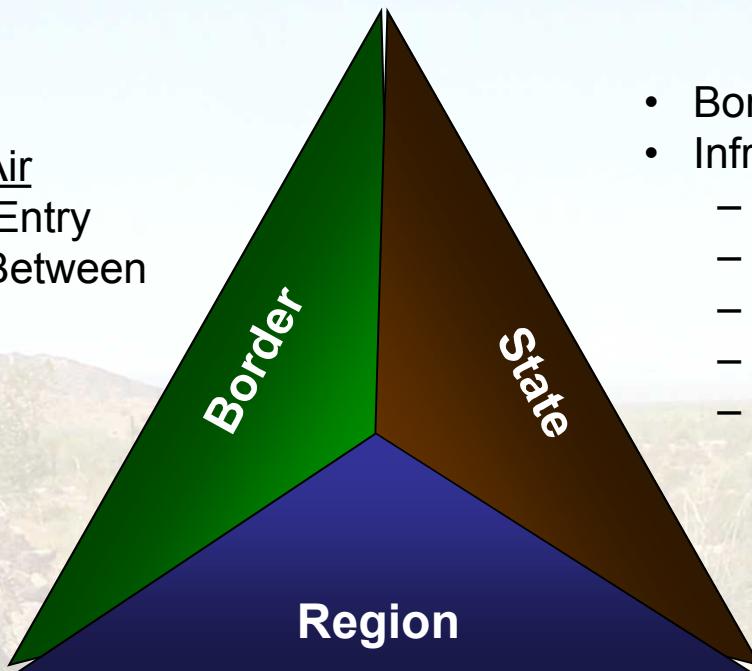
## Commodities of Concern

- **Weapons of Mass Destruction/Disruption**
- **Conventional Weapons**
- **Tariff/License Avoidance Products**  
(Cigarettes, Autos, Counterfeit Goods)
- **Contraband**  
(Drugs, Literature, Precious Gems/Metals, Stolen Goods)
- **Currency**

# Border Management Systems

## Land, Sea, Air

- Points of Entry
- Areas in Between



- Border Doctrine & Policies
- Infrastructures
  - Legal
  - Organizational
  - Personnel
  - Equipment
  - Technology

- Relationship with Neighbors
- International Agreements/Treaties

# Border Capabilities

## *Training Programs*

Physical  
Security

Cooperative  
Monitoring

Export Control

Border  
Systems

## *Assessment Tools & Tool Development*

Needs Assessment

Systems  
Analysis

## *Processes Methodologies*

Design  
Process

Threat  
Models

Event  
Analysis

Test & Evaluation

Outdoor Test Facility

## *Facilities*

Cooperative Monitoring Centers  
Albuquerque - Amman

Design and Performance Models

# BORDER MANAGEMENT SYSTEMS ANALYSIS



# Cooperative Monitoring Centers

## Albuquerque - Amman

Technology testing  
and demonstration



Technology integration  
and operation



Technology training  
courses and workshops



Visiting scholars  
program, research,  
and analysis

# Outdoor Test Facility

**Sensor, camera, and communications array at the SNL Outdoor Test Facility, Albuquerque**



## Objectives

- Evaluate, deploy, and demonstrate border security technologies and systems in realistic outdoor environments
- Enable the gathering of performance parameters for analysis
- Provide infrastructure for testing unattended ground sensors and cameras

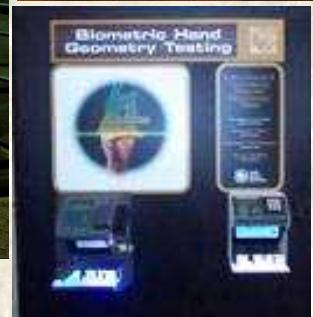
**DHS Test and Evaluation in the Field at the US-NM Southern Border**



***Border monitoring technologies evaluations***

# Other Sandia's Unique Facilities

- **Outdoor Sensor Test Range**
- **Robotics facilities**
- **TEAMS site**
- **Area III sensor test facility**
- **Explosive detection laboratories**
- **Delay laboratory**
- **Super computing facilities**
- **Biometrics laboratory**
- **Satellite Imagery and Analysis**
- **Outdoor Test Facility**



## International Border Management Systems Program

NNSA  
CBSP

DHS/CBP  
International  
Affairs and Trade  
Relations

NNSA  
Second Line  
of Defense

DOD Unified  
Commands  
CENTCOM/  
AFRICOM

DOS  
Anti-Terrorism  
Assistance

National  
Defense  
University

Regional  
Network of  
Strategic  
Studies Center

Cooperative  
Monitoring  
Centers

# Strategic Partnerships

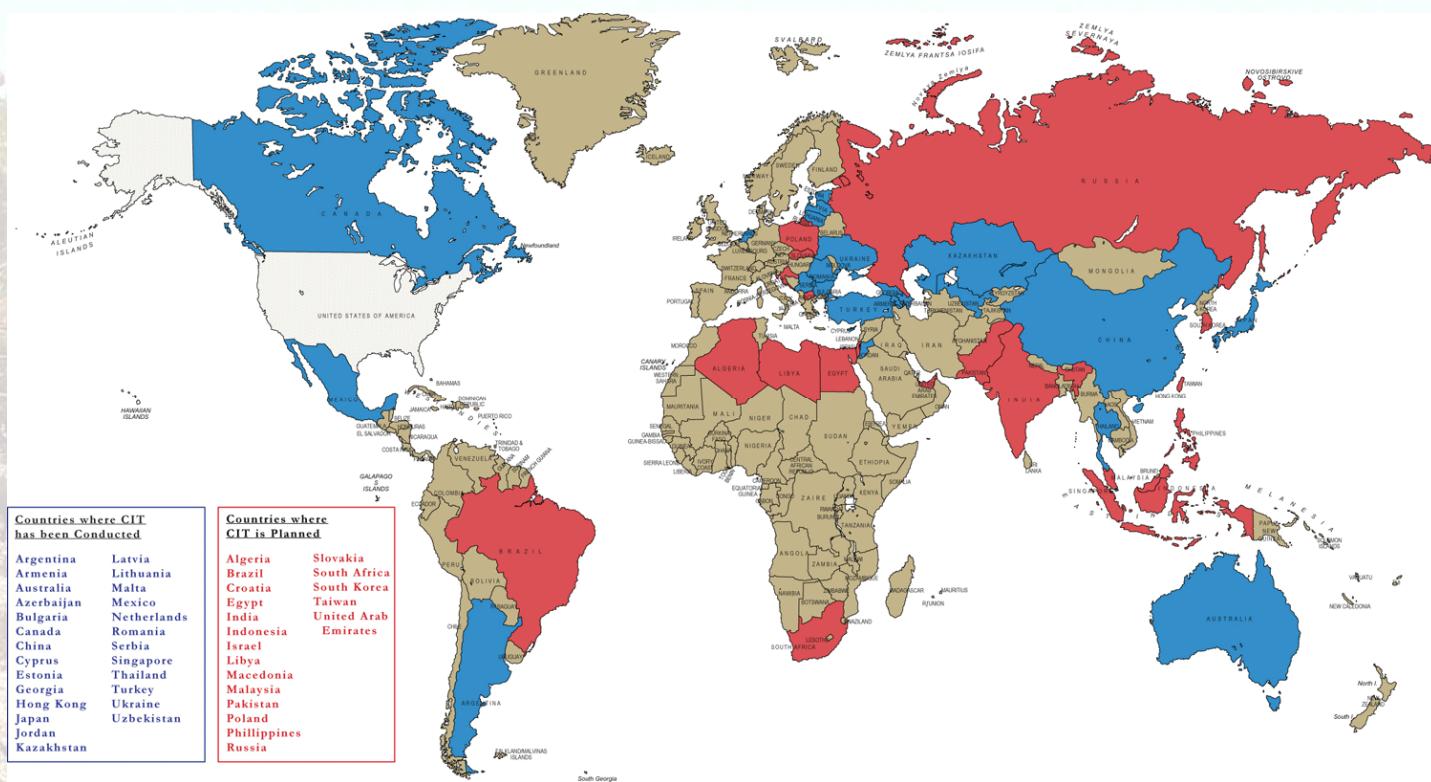
- **National Defense University**
  - Integration of concepts into curriculum
- **Regional Network of Strategic Studies Center**
  - US Co-chair for Border Security & WMD Working Group
- **Defense Threat Reduction Agency**
  - Possible Test & Evaluation of Sensor Technologies, Analyses Partner
- **International Boundaries Research Unit**
  - Curriculum Development/Implementation for Workshop on “Strategies and Tools for Effective Border Management”



INTERNATIONAL BORDER  
MANAGEMENT SYSTEMS

# Export Control

- International Nonproliferation Export Control Program (INECP)
  - Commodity Identification Training (CIT)
  - CIT and End Use/End User





INTERNATIONAL BORDER  
MANAGEMENT SYSTEMS

# SLD Program

## Objective

*Provide and install integrated, sustainable radiation detection systems at international crossing points and ports to minimize the risk of nuclear proliferation and terrorism*



Rail monitor



Vehicle and Pedestrian monitor



Vehicle monitors

SEP 30 2006



INTERNATIONAL BORDER  
MANAGEMENT SYSTEMS

# Megaports Equipment

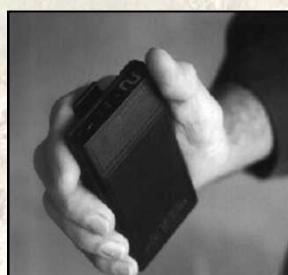
- Types of equipment provided:
  - Fixed
    - Vehicle monitors
    - Rail monitors
    - Advanced Spectroscopic Portals
  - Handheld
    - Personal Radiation Pagers (PRDs)
    - Radioisotopic Identifiers (RIIDs)
    - Radiation Survey Meters
  - Mobile Units
    - Straddle Carrier
    - Mobile Radiation Inspection Detectors Systems (MRIDS)



TSA Survey Meter



ORTEC Detective



Personal Radiation  
Detectors (pagers)



Thermo  
IdentifiFINDER



# International Seaport Security Initiatives

## DOE/NNSA Megaports Initiative

Scans as many  
containers as possible  
regardless of destination

Focus on Special Nuclear  
Material (SNM) or other  
radioactive material of  
proliferation concern

Data evaluated and maintained by  
host Government with specific  
modifications per MOU

## DHS Container Security Initiative (CSI)

Utilizes Automated Targeting  
System to identify high-risk  
shipments to the U.S.

Focus on Weapons of Mass  
Destruction (WMD) and/or  
implements of terror

Scanning is conducted by host  
nation and data on targeted  
containers is shared with CSI

## NNSA/DHS Secure Freight Initiative (SFI)

Migration of Megaports and CSI  
for scanning and identifying  
US-bound high-risk containers

Focus on WMD, implements of  
terror, and SNM or other  
radioactive material of proliferation  
concern

All data to host country; data on  
US-bound containers to host  
government, CSI, and to the US  
National Targeting Center

# Summary of Capabilities

- **Assessments, Analysis, and Implementation Guidance on Border Management Systems**
- **Export Control**
- **Field and Environmental Testing of Technologies**
- **Modeling and Simulation**
- **Visiting Scholars Program**

Ports of Entry and Open Area Surveillance for

- Land
- Water
- Air

Border Management Systems



# Contact Information

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Phone: 505-844-9320



# Other Regional Engagements

# Iraqi & Libyan Engagement

## Two Active Projects with Libya

- **Analytical Water Quality Lab**
- **Sea Water Desalination**

### Objective

To engage Libyan scientists in cooperative S&T projects that utilize Libyan expertise and address needs in Libya's S&T community



### Objective

Engage Iraqi scientists to develop S&T projects to rebuild key elements of the Iraqi infrastructure, and develop new business opportunities that capitalize on Iraqi expertise

- **Current Activities**
- **Funding small scale projects in energy, water, materials, public health, agriculture, radiation safety, and the environment**
- **Connecting Iraqi scientists and engineers to regional events and activities**
- **Training**
  - Emergency response
  - Environmental sampling and laboratory analysis
- **S&T Business development**
- **Ibn Sina silicones production**

# Confidence Building and Engagement in the Middle East

- **Middle East Policy Dialogue**
  - Participate in track II regional security meetings organized by UCLA Burkle Center
    - Lead a working group focused on technical cooperation
  - Conduct analytical studies
    - Iranian Constitution
    - Stability of the Iranian Regime
  
- **Radiation Measurements Cross Calibration (RMCC) Project**
  - Develop a network of scientists to address issues such as proliferation monitoring, environmental assessments, emergency response, and radioactive materials smuggling
  - Partnered with the IAEA, CTBTO, DOE/MAPEP
  - Worked with Kuwait Institute for Scientific Research (KISR) to conduct the first RMCC workshop
  - Worked with the Supreme Council for the Environment and Natural Reserves (SCENR) to conduct the second workshop held in Doha, Qatar
  - Worked with the Ministry of Regional Municipalities Environment & Water Resources (MRMER) to conduct the third workshop held in Muscat, Oman



First RMCC Workshop, Kuwait, October 2004



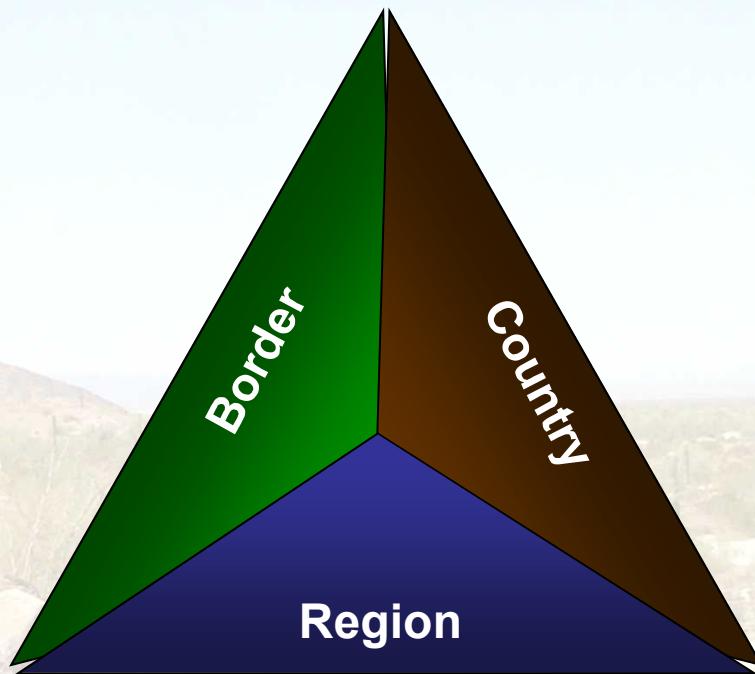
Second RMCC Workshop, Doha, Qatar,  
November 2005



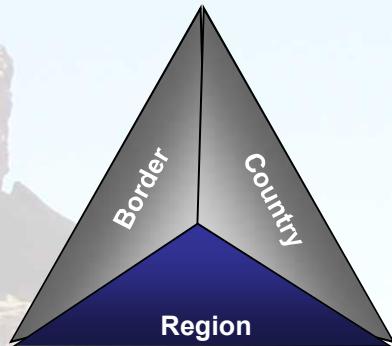
# Systems Model



# Border Management Systems

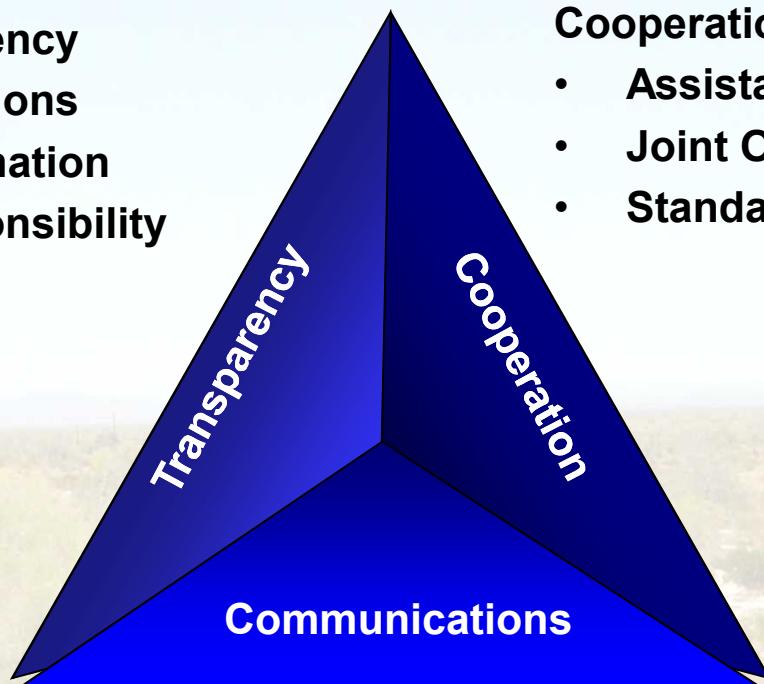


# Regional Layer



## Transparency

- Intentions
- Information
- Responsibility



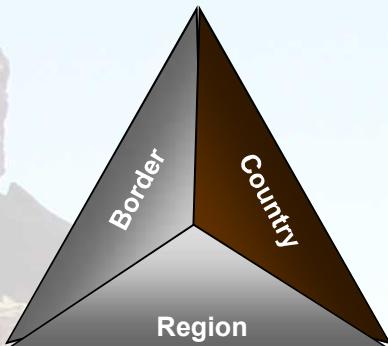
## Cooperation

- Assistance
- Joint Operations
- Standards

## Communications

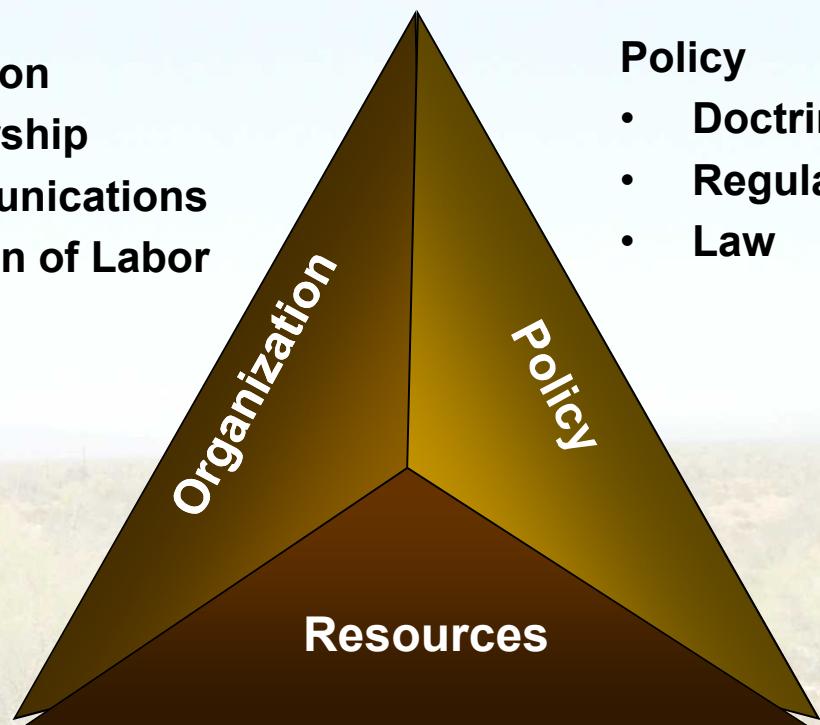
- Operational
- Bilateral
- Multilateral

# National Layer



## Organization

- Leadership
- Communications
- Division of Labor



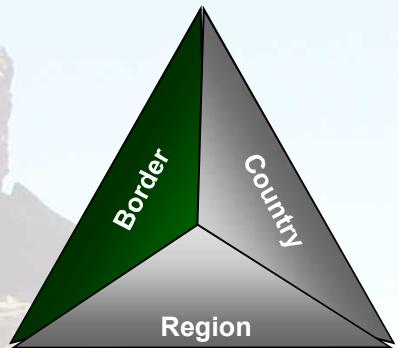
## Policy

- Doctrine
- Regulations
- Law

## Resources

- Financial
- Technical
- Human

# Border Layer

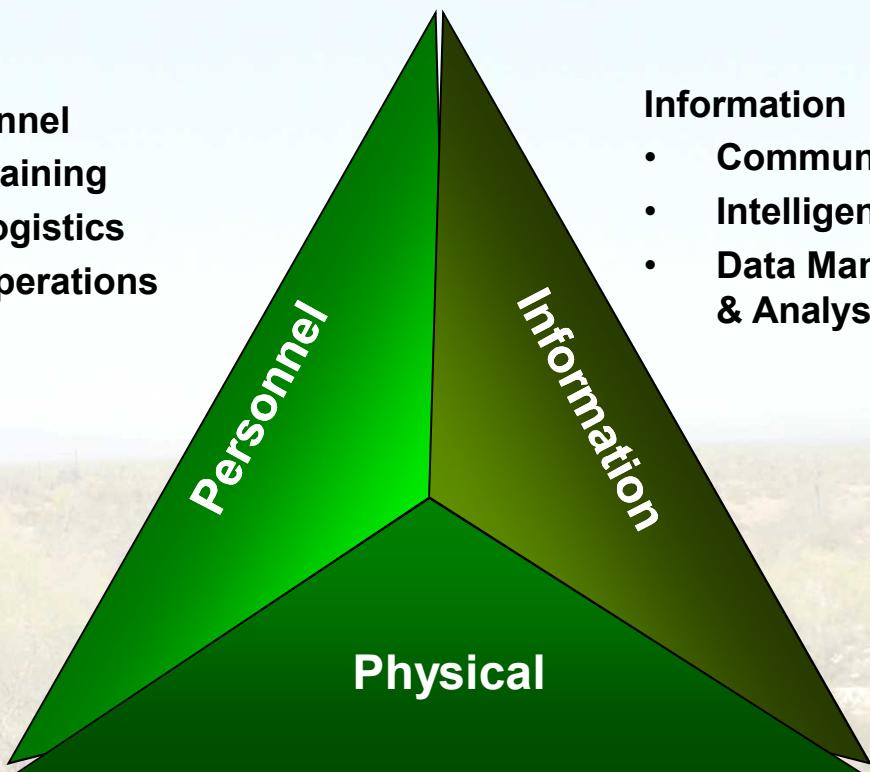


## Personnel

- Training
- Logistics
- Operations

## Information

- Communications
- Intelligence
- Data Management & Analysis



## Physical

- Infrastructure
- Equipment & Technology
- Logistics