SAND2015-7729PE

NNSA Nuclear Smuggling Detection and Deterrence Mobile Detection Systems | Program Overview

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September 2015 | Sandia National Laboratories Albuquerque, NM

National Nuclear Security Administration

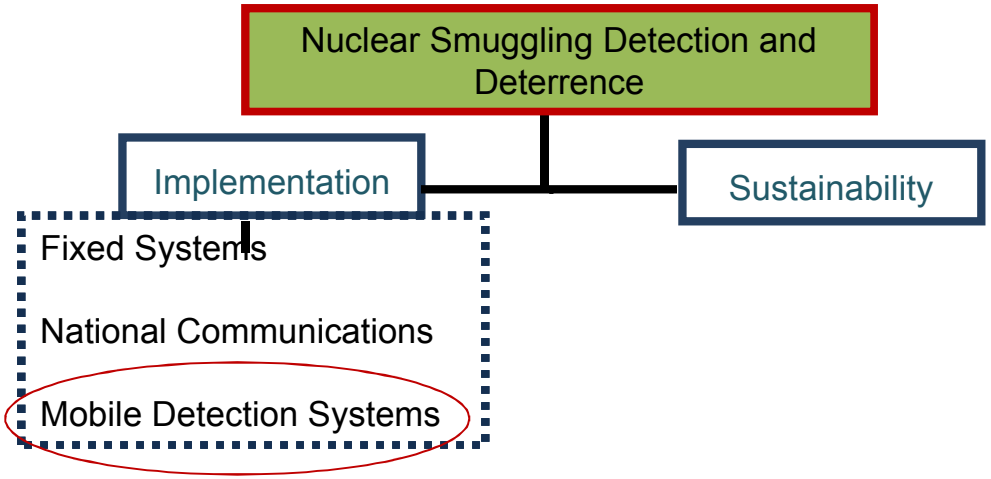
U.S. DEPARTMENT OF ENERGY

Program Mission and Strategy

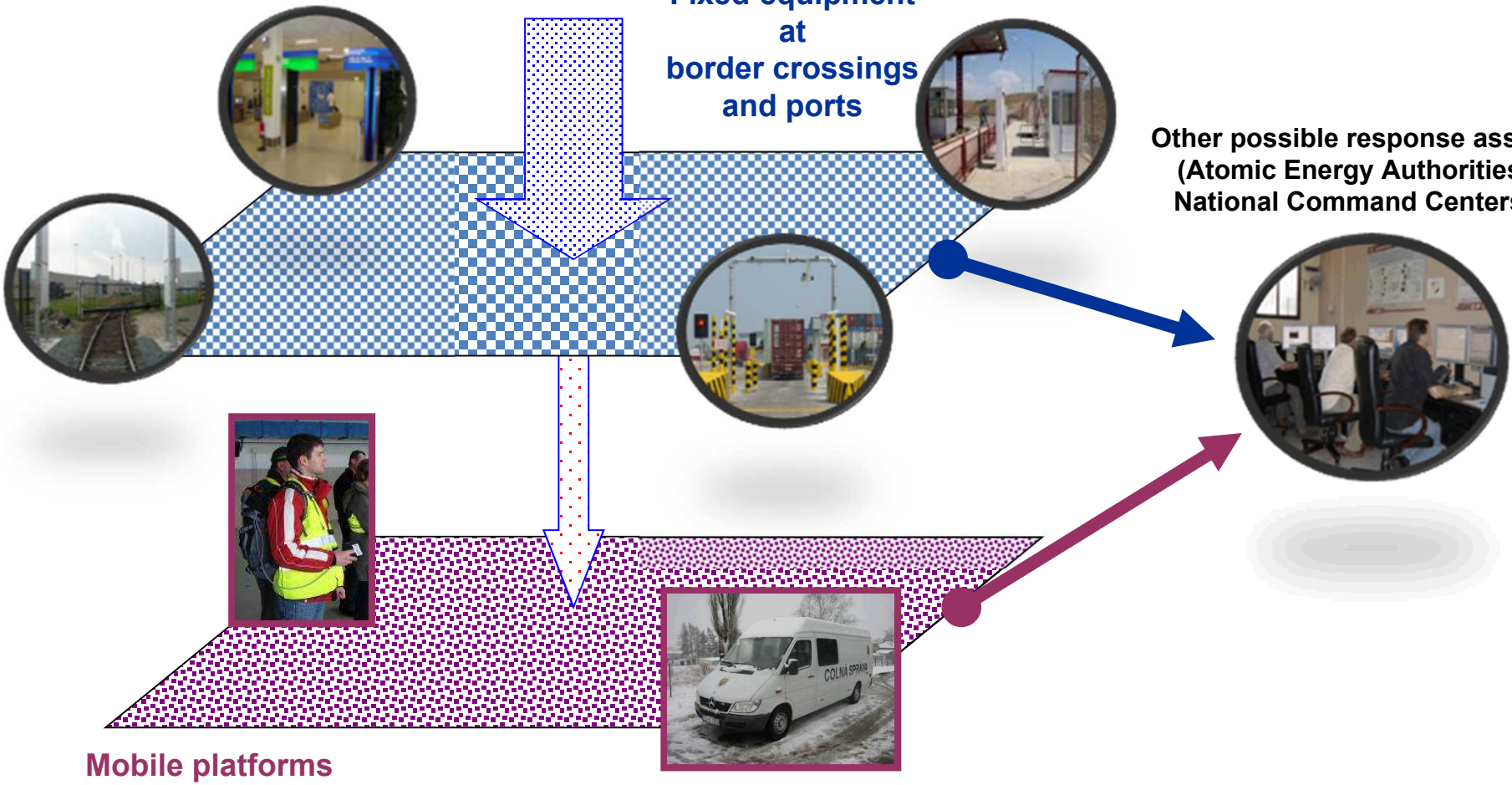
MISSION: Strengthen the capabilities of partner countries to deter, detect, and interdict illicit trafficking of special nuclear and other radioactive materials internally and at international border crossings including airports, seaports, and other points of entry/exit.

STRATEGY: Develop cooperative efforts to mitigate the risk of illicit trafficking through:

- Detection and identification of nuclear and other radioactive materials
- Development of response procedures and capabilities
- Deterrence of future trafficking in illicit nuclear and nuclear-related materials



Mobile platforms are critical aspect of layered, defense in depth architecture



Program Mission and Strategy

NSDD develops partner countries' capacity to reduce the risk of illicit trafficking through:

- **Deterrence** of trafficking in special nuclear and other radioactive materials by judicious deployment of fixed and mobile radiation detection equipment.

Detection by instrument alarms and information alerts that help locate, identify and secure sources during alarm adjudication.

Operational training, regulatory development, exercises and support for **interdiction** of radioactive materials out of regulatory control.

Mobile Detection System Operations at Borders and Interior Locations

MDS Program provides mobile radiation detection tools to strengthen foreign partners' capabilities to conduct operations involving radiological or special nuclear materials at or within its borders

Mobile detection system (MDS) provides agile element of layered, defense-in-depth architecture.

MDS is a powerful nuclear security tool for border controls and law enforcement operations

- Along "green" and "blue" borders
- Response to intelligence or information alert related to smuggling activity
- Law enforcement sting operations
- Political boundaries where fixed equipment installations are impractical, unauthorized or unwanted.
- Temporary replacement for fixed RPM installation
- Major public events

Tactical and Technical Search Operations Training

Roadside operations in Slovakia (white van in foreground)

Backpack used in field training exercise

Potential MDS Deployments

- Along “green” borders
- Response to intelligence or information alert related to smuggling activity
- Law enforcement operations
- Political boundaries where fixed equipment installations are impractical, unauthorized or unwanted.
- Temporary replacement for fixed RPM installation

Green Borders

Internal (surveillance)

Internal (in-transit)

MDS Equipment

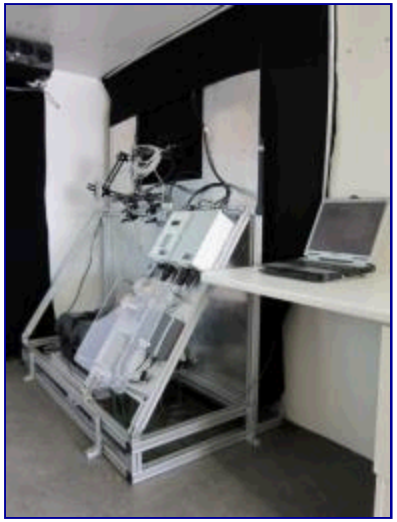
The mobile detection system suite of equipment includes radiation detection vans, backpacks, and handheld devices

- The MDS van and backpack are used as primary inspection tools
- Handhelds are used for secondary inspections and the pager for personal protection

MDS Primary Radiation Detection Van

Gamma-Neutron Detection Skid Installed on Passenger side of van

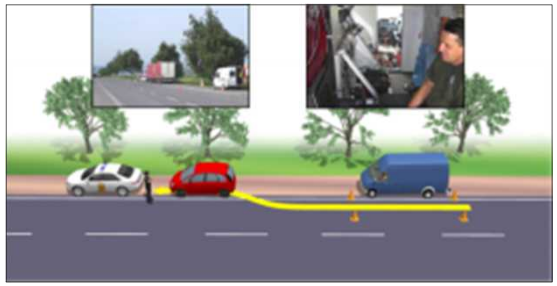
Van designed to work in mobile or stationary mode



Range of Operational Modes are Responsive to Varied Nuclear Security Threats Encountered

- NSDD has developed and tested a set of recommended concept of operations (ConOps)
    - ConOps incorporate operational experiences of partner countries

-In motion capabilities have been developed on the MDS van
    - Operational modes rely on intelligence or information alert related to smuggling activity
    - Effective mobilization of detection assets predicated on prior planning and training



Roadside checkpoint

Scan of parked vehicles in response to information alert

Search of public space in response to information alert

Handhelds Deployed to Supplement Capabilities

Radiation Pager

- Primary purpose is protection and safety of inspector
- Indicates presence of gamma radiation

Hand Held Gamma Detector

- Survey instrument for secondary inspection
- Determines radioactive source location and intensity

Radioactive Isotope Identifier Device (RIID)

- Locates and identifies specific radioactive isotopes

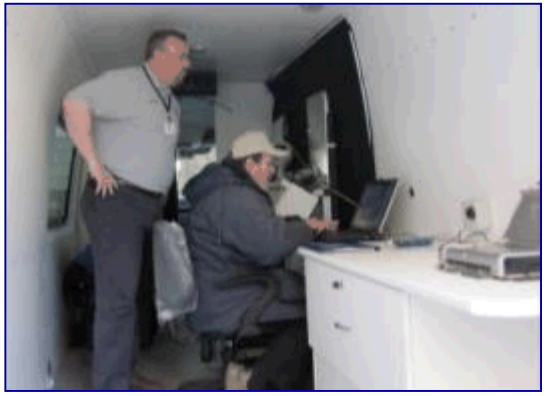
Man Portable (Backpacks)

- Detect both gamma and neutron
- Ideal for wide area search
  - Rugged terrain, buildings, parking structures, special events

Training

Multi-Phase training delivered during and after equipment deployments

- Maintenance/System Administration Training (Training on maintenance of the Raven software and radiation detection systems)
- Operators will need to develop basic understanding of the science behind the radiation monitoring technology and be capable of basic operations and troubleshooting
- Specialized Topics: Joint NSDD-FBI Radiation Detection Investigative Techniques Training, Train-the-Trainer



ConOps Development

- Based on application (e.g. green border, sting operation, information alert)
- Use scenario-based exercises and international workshops to aid in development

Field training exercises

- Collaboration with interagency and international organizations to develop and conduct realistic TTX & FTXs that will utilize fixed and mobile equipment

NSDD Scenario Playbook for Field Training Exercises

Maintenance and Sustainment of MDS Equipment

Van Radiation Detection Equipment

- MDS will provide maintenance training, repair equipment, and spare equipment for the following;
  - Radiation detection skid
  - Cameras
  - Alarm box
- Maintenance training can be provided to recipient agency or to a local maintenance provider

Hand-held equipment

- MDS will replace all damaged hand-held radiation detection equipment for a period of three years
  - Recipient agency contacts the NSDD Program and ships the equipment back to the U.S. MDS will then ship replacement equipment to the agency

Access to NSDD Help Desk

- For any issues that cannot be resolved by the local maintenance provider, NSDD offers access to an NSDD Help Desk

MDS Van

- Recipient agency will be responsible for maintaining and fueling the van.

Radiation Detection and Investigative Techniques (RDIT) Training

- 4 day training course jointly taught by experts from NSDD and FBI
- Curriculum examples include:
  - Mobile Detection System Operations
  - Operations and Evidence Collection in a Hazardous Environment
  - WMD Operational Threat Credibility Evaluation
  - Investigative Operations Planning
- Emphasis on practical scenario-based field training exercises
  - Scenarios can be customized to meet country needs
  - All radiation detection assets are incorporated to exercise officers' skills

RDIT Training Scenarios

Roadside Checkpoint

Public Park

Safe House

Café

Annual MDS Workshops

MDS Operator Workshops:

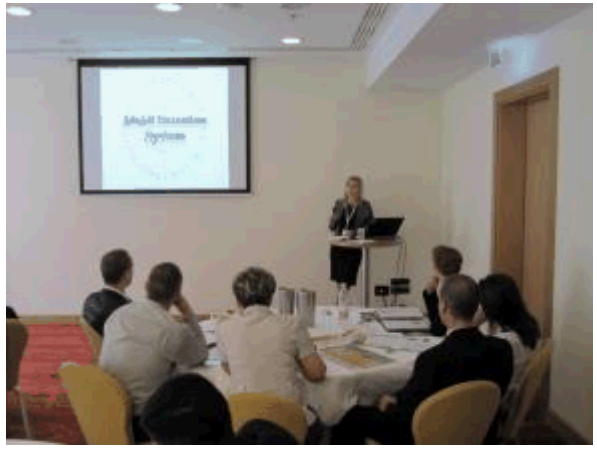
Objectives: To bring MDS operators and program managers together to share different experiences with the equipment, lessons learned and best practices

June 2014 - Border Enforcement Users, Georgia

June 2014- Law Enforcement Users, Georgia

MDS Prospective Users' Workshops:

Objective: Bring together prospective partners interested in MDS and provide a hands-on demo of the equipment, information on NSDD/MDS Program and information on how to partner with us



NSDD Collaboration with INTERPOL

- NSDD has been cooperating with the INTERPOL CBRNE Programme since 2011
- NSDD representative detailed to INTERPOL CBRNE Programme for 2013
- Supports INTERPOL Regional CBRNE Conferences and Rad/Nuc Investigations Courses with equipment demos and training
- Provides a technical resource to CBRNE law enforcement units in INTERPOL member states
- Supports INTERPOL Border Security Operations
  - July 8-15, 2013 Kuala Lumpur International Airport, Malaysia
  - September 23-28, 2013 Astana International Airport, Kazakhstan

MDS Program Summary

The NSDD MDS Program seeks to enhance global nuclear security through cooperative relationships with partner countries

- Enhanced Capacity building that provides flexible radiation detection tools that can be rapidly deployed
- Strong emphasis on training to:
  - help build technical and investigative skills for responding to Rad/Nuc smuggling threats
  - Prepare partners for long term sustainability of the equipment
- Help partner countries connect with other national and international law enforcement communities