NORAD and USNORTHCOM J8 Science & Technology

Col Paula A. Hamilton
Director, J8 Office of Science and Technology
Sir, The Science Guy has a new technology...

"Tell him we haven’t got time for any of his bright ideas - we’ve got a battle on our hands."
FY 19-23 Capabilities of Interest

- Detect, Track & ID Air Targets
- Arctic Capabilities
- Threat Info Sharing
- Engage Aerospace Targets
- Maritime Surveillance – Sub-Surface
- Network Resiliency
- Cybersecurity (Autonomous Mission Assurance)
- Critical Time Management of GPS
- CWMD Preparedness and Response in the Domestic AOR
- Operational Use of Social Media
- Mine/Underwater IED (UWIED) in Homeland
- Maritime Non-Lethal Engagement
- Maritime Surveillance – Surface
- Recovery of USG Personnel in USNC AOR
Air & Missile Domain Issues

- **Track & Assess ICBMs**
  - Long range radar detection
  - Positive ID & discrimination
  - Communication resiliency

- **Detect, Track, & ID Air Targets**
  - Detection at range
  - Tracking, & ID
  - Low, slow, small RCS exploitation
  - Sensor Fusion

- **Engage Air Targets**
  - Develop Low cost per shot technologies
    - Improved Point defense capabilities (Kinetic & Non-kinetic)
  - Sensor fusion
  - Improved EW & SIGINT
  - Next generation weapon defense

- **Counter-UAS**
Maritime Domain Issues

- **Maritime Surveillance – Sub surface**
  - Improve acoustic detection algorithms
- **Maritime Surveillance – Surface**
  - Low cost deployable sensors in austere environments
  - USG sensor integration to include space exploitation
- **Maritime Data Fusion & Dissemination**
  - User defined COP
  - USG sensor integration & dissemination
- **Maritime Non-Lethal Engagement**
  - Use of alternative technologies disable ships
  - Non-lethal engagement surface & air
- **Mine/Underwater IED (UWIED) in Homeland**
  - Improved port mapping & protection
  - Low collateral damage removal of UIEDs
  - Automatic change detection for Ports
Land Domain Issues

- FPCON & Threat Info Coordination
  - USG info sharing & dissemination
- CBRN Preparedness & Response
  - Mass decontamination
  - CBRN detection, response
  - Advanced Bio-surveillance
- Operational Use of Social Media
  - Tech to remove US PII & ID problem areas
- Installation & Security Architecture
  - Continuous identity screening
  - Interoperability with interagency partners
- Integrated Emergency Disaster & Response
  - USG interoperability for response
- Recovery of USG Personnel
  - Detection, alerts & tracking in austere circumstances

Homeland Integrated Bio-surveillance and Response Information Demonstration (HIBRID)/Integrated Early Warning for BIO Response (IEW)

Leveraging Social Media to Enhance Decision Making

UNCLASSIFIED
Cross Cutting Domain Issues

- Network Resiliency
  - Assured Communications
- Critical Time Management Relative to GPS
  - Persistent & accurate timing signals
  - Redundancy from trusted sources
- Electric Energy Security
  - Ensured power where needed
  - Secured SCADA
- Arctic Communication Capability
  - 24hr persistent communications above 65° north
- Arctic Surface Transportation
  - Ice hardening of ships
  - Arctic hardening of ground vehicles
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