*North American Aerospace Defense Command*

*&*

*United States Northern Command*

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**Chief, IC Concepts & Technology**
**15 April 2010**

Aerospace Warning

Aerospace Control

Aerospace Warning

Homeland Defense

Maritime Warning

Civil Support

Maritime Warning

Aerospace Control

Natural Disasters

Cruise Missiles

Illicit Trafficking

Terrorism

Intercontinental Ballistic Missiles

Illegal Migration

Terrorism

Manmade Disasters

Natural Disasters

Illegal Migration

Pandemic Disease

Illicit Trafficking

# *Total Force/Interagency Team*

## 60 Organizations are part of our Team!!!



## *Redefining Jointness…Success Through Effective Relationships*

# *Capability Focus Areas*

**Multi-Domain Surveillance** - Air, Maritime, Land

**Air Sovereignty Alert (ASA)**

**Integrated Air and Missile Defense (IAMD) of the Homeland**

**Interoperable Communications**

**Engage and Defeat Domestic Maritime Attacks**

**Cyber Capabilities**

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# *Capability Focus Areas*

## Multi-Domain Surveillance:

-Air Domain:

Sensor coverage limited for both missiles and air breathers

Near-term Focus - netting existing sensor capability utilizing space, airborne and terrestrial based sensors

- C2 Gap Filler JCTD (DOD&DHS co-sponsors)

# *Capability Focus Areas*

## Multi-Domain Surveillance:

-Maritime Domain:

Inability to detect engage and defeat maritime threats

Near-term Focus – P-8A Poseidon Multi-Mission Aircraft, Broad Area Maritime Surveillance, Next Generation OTHR, National Technical Means, as well as developing biometrics capabilities to identify persons of interest.

Capability to provide persistent surveillance and tripwire for missile defense and detecting uncooperative vessels

Capability to provide theater to theater high BW comms minimizing dependence on satellite and fiber cable comms

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# *Capability Focus Areas*

## Multi-Domain Surveillance:

- Land Domain:

No reliable system exists to surveil the border regions quickly and accurately to locate tunnels under the border

Near-term Focus – leveraging inexpensive passive seismic & acoustic sensors that have shown promise in operational settings, layering in active sensors to create a systems of systems approach

- Rapid Reaction Tunnel Defeat JCTD (DOD&DHS co-sponsors)

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# *Capability Focus Areas*

## Air Sovereignty Alert (ASA):

    - BLOS communication with aircraft is a challenge, especially in northern latitudes and in remote areas

        Study way ahead for to provide BLOS comms to next generation ASA aircraft

## Integrated Air and Missile Defense (IAMD) of the Homeland :

    - Integrated defense for continuous, real-time discrimination for threat launch through impact for cruise missile, other low-altitude aircraft and short range missile attacks

    http://www.youtube.com/watch?v=8LCMzyfK1ls

# *Club-K Container Missile System*

# *Capability Focus Areas*

## Interoperable Communications

- Lack of capability in Command, Control, Communications, and Computes C4 system survivability and information transport significantly hinder C2 across all mission sets and with full range of mission partners.

High altitude laser comms (both platform and laser comm payload)

Conduct  AoA on communications given expanding arctic accessibility

*Capability Focus Areas*

**Engage and Defeat Domestic Maritime Attacks**

- With short notice of a potential threat approaching the US from the maritime domain, available US Maritime Homeland Defense forces have an inadequate ability to engage and defeat near-simultaneous threats to the Homeland

Non-lethal vessel stopping

# *Capability Focus Areas*

## Cyber

- As we rely more and more on net centric operations, the homeland becomes increasingly vulnerable to globally dispersed threats originating from or traveling through cyberspace. Cyber capabilities are needed to control and safeguard information as we simultaneously seek to expand information access with our many and varied mission partners

Limited ability to defend the network
Lack of forensics

# *Collaboration with DHS*

*www.**dhs**.gov/xlibrary/assets/**High_Priority_Technology_Needs**.pdf*



High-Priority Technology Needs

May 2009

Homeland Security
Science and Technology

Version 3.0