

This Briefing is Classified  
**UNCLASSIFIED**



*Air Surveillance  
Applications  
NORAD's Perspective*

Lt Col Bryan Miller  
NORAD J35W  
18 Nov 09



- **Situation**
- **Background Information**
- **Sustainment Initiatives**
- **Future Solution Requirements**
- **Solutions on the Table Today**

**NOTE: This brief incorporates NORAD & USNORTHCOM specific equities. It does not encompass all DOD equities.**



## *NORAD's Air Surveillance Situation*

- **NORAD shares sensors with the FAA & DHS**
  - FAA responsible for air safety for cooperative aircraft
  - NORAD defends North American Airspace against:
    - Cooperative & Non-cooperative manned aircraft, UAS, Cruise missiles, etc.
- **NORAD & DHS perform homeland security roles against asymmetric, non-cooperative threats**
  - Mission Examples: Counter Drug, Immigration
- **NORAD has two homeland defense target sets**
  - Traditional – external bomber & cruise missile threat
  - Asymmetric – interior area added as a result of 9-11



## *Background Information*

- **Air Surveillance is NORAD's #1 Issue**
  - CDR NORAD's message to Congress in Mar '08
- **NORAD's Radar Coverage is Diminished by:**
  - Wind Turbines
  - Man-made Obstructions
  - Aging Air Surveillance Systems
- **NORAD Supports & Continues to Support:**
  - Existing radar systems thru sustainment initiatives
  - Integration of bridging programs/technologies
  - And promote future systems development



## *Air Surveillance Sustainment Initiatives*

- **Service Life Extension Program Continues**
  - Pushing life expectancy of vintage radars past 2015
- **FPS-117 Essential Parts Replacement Program**
  - Radars projected to fail in 2013 w/out EPRP
- **FPS-124 Frequency Synthesizer**
  - Funding is in place, awaiting fielding
- **Wind Farm & Obstacle Mitigation Strategies**
  - Mitigation options: Today = Outside RLS solution;  
In the future = Technological solution
  - DOD policy development in initial stages



# *Future Air Surveillance Solution Requirements*

- **Improved Detection & Processing Capability**
  - Faster detect rates & initial track establishment
  - Advanced signal processing, filtering & 3D accuracy
- **Improved Threat Assessment**
  - Faster correlation rates & integrated ID capability
  - Automated flight profile deviation/change flagging
- **Increased Air Domain Coverage**
  - Low altitude, low radar cross section & low speed
  - Flock Detection & Bird Strike/Hazard mitigation
  - Wind Farm interference, screening & solutions
- **Targeting Quality Guidance Capability**



## *Air Surveillance Solutions on the Table Today*

- **Potential Technology Solutions Include:**
  - **NextGen Over the Horizon Radar**
  - **Multifunction Phased Array Radar**
  - **Aerostats**
  - **High Altitude Airships**
  - **Maritime Surveillance Capabilities**
  - **Many Others**



*Questions?*

