The Office of Infrastructure Protection

National Protection and Programs Directorate
Department of Homeland Security

DHS Update to the PNT Federal Advisory Board

December 2016

Agenda

- Receiver Testing
- Sector Timing Requirements Validation
  - Focus is on the Manufacturers
  - Owners and Operators
- RFI for Analysis of Alternatives
DHS Risk Management & Program Strategy

Holistic view with a layered approach

Mitigation via Diversity

Complementary PNT
- Alternate Timing Sources (eLoran, Iridium, Fiber, etc.)

Mitigation via Improved Equipment

Mitigations
- Specialized antennas
- Alerts & monitoring
- More robust receivers

Mitigation via Awareness

Engage & Educate
- Best Practices
- Manufacturers (create fixes)
- End-Users (create demand)

Mitigation via Vulnerability & Impact Assessment

Vulnerability Assessment
- Receiver characterization testing (lab, open air, system-level)

Synchronize efforts through PNT PMO and Executive Steering Committee
Vulnerability Assessment & Awareness: WSMR Exercise Overview

- **Purpose**: Conducted live testing and demonstrations of first responder communications in electronic jamming threat environment provided by White Sands Missile Range, including:
  - First responder communications systems against commercial jamming
  - Anti-jamming technologies against commercial jamming
  - Satellite communications against commercial jamming
  - Unmanned Aircraft Systems (UAS) against DoD complex GPS and commercial jamming
  - Fixed timing receivers (used in critical infrastructure) against DoD complex GPS and commercial jamming

- **Outcomes**: Understand impact of electronic threats on first responder communications and mission operations; identify training gaps and mitigation strategies; and share lessons learned and best practices with first responders nationwide
Future test

- April 17 Open Air Test Bed (Indiana)
  - Who: GPS Receiver Manufactures

- July 17 Open Air Test - Round 2 (Idaho National Labs)
  - Who: Critical Infrastructure Owner and Operators and Receiver Manufacturers
  - Build off 2015 Test

- Application Considerations
  - Demonstrate how receivers operate in an open air environment
  - Are the receivers appropriate for the supported market sector?

Identifying vulnerabilities will enable both manufacturers and end users to develop mitigation strategies.
CPNT Validation

Validate CI requirements for Timing

Participation by industry experts essential.

Cross-sector assessment will provide information to support decision regarding additional sector specific studies.
RFI -- PNT Service for National Critical Infrastructure Resiliency

- **Focus Areas**
  - Nationwide CI Timing Application Coverage for a GPS Backup
  - Regional/Local CI Timing Application Coverage for a GPS Backup
  - Nationwide or Regional/Local CI Timing Application Coverage Additional to GPS Capabilities

- **POC:** Karen L. Van Dyke, Director, Positioning, Navigation, and Timing & Spectrum Management, DOT

- **Due:** January 30, 2017

For more information, visit: www.dhs.gov/critical-infrastructure

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