The Office of Infrastructure Protection

National Protection and Programs Directorate
Department of Homeland Security

UAS Project
Non-Traditional Aviation Technology
Unmanned Aircraft Systems West Symposium

March 7th, 2016

 Courtesy of DHS
Agenda

- Background
- DHS Policy
- NPPD Priorities / Policy
- IP Strategy and Current Initiatives
- Private Sector Feedback

Hurricane Katrina UAS Photo, New Orleans, LA, September 7, 2005. Courtesy of DHS.
Threat Environment

- Unmanned Aircraft Systems (UAS) encounters have increased in critical infrastructure domains.
- The majority of encounters are not malicious in nature, but highlight potential security vulnerabilities; however, terrorist and criminal organizations do integrate UAS into their operations.
- UAS encounters are usually small recreational platforms marketed to individual users.
  - Desired flight systems emphasize low training requirements and are gaining in popularity due to high resolution video capabilities and decreasing prices.
- Four broad UAS adversary tactics:
  - Surveillance
  - Smuggling
  - Disruption
  - Weaponization

Source: Joint UAS Homeland Baseline, 31 July 2015
DHS Office of Intelligence and Analysis (I&A) Homeland Threat Division
DHS Policy

- DHS Secretary requirement memo signed February 8, 2016

- Key Policy Takeaways
  - Establish Common Level of Knowledge – DHS Science and Technology
  - Legal Issues for Jamming, Countermeasures, and Use of Force – DHS Office of General Council
  - Common Law Enforcement Baseline and Operational Posture – Federal Emergency Management Agency (FEMA) and United States Capitol Police (USCP)
  - Sharing beyond National Capital Region – DHS Public Engagement
  - Public Awareness Campaign – DHS and Federal Aviation Administration (FAA) working together to message safety and security
National Strategy for Aviation Security


- Strategic vision for aviation security supported by plans in
  - Aviation transportation system security
  - Aviation operational threat response
  - Aviation transportation system recovery
  - Air domain surveillance and intelligence integration
  - Domestic and international outreach.

- Non-traditional aircraft. Ultra-lights, remote-controlled aircraft, gliders, aerial-application aircraft, and UAVs
  - Limited potential as targets, terrorists might employ these non-traditional aircraft as weapons or as a means to disseminate WMD
DHS S&T – Engaging Options

▪ Posted to FedBizOpps.gov on February 24th, 2017
  ▪ Package Deadline is no later than 5:00 p.m. EST on March 24th 2017. Applications received after this time may not be considered

▪ Led by: DHS Science & Technology, Program Executive Office Unmanned Aerial Systems (PEO UAS)
  ▪ Seeking technology solutions capable of detecting, identifying, and tracking small Unmanned Aerial Systems (sUAS) perceived as threats to people or critical infrastructure
  ▪ DHS S&T 2017 Technical Assessment of Counter Unmanned Aerial Systems (C-UAS) Technologies in Cities (TACTIC)

▪ Additional communication avenue: DHS S&T Technology Foraging team – send information on solution provider potential - hsarpa.innovate@hq.dhs.gov
Infrastructure Requirements

- **Goal:** Work with partners to generate a full set of requirements for increased capacity for Non Traditional Aviation Threats (NTAT) and build capabilities to meet those requirements.

- **Examples include:**
  - **Mobile site:** Emergency Services (First responders) firefighting, Nuclear (hazardous material), Transportation (aircraft)
  - **Fixed Site:** Government facilities, Dams and levees, critical manufacturing buildings, Oil/Natural Gas Pipelines and Electric Transmission and Distribution
  - **Virtual:** Financial Services, IT, Healthcare database management
  - **Public gathering / open air:** Commercial facilities, Water Supply reservoirs, Agricultural fields
NPPD Priorities and Considerations

- NPPD Approach – Strategies to inform government and private sector decision makers on unique UAS risk
  - Federal Protective Service (FPS)
    - US Park Police
    - US Capital Police
  - Office of Cyber and Infrastructure Analysis (OCIA)
    - NTAT National Capital Region Risk Assessment
    - Model Aircraft Reference Aid

Courtesy of DHS
NPPD Priorities / Policy


- SEC. 2209. Applications For Designation.
  - **Fixed site facilities**:
    - Critical infrastructure, such as energy production, transmission, and distribution facilities and equipment.
    - Oil refineries and chemical facilities.
    - Amusement parks.
    - Other locations that warrant such restrictions.
  - Considerations.—In making a determination whether to grant or deny an application for a designation, consider:
    - aviation safety;
    - protection of persons and property on the ground;
    - national security; or
    - homeland security.

NPPD Priorities / Policy (cont.)


- SEC. 2210. UAS Operations associated with critical infrastructure.
- SEC. 2208. UAS traffic management. FAA and NASA
- SEC. 2207. Emergency exemption process. Exemptions for the use of unmanned aircraft systems by civil or public operators in response to a catastrophe, disaster, or other emergency to facilitate emergency response operations, such as firefighting, search and rescue, and utility and infrastructure restoration efforts.
- SEC. 2206. Pilot project for airport safety and airspace hazard mitigation. FAA work with DHS and DOD – systems deployed to mitigate threats posed by errant or hostile unmanned aircraft system operations do not adversely interfere with safe airport operations.

IP Strategy and Current Initiatives

- **UAS Engagement and Project Plan**
  - **Convener**: Collaboration forums and information sharing
  - **Knowledge management**: Promoting situational awareness and best practice warehouse
  - **Assessor**: Participating in risk, intelligence, and operational product development
  - **Engagement** on authorities to manage NTAT threat, UAS and Counter-UAS manufacturing industry, and foster a partnership with supporting law enforcement personnel
IP Strategy and Current Initiatives (cont.)

- Build capabilities to support critical infrastructure stakeholder requirements related to Non-Traditional Aviation Threats by developing reference materials that support risk mitigation activities.
  - UAS Security Best Practice Information Series
  - Beneficial UAS operations
  - Research and Development ongoing efforts by the FAA and DHS Science and Technology
  - Reporting potential illicit UAS activity around critical infrastructure event locations and fixed site facilities
IP Strategy and Current Initiatives (cont.)

- International strategy engagement with Australia, Canada, New Zealand, and the United Kingdom through the Critical Five (C5)
  - Established in 2012 to address critical infrastructure security and resilience areas of mutual interest
  - Australia developed a table of drone regulations across the five countries and collaboration ongoing to share multi-level government security issues
  - Opportunity engagement on U.S. infrastructure policies and approaches to counterterrorism, cyber security, biological threats, UAS, and others.
Field Activities – Protective Security Advisors

- UAS/Drone Outreach Activities for Super Bowl 50
  - Discussions at numerous meetings and working groups during from March 2015 – January 2016
  - Delivery of UAV handouts and guidance materials to stakeholders involved with planning and preparations.
  - Handouts and guidance materials used to develop Concept of Operations and Temporary Flight Restrictions (TFRs) for UAS/drones.
  - Starting at 2 p.m. and lasting until 11:59 p.m. Sunday, the FAA issued a TFR for most aircraft—including drones—in a 32-mile radius around the stadium.

FAA - Individuals could receive a $1,000 fine, and a business fine could be as much as $27,500

Credit: Public Service Announcement, San Francisco, CA
Field Activities – Protective Security Advisors (cont.)

- Colorado – Information sharing
  - Colorado Information Analysis Center (CIAC) policy and protective measures
  - State of Colorado submitted several bills related to personal privacy and law enforcement activities related to Unmanned Aerial Systems (UAS)
  - CIAC consider UAS in risk assessment products and support special events and policy creation related to UAS overflights.
Field Activities – Protective Security Advisors (cont.)

- California – Protection Working Group
  - PSA participating in Los Angeles UAS Working Group
  - Common engagement discussions surround facilities’ ability to protect themselves against the UAS emerging threat.
  - Federal policy input and education relating to registering UAS vehicles, reporting suspicious activity, and state/local protection policy creation

Courtesy of DHS
Field Activities – Protective Security Advisors (cont.)

- Information Sharing and Sector Outreach:
  - Information dissemination
    - Region VI - Provided FAA rules, OCIA bulletin, and DHS I&A reports
    - Region XI - Planned workshop with Fusion Centers
    - Region III - Facility operator RFI - Security use of UAS to support Navy/Marine Corps Memorial Stadium to gain aerial perspective of the crowd from a safe area outside the stadium.

- Exercise support – UAS inject
  - Example: Region III Fleet Week TTX---UAS/NATAT Threat based scenario - delivering an unknown powder substance over a crowd
Field Activities – Protective Security Advisors (cont.)

- **Working Groups**
  - Region IX Counter UAS Working Group
  - Region III - Delaware State Police, Aviation Unit, considering creation of an UAS Committee in FY17

- **Special Events**
  - Examples: 2016 SEAR 1 (Rose Bowl) event support Region IX, Super Bowl 51 and 51 events
  - Region VII – Provided Law enforcement capability, coordination, information sessions about UAS with stakeholders in support of the World Series Oct-Nov 2015
  - Region VII Sturgis Motorcycle Rally
Commercial Facilities Sector

- April 18th, 2016 – Sports Leagues Subsector Council Spring Meeting
  - Status of the NTAT/UAS WG activities
  - Overview of the DHS S&T CUAS Technology Systems DEMO
  - UAS webinars and trainings presented and planned
  - Inter-agency collaborations, e.g. FBI WMDD/ICU, S&T, etc.

- August 24th, 2016 - Invitation and registration information to CFS Subsectors to FAA sponsored LE webinar.
  - Impact: Informed law enforcement community and CFS subsectors with UAS equities in Part 107 – commercial use
Commercial Facilities Sector (cont.)

- September 23, 2015 – International Festivals & Events Association provided “Safe Havens: Protecting Your Event Against Homegrown Violent Extremists”
  - UAS mitigation measures, resources, and tools

- Other sector concerns
  - Safety and security of patrons, employees and neighbors, recognizing UAS technology evolution
  - Commercial UAS proliferation and airspace management, difficult to control, potential for a catastrophic event
  - Enforcement of regulations and the ability to prosecute

Courtesy of FAA
Chemical Sector

- April 2016 – Global Chemical Summit, Poland: FAA and DHS support
  - Information on mission areas, safety of National Aerospace (NAS), people, and property on the ground
- July 2016 - Annual Chemical Summit
  - Unmanned Aircraft Systems in the Homeland Security Environment Presentation

- UAS sector concerns
  - Airspace restrictions over facilities and interactions with security
  - Damage to facilities and suspicious activity
  - Safety, emergence, and evolution of unmanned aircraft

For more information on sector specific UAS activities, please contact the Chemical SSA: ChemicalSector@hq.dhs.gov
Dams Sector

  - Dams Sector Information Sharing Resource Guide

- **Outcome/Impact:**
  Improved communication and sharing of information within the Dams Sector.

- Participants included owners / operators and Federal, State, local, tribal, and territorial government representatives.

Participant feedback was overwhelmingly favorable.
Dams Sector (cont.)

- Dams Sector public and private sector members have increased awareness of UAS activities, threats, and challenges
- New Mexico State University UAS Dam Inspection project
- February 23, 2016 – Dams Sector Risk Assessment Working Group (RAWG) gained insight into possible uses of drones to support operations within the Dams Sector.
Emergency Services Sector

- **Potential UAS uses:**
  - Timely Response to disasters - Overhead damage assessments, reconnaissance, and missing person searches
  - Manned aircraft augmentation options for each sector discipline
  - Explosive device remediation, hazardous materials operations, tactical law enforcement operations, and surveillance/detection.

- Standardized Equipment List - Interagency Board for Equipment Standardization and Interoperability (IAB)

- DHS Authorized Equipment List - allowable equipment expenditures for select grant programs
  - Federal Emergency Management Agency Disaster and Non-Disaster Grants
  - Assistance to Firefighters Grants (AFG)
Nuclear Reactors, Materials, and Waste Sector

- April 20, 2015 – Classified Threat Brief for Nuclear Sector stakeholders on Unmanned Aircraft Systems by DHS I&A
  - Nuclear power plant owners and operators with a stake in the protective and resilience posture of the Nuclear Sector updated on actionable threat information pertaining to physical, cyber, and IED threats

- The U.S. Nuclear Regulatory Commission (NRC) assists with physical protection consistent with the significance of the facilities or material to be protected

- The FAA’s long-standing general Notice to Airmen (“NOTAM”) “strongly advises” pilots to avoid the airspace above or in the proximity to nuclear power plants
Infrastructure Security Compliance Division

- ISCD submitted 5 Suspicious Activity Reports to the National Infrastructure Coordinating Center (NICC) for Drones flying over/around chemical (CFATS) Facilities since 9/1/2015

- Region 7 integrated UAS topic during release hazard stakeholder visits when discussing general security awareness.

- Region 10 supported one facility and the California Office of Emergency Services (Cal OES) on the UAS risk topic.
  - Facility employees saw a drone over the property and reported the incident to local law enforcement
  - Provided information on the identified controlling source/operator
  - Deterrence - Legal use - state aviation legislation pending
Cross Sector Engagement

- March 11th, 2016 - DHS S&T Piper C-UAS system demonstration, Quantico, VA

- March 18, 2016 – Engagement Working Group
  - SOPD hosted a UAS Engagement Working Group meeting to discuss the risks to critical infrastructure corresponding to Non-Traditional Aviation Technology
  - Primary focus was a new classified NTAT risk assessment, and FAA, DHS S&T and Policy, and NPPD/FPS provided informational briefings to public and private sector personnel.

- June 11-12th 2016 - Boston Police Department Exercise and Technology Evaluation, Fenway Park, Boston, MA

- July 11-15th, 2016 – sUAS and First Responder Equipment testing, White Sands Missile Range (WSMR), New Mexico
Cross Sector Engagement

- July - Sept 2016 - MITRE C-UAS Challenge, Quantico, VA
- August 22-24th, 2016 - UAS Magazine sponsored 10th annual UAS Summit and Expo, Grand Forks, North Dakota
- September 7th 2016, DHS Fusion Center Webinar - Unmanned Aircraft Systems and Homeland Security
- Military and Government Unmanned Aircraft and Counter UAS Symposium, November 9-10th, 2016 Arlington, VA
- National Marathon Safety and Security Summit, December 12-14th, 2016, Biloxi, MS; National Intercollegiate Security Summit, January 24th, 2017
Cross Sector Engagement

- Infrastructure Protection, Regional Consortium Coordinating Council (RC3), and the State, Local, Tribal and Territorial Government Coordinating Council (SLTTGCC) completed a 3-part Joint Critical Infrastructure Partnership (JCIP) Webinar Series: Unmanned Aerial Vehicles (UAV)/Drones...Hovering Friends or Foes?

- Over 1,200 individuals participated.

- The individual episodes:
  - March 3\textsuperscript{rd}, 2016 - UAV Drone Technology Overview
  - March 10\textsuperscript{th}, 2016 - UAV Drone Use Cases & Threats
  - March 17\textsuperscript{th}, 2016 - UAV/Drone Policy
Private Sector Feedback

- Challenges identified by private sector partners
  - Mechanism established for private sector to more effectively inform the intelligence community of the threats and concerns within the various sectors
  - Inform developed products to more comprehensively include information assisting in risk mitigation activities

- Next Steps
  - Identify engagement areas with private and public sector
  - Integrate field expertise into national program
  - Private sector Counter UAS system usage and mitigation measures into Incident and Emergency Response Plans
Resources

- Homeland Security Information Network (HSIN) Resources
  - DHS S&T (Counter-UAS and other technology topics)
  - HSIN-CI: Air Domain Awareness Site
  - UAS Threat Working group (OCIA/NCTC)

- Join HSIN-CI: Membership intended for individuals supporting the protection of the nation’s critical infrastructure
  - [https://hsin.dhs.gov/](https://hsin.dhs.gov/)

- Nationwide Suspicious Activity Reporting (SAR) Initiative (NSI)

- National Infrastructure Coordinating Center (NICC) – Incident reporting and RFIs
  - Email: nicc@hq.dhs.gov

- Request UAS content in Critical Infrastructure exercises through local Protective Security Advisor or sopd.exercise@hq.dhs.gov

Courtesy of DHS
Resources (cont.)

- **Homeland Security Starts with Hometown Security**
  - The Department encourages businesses to Connect, Plan, Train, and Report.
  - Steps in advance to help better prepare businesses and their employees to proactively think about the role they play in the safety and security of their businesses and communities

[Image: Courtesy of DHS](https://www.dhs.gov/hometown-security)
Important FAA Offices

- Law Enforcement Assistance Program (LEAP)
  - Consists of field investigative and operational activities
  - Support to law enforcement agencies seeking criminal prosecution, conducting airborne drug interdiction and training on smuggling techniques

- System Operations Security
  - Crisis Response and Emergency Operations, Air Traffic System Operations Security
  - Mitigate threat impacts, incidents, and implement security measures on safety and efficiency of the National Air Space (NAS)
Important FAA Offices (cont.)

- FAA UAS Integration Program Office
  - Small Unmanned Aircraft Rule (PART 107) – Published 6/21/2016
    - Operational Limitations
    - Remote Pilot in Command Certification
    - Aircraft Requirements
    - Model Aircraft

- Public Affairs
  - Education, Outreach, Safety Messages
For more information, visit: https://www.dhs.gov/uas-ci

Matt Barger

Intelligence and Technology Portfolio Lead

IP-UAS@hq.dhs.gov