

Unmanned Aircraft Systems (UAS)

Update

Presented to: ICAO ATM SG

Presented by: Darryel Adams

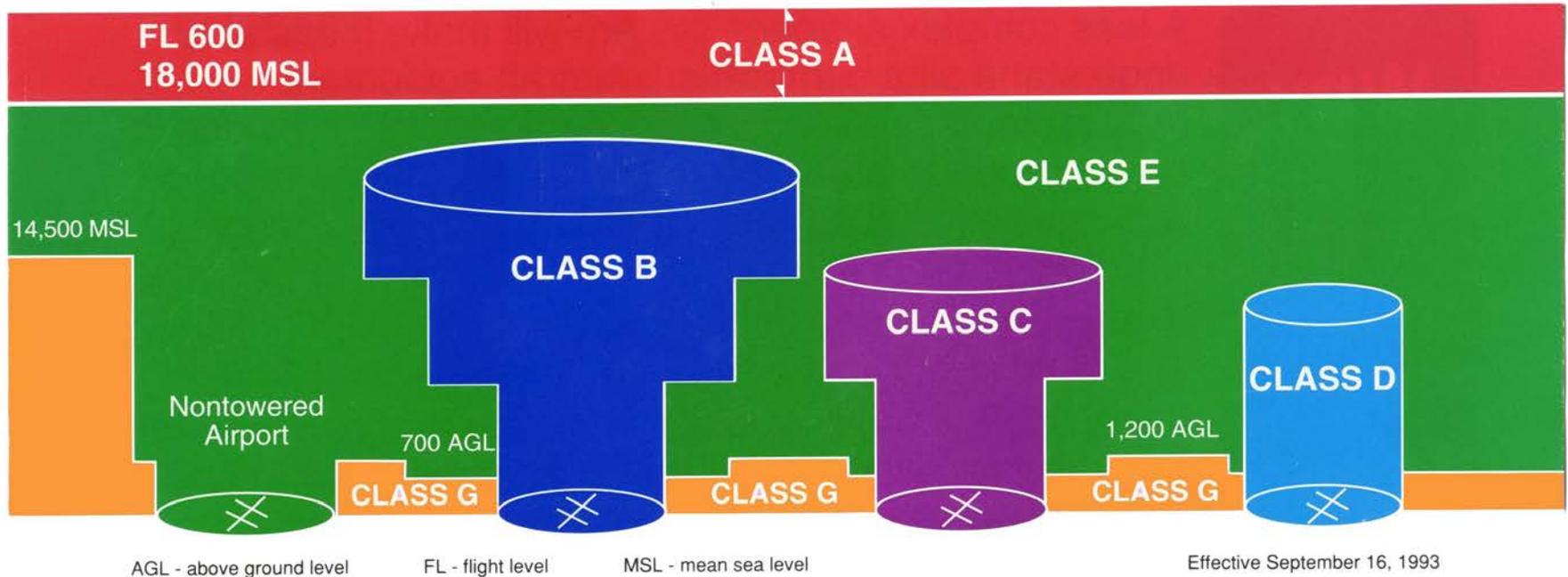
Date: Nov/Dec 2015



Federal Aviation
Administration



Where are UAS Operating?



- **UAS have been approved to operate in all classes of airspace**
- **Flight over populated areas approved on a case-by-case basis**

Who is Operating UAS in the National Airspace System (NAS)?

Public (Governmental) Use Aircraft – via Certificate of Waiver or Authorization (COA)

- Department of Agriculture
- Department of Commerce
- Department of Defense
- Department of Energy
- Department of Homeland Security
- Department of Interior
- Department of Justice
- NASA
- State Universities
- Federal/State/Local Law Enforcement

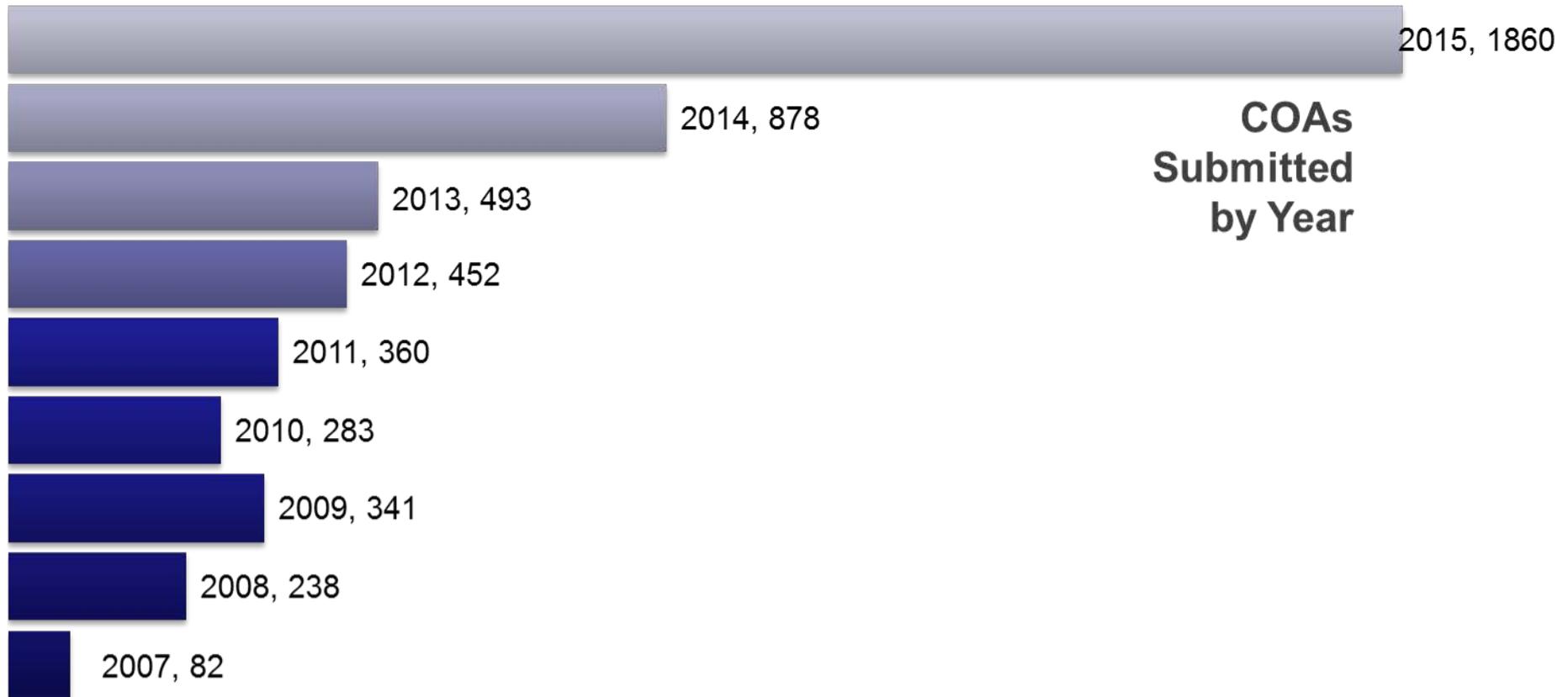
Civil Aircraft – via Special Airworthiness Certificates in the Experimental Category and Special Flight Permits

- Insitu
- Aerovironment
- Raytheon
- AAI Corporation
- General Atomics
- Boeing
- Others

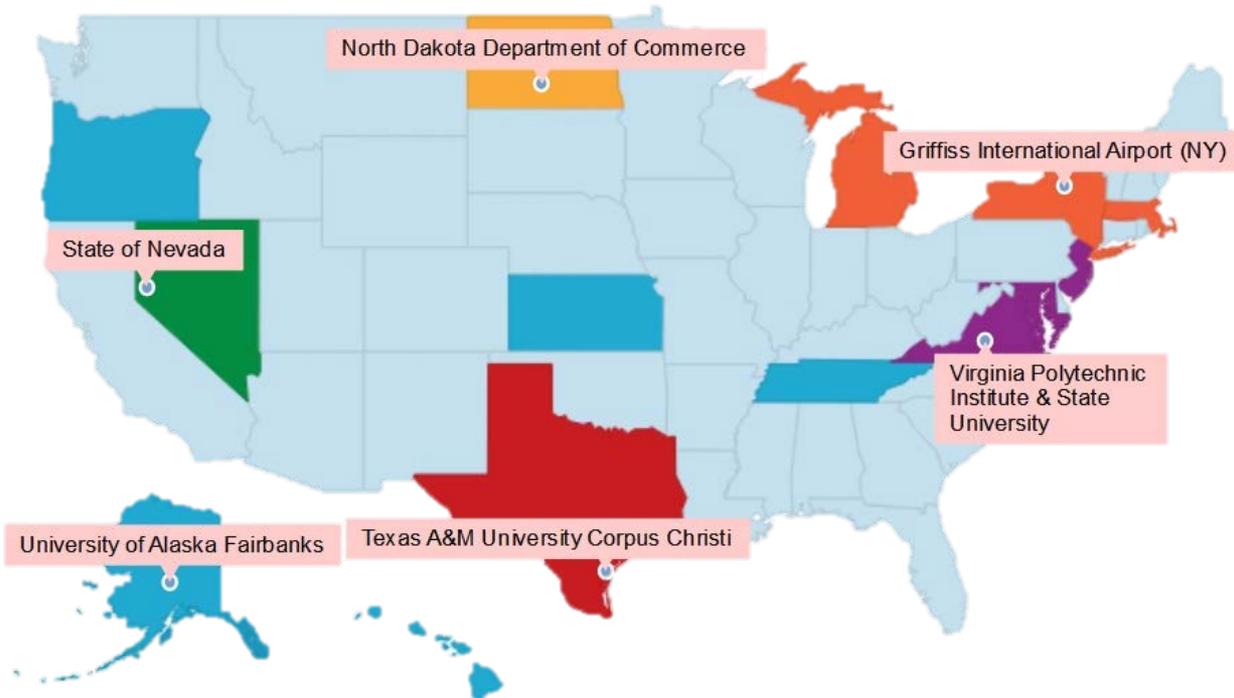
Civil Aircraft – via Section 333 Exemption and COA for Limited, Low-Risk Commercial Operations

- Television/Movie Filming
- Precision and Aerial Survey
- Flare Stack Inspection
- Construction Monitoring
- Agriculture
- Real Estate
- Utility Inspection
- Infrastructure Inspection
- Roof Inspection
- Surface Mining
- Others

COA Applications Submitted



UAS Test Sites



- **University of Alaska**
 - Operational May 5, 2014
- **State of Nevada**
 - Operational June 9, 2014
- **New York Griffiss International Airport**
 - Operational August 7, 2014
- **North Dakota Department of Commerce**
 - Operational April 21, 2014
- **Texas A&M University – Corpus Christi**
 - Operational June 20, 2014
- **Virginia Polytechnic Institute and State University (Virginia Tech)**
 - Operational August 13, 2014

http://www.faa.gov/uas/legislative_programs/test_sites/

UAS Center of Excellence

- **Award announced May 8: Alliance for System Safety through Research Excellence (ASSURE)**
 - Team led by Mississippi State University
- **Focus: research, education and training in areas critical to safe and successful integration of UAS into the NAS**
- **Expected to begin research by September 2015 and be fully operational by January 2016**
- **\$5 million appropriated by Congress (5 years); will be matched one-by-one by team**
- **Expected to perform any required flight testing at one or more of the six Congressionally-mandated Test Sites**

Proposed Small UAS Rule

- **Currently in DRAFT**
 - Notice of Proposed Rulemaking (NPRM) Published to Federal Register on February 23, 2015
 - Public comment period concluded on April 24, 2015
 - Produced approximately 4,500 public comments
- **Small commercial UAS projected to be largest growth sector**

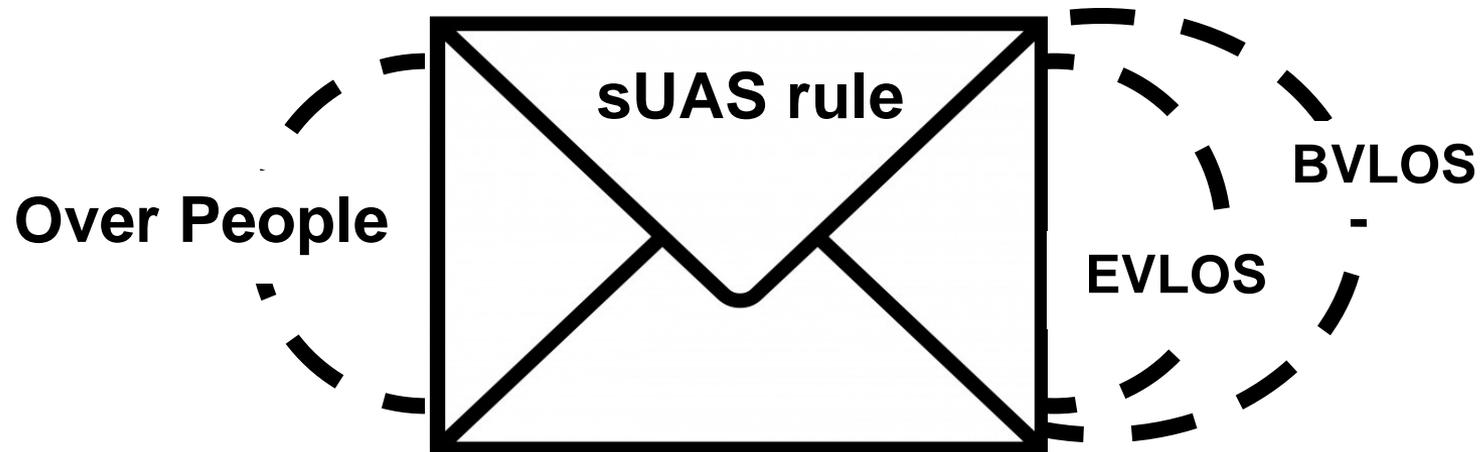


Proposed Small UAS Rule: Major Provisions

- **Must see and avoid manned aircraft**
 - UAS must be first to maneuver away if collision risk arises
- **Must discontinue flight in event of presenting a hazard to other aircraft, people or property**
- **Must assess risks presented by:**
 - Weather conditions
 - Airspace restrictions
 - Location of people
- **May not fly over people, except those directly involved with the operation**
- **Flights limited to:**
 - 500 feet altitude
 - 100 mph
- **Must avoid airport flight paths and restricted airspace areas**
- **Must obey any FAA Temporary Flight Restrictions (TFRs)**

Focus Area Pathfinder Overview

- Announced at AUVSI in May 2015
- Purpose: Identify the safety mitigations that can lead to expanded access for UAS and inform future rulemaking
- Approach: Work with industry partners to gain operational approval for key UAS operations and establish a repeatable process



Focus Area Pathfinders

- **Three Focus Area Partners:**
 - CNN
 - Visual line-of-sight operations, urban environments
 - Precision Hawk
 - Extended visual line-of-sight operations, rural environments
 - BNSF Railways
 - Beyond visual line-of-sight operations, rural environments



Education, Compliance and Enforcement

- **FAA's primary approach to new UAS operators is education**
- **FAA has authority to take enforcement action against any persons who operate a UAS:**
 - In violation of the Federal Aviation Regulations (FARs)
 - In a manner that endangers the safety of the NAS or people and property on the ground
- **Enforcement tools include:**
 - Warning notices, letters of correction, civil penalties

Know Before You Fly Campaign

- **Announced December 22, 2014**
 - Provides prospective UAS users with information and guidance to fly safely and responsibly
 - Founding members: AUVSI, Academy of Model Aeronautics (AMA) and the Small UAV Coalition
- **FAA reached voluntary agreement with UAS manufacturers to include guidance materials in packaging**
 - DJI, Parrot, and Yuneec Electrical Aviation

www.knowbeforeyoufly.org



B4UFLY Mobile App

- **Announced at AUVSI Unmanned Systems 2015 on May 6**
- **Designed to provide model aircraft situational awareness of any restrictions or requirements prior to flight**
- **Limited beta test began August 28**
 - 1,000 users
 - Will last two months, then available to general public
 - Initially iOS; Android version to follow



No Drone Zone Campaign

- Education about federal rules prohibiting aircraft from operating in the Flight Restricted Zone around Washington, DC
- Digital toolkit of outreach materials available to partners
- Cross-agency outreach effort

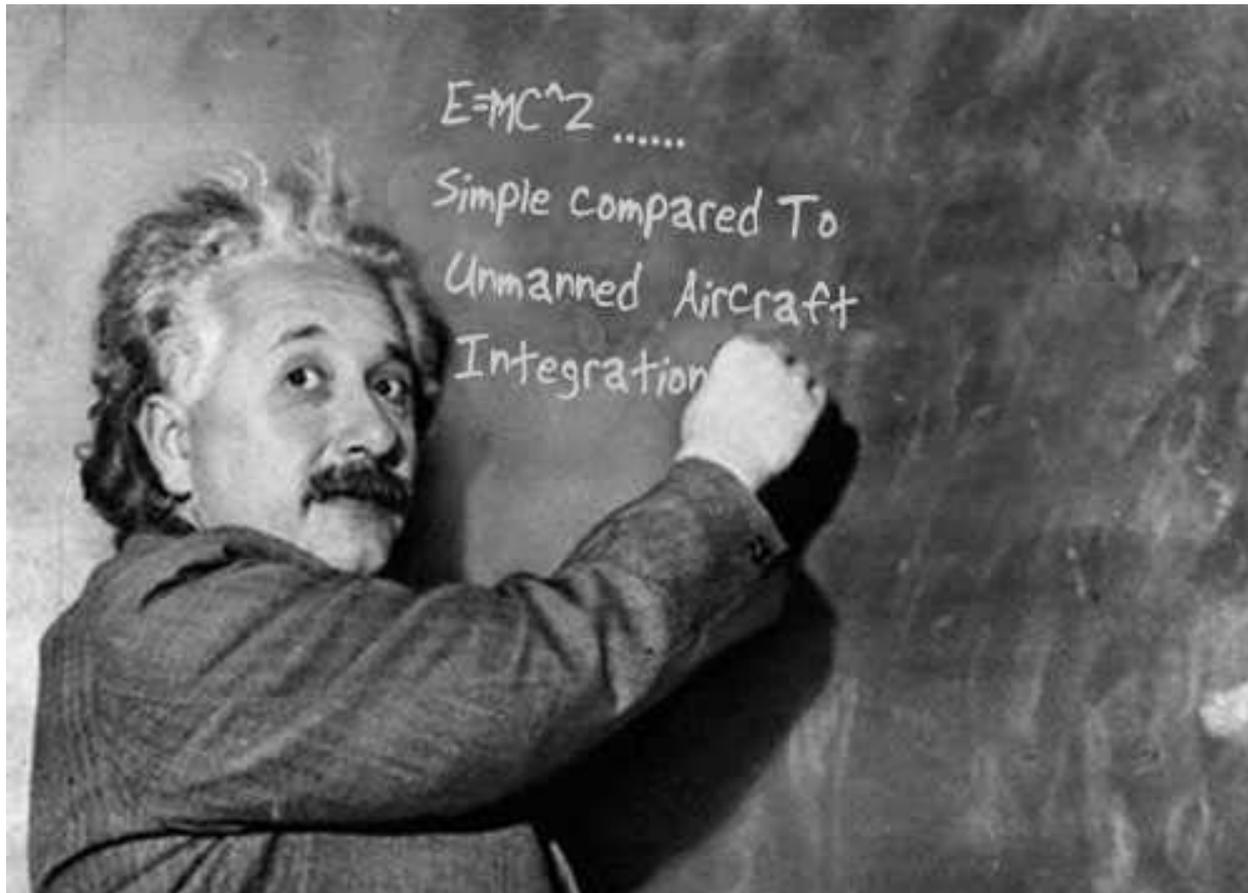


Law Enforcement Guidance

- **Role of state and local law enforcement**
 - Best position to respond quickly to public safety issues
 - Front line in detecting/reporting UAS violations
 - Generally in the best position to capture evidence and identify witnesses
 - Public interest best served by coordination and cooperation between FAA and state/local law enforcement

http://www.faa.gov/uas/law_enforcement/

Questions?



www.FAA.gov/UAS