

FAA Unmanned Aircraft Systems (UAS)

Update

Presented to: Shelly Hughes, Alaska House of
Representatives, UAS Task Force

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Alaska UAS Point of Contact

Date: September 19, 2014



Federal Aviation
Administration



UAS Integration Office, AFS-80

Single POC for All-Things UAS

- To promote UAS-NAS integration, the FAA established a new division-level organization reporting to the Director of Flight Standards
- Single executive focal point
- Matrixed organization that combined former Air Traffic and Flight Standards UAS offices
- Standup complete May 2013
- Sponsoring Office for all FAA UAS Research and Development
- Coordinates Certificate of Waiver or Authorization (COA) Process for all UAS Ops
- Publishes annual UAS Civil Integration Roadmap



FAA Vision for UAS Integration

Safe, efficient, and timely integration of UAS into the airspace

SAFE

Because safety is the FAA's primary mission

EFFICIENT

FAA is committed to reduce delays and increase system reliability

TIMELY

FAA is dedicated to supporting this exciting new technology

FAA Modernization and Reform Act of 2012 (FMRA) Requirements

- **UAS Comprehensive Plan**
 - Section 332; Completed November 7, 2013
- **Civil UAS Integration Roadmap**
 - Section 332; 1st Edition Completed November 7, 2013, 2nd Edition to be Published November 2014
- **UAS Test Sites**
 - Section 332; Selected December 30, 2013, All Operational August 2014
- **Section 333 Exemptions**
 - Section 333; First Petitions for Exemption Received June 2014
- **Arctic Small UAS Operations**
 - Section 332; Operations Commenced 2013
 - First over-water commercial operation (ConocoPhillips/Insitu): September 2013
 - First over-land commercial operation (BP/AeroVironment): June 2014
- **Small UAS Rule**
 - Section 332; Expected to be Published in the Federal Register for Comment (NPRM) by the End of 2014
- **Common Strategy for Law Enforcement**
 - Section 332; Developed and Implemented 2013/2014
- **Interpretation of the Special Rule for Model Aircraft**
 - Section 336; Published to the Federal Register on June 25, 2014, Public comment period ends 9/23/2014



UAS Test Sites



- **University of Alaska**
 - Includes test ranges in Hawaii and Oregon
 - Operational May 5, 2014
- **State of Nevada**
 - Operational June 9, 2014
- **New York Griffiss International Airport**
 - Includes test ranges in Massachusetts
 - 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)**
 - Includes test ranges in New Jersey (partnered with Rutgers University) and Maryland
 - Operational August 13, 2014

Petitions for Section 333 Exemption

- **42 companies have filed Petitions for Exemption based on Section 333***
 - Precision agriculture
 - Geospatial mapping
 - Flare stack monitoring
 - Shipping/delivery
 - Aerial film and photography
 - Real estate
- **Additional companies expected to submit Section 333 Petitions for Exemption in the coming weeks**

*as of September 17



Small UAS Rule

- **Required by Section 332 of the FMRA**
 - “... a final rule on small unmanned aircraft systems that will allow for civil operation of such systems in the national airspace”
- **Key initiative for introducing commercial UAS operations safely into the NAS**
 - Plan to release Notice of Proposed Rulemaking (NPRM) in late 2014
 - Small commercial UAS projected to be largest growth sector



Interpretive Rule

- **FAA published guidance after recent incidents involving the reckless use of unmanned model aircraft near airports and involving large crowds of people**
- **FAA issued the notice to provide clear guidance to model operators on the “do’s and don’ts” of flying safely in accordance with the 2012 FAA Reauthorization Act and to answer questions regarding the scope and application of the rules**
- **Clarifies:**
 1. **Model aircraft must satisfy the criteria in the Act to qualify as model aircraft and to be exempt from future FAA rulemaking action**
 2. **Consistent with the Act, if a model aircraft operator endangers the safety of the NAS, the FAA has the authority to take enforcement action against those operators for safety violations**
- **Posted to Federal Register on June 23; public comment period produced more than 30,000 comments so far. Comment period ends 9/23/2014**

<https://www.federalregister.gov/articles/2014/06/25/2014-14948/interpretation-of-the-special-rule-for-model-aircraft>



Education, Compliance and Enforcement

- **Interpretive Rule Communication Plan**
 - Immediate Actions
 - Press release/infographic
 - Guidance for Aviation Safety Inspectors and Air Traffic Control
 - Law enforcement outreach
 - Follow-on Actions
 - Continued partnership with Academy of Model Aeronautics (AMA)
 - Establish partnerships with:
 - Other agencies
 - Manufacturers/industry


http://www.faa.gov/about/initiatives/uas/model_aircraft_operators/

Hobby / Recreational Flying
What Can I Do With My Model Aircraft?

Having fun means flying safely! Hobby or recreational flying doesn't require FAA approval but you must follow safety guidelines. Any other use requires FAA authorization.

AVOID DOING ANYTHING HAZARDOUS TO OTHER AIRPLANES OR PEOPLE AND PROPERTY ON THE GROUND.

✓ DO fly a model aircraft/UAS at the local model aircraft club	✗ DON'T fly near manned aircraft
✓ DO take lessons and learn to fly safely	✗ DON'T fly beyond line of sight of the operator
✓ DO contact the airport or control tower when flying within 5 miles of the airport	✗ DON'T fly an aircraft weighing more than 55 lbs unless it's certified by an aeromodeling community-based organization
✓ DO fly a model aircraft for personal enjoyment	✗ DON'T fly contrary to your aeromodeling community-based safety guidelines
	✗ DON'T fly model aircraft for payment or commercial purposes




MODEL AIRCRAFT OPERATIONS LIMITS

According to the FAA Modernization and Reform Act of 2012 as (1) the aircraft is flown strictly for hobby or recreational use; (2) the aircraft is operated in accordance with a community-based set of safety guidelines and within the programming of a nationwide community-based organization; (3) the aircraft is limited to not more than 55 pounds unless otherwise certified through a design, construction, inspection, flight test, and operational safety program administered by a community-based organization; (4) the aircraft is operated in a manner that does not interfere with and gives way to any manned aircraft; (5) when flown within 5 miles of an airport, the operator of the aircraft provides the airport operator and the airport air traffic control tower...with prior notice of the operation; and (6) the aircraft is flown within visual line of sight of the operator.

For more information about safety training and guidelines, visit www.modelaircraft.org

For more information, visit www.faa.gov/go/uas



Federal Aviation Administration
www.faa.gov/uas

Education, Compliance and Enforcement

- **Defines authorized vs. unauthorized operations**
 - Authorized operations require: Certificate of Waiver or Authorization (COA), Airworthiness Certification, Issuance of Exemptions
 - Model Aircraft operations, as defined in Section 336(c) of the FMRA, as strictly for hobby or recreation purposes
- **Outlines actions for persons who operate:**
 - UAS in violation of the Federal Aviation Regulations (FARs)
 - Model Aircraft that endanger the safety of the NAS
- **Notice to Inspectors issued regarding how to use the Interpretive Rule (Notice 8900.268)**
- **Compliance and Enforcement Bulletin being published**

Arctic

- **FAA's Aircraft Certification Service (Los Angeles Certification Office) Issued UAS Type Certifications to Insitu and AeroVironment in July 2013**
 - Included in the Certification are specific, Special Purpose Operations
 - Aerial surveying (photography, mapping, and oil and mineral exploration)
- **First authorized UAS commercial ops**
 - Conoco Phillips/Insitu flew Scan Eagle on September 12, 2013
- **First overland authorized commercial ops**
 - AeroVironment/BP flew Puma AE on June 8, 2014
 - Additional operations in Prudhoe Bay, AK this summer
- **Other operations in summer 2014**
 - ConocoPhillips operations in the Chukchi Sea for marine mammal and ice surveys including joint ops with U.S. Coast Guard Icebreaker HEALY "Arctic Shield 2014" Oil Spill Response Exercise
 - University of Alaska received COA to conduct surveys in international waters for the Bureau of Oceans Energy Management (BOEM) and operated in September 2014



2014 Arctic Expansion Initiatives

Beyond Line of Sight

Commercial and Research

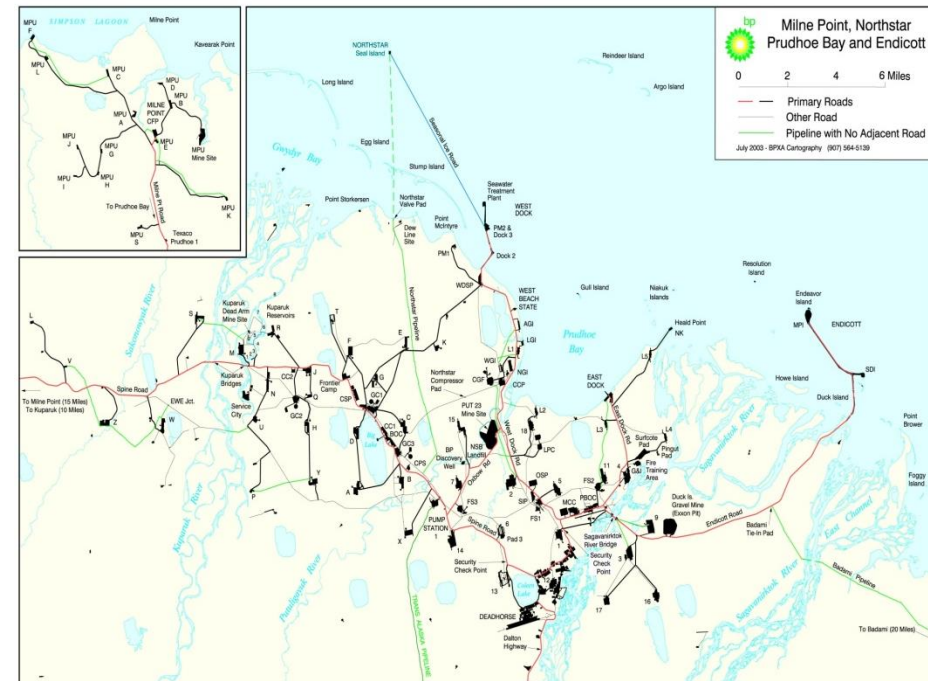
- **ConocoPhillips operations in the Chukchi Sea for marine mammal and ice surveys including joint ops with USCG STRATTON “Arctic Shield 2014” Oil Spill Response Exercise.**
- **AV Puma planning coastal oil spill response exercise, BP oil pipeline survey.**



Beyond Line of Sight – Arctic Operational Areas



Insitu/ConocoPhillips



AV Puma

USCG Chukchi Sea

- **USCG is developing a two year CRADA (Cooperative Research and Development Agreement) with ConocoPhillips for participation in oil spill response exercise “Operation Arctic Shield 2014” and 2015 ops. A Puma will also be flying from the USCG Cutter HEALY in August in the Chukchi Sea.**
- **Operated within International/Uncontrolled Airspace of the Anchorage Arctic Flight Information Region boundary**
- **Will include coastal launch site (Wainwright, AK) with offshore recovery**



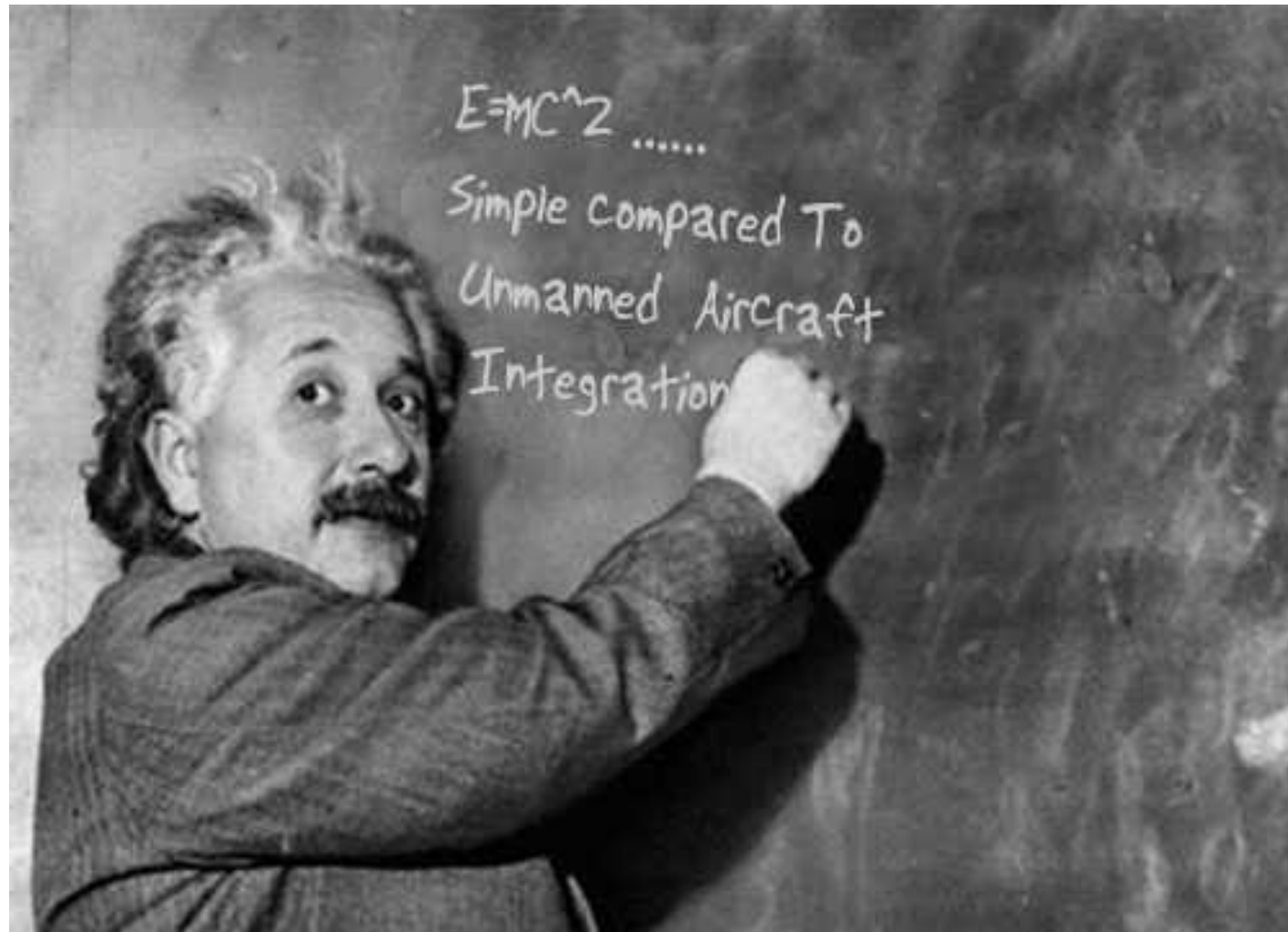
Arctic Monitoring Assessment Program (AMAP)

- Arctic Council hosted by U.S. next year to advance interests in the Arctic Region
- Strengthen International Cooperation with the eight polar nations and facilitate cross polar scientific UAS operations
- FAA Arctic Program Manager will be the UAS Expert Group Co-Chair



ARCTIC COUNCIL

Questions?

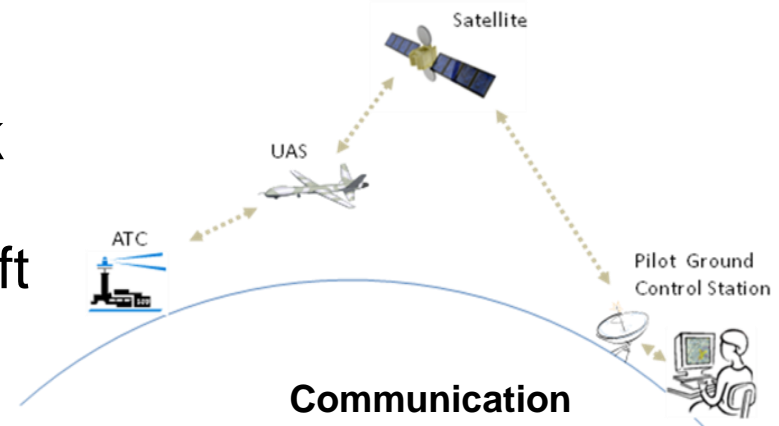


Backup



UAS Terms and Definitions

- **Unmanned Aircraft System**
 - Unmanned aircraft, control station and the command and control link used to connect the two
- **Unmanned Aircraft**
 - Aircraft that do not have the possibility of the pilot controlling the aircraft from on or in the aircraft
- **Control Station**
 - Where the pilot flies the aircraft
- **Command and Control Link**
 - Spectrum and associated equipment used to fly the aircraft from the control station



UAS Terms and Definitions (continued)

- **Lost Link**

- Loss of command and control link between control station and aircraft
 - Once link is lost the aircraft will no longer be able to follow ATC Instructions

- **Line of Sight Command and Control Link**

- Requires the pilot to be in close proximity of the aircraft (normal 150-nautical mile (nmi) max)

- **Beyond Line of Sight Command and Control Link**

- Satellite data link communications used to fly the aircraft anywhere in the world from the control station

- **Public Aircraft – Definition in Title 14, Code of Federal Regulations (14 CFR), part 1, does not allow for commercial operations**

- Owned by Government or at least on a 90-day lease
- Mission must be inherently governmental and in the best interest of the American people

Test Site Timeline

- **February 14, 2013: Solicitation for proposals from public entities**
 - Received 25 applications from 24 states
- **November 2013: Test site privacy requirements published**
- **December 30, 2013: Test sites awarded**
- **June 28, 2014: First test site must be up and running**
 - All six test sites are currently operational as of August 13
- **February 13, 2017: Test sites operations may conclude**
- **June 2017: Final report due to Congress within 90 days of the test site program conclusion**

Regulations

- **Private Recreational Use**
 - Interpretation of the Special Rule for Model Aircraft (June 2014)
 - Government agencies or commercial operators may never use
 - At or below 400'
- **Restricted/Warning Areas**
 - Active and approved for aviation (Hazardous) activity
 - Range Rules Apply
- **Public Aircraft: Certificate of Authorization or Waiver (COA)**
 - Managed at FAA Headquarters
 - Flight Standards Service (AFS)/Air Traffic Organization (ATO) publish a guidance document
 - Standard operations, requirements for safety case to support inability to comply with CFARs
 - Pilot/medical requirements
 - Any denial – requires Federal Aviation Executive Service AFS and ATO approval
- **Civil Aircraft: Special Airworthiness Certificate – Experimental Category (SAC-EC)**
 - Basically same operational requirements as COA, FAA determines airworthiness and assigns an “N” number
 - No operations for compensation or hire