

# Commercial Unmanned Aerial Systems(UASs)

## UAS types/roles

- UAS may take many forms



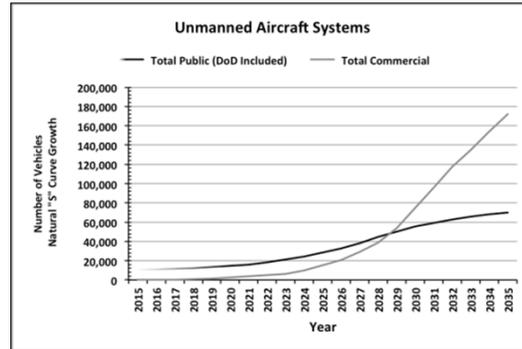
– Small UAS already in use for delivery of mail and medical supplies

- Certain applications will inherently require UAS with Category I range and payload capabilities
  - Larger cargo delivery UAS already under development by several companies



## Commercial Market

- The UAS market is projected to be worth approximately \$140 billion over the next 10 years



U.S. Department of Transportation forecast for the UAS market 2015-2035, showing commercial UAS systems outpacing others by 2028

## Barriers to Commercial Market

- Restrictions on transfers of MTCR Category I systems
- Industry reluctant to design aircraft suited for commercial applications that may be non-exportable
  - Due to design time for new aircraft, regulatory restrictions now are affecting aircraft that won't enter the market for 5-10 years
- Obtaining certification for flights in civilian airspace

## Current CCL Controls

- ECCNS 9A102 and 9A120
- Neither explicitly differentiate between Category I or Category II systems
- Both describe a wide variety of UASs of different characteristics and capabilities
- Strong Presumption of Denial for Category I Systems
  - Range-300km / Payload 500 Kg

## Licensing History

- From 06/2017 to 06/2019
- 69 total applications valued at \$475.8 million
- 57 Approvals
- 11 RWAs
- 1 Denial
- Majority of UASs are short range
  - < 200km with small payloads

## System requirements

- Certain end uses will require large UASs based on the areas they are to be used and the cargo to be carried



U.S. state of Alaska superimposed over Europe

Large UASs are necessary in territories such as in Alaska, which has a large area and is sparsely populated

## Cargo Delivery

- SF Express, one of China's largest logistics services, is developing UASs for cargo and emergency supply deliveries.
  - Emergency supplies have already been delivered by the internally developed UAS
  - Payload capability of 1200 kg



## Disaster Response - Firefighting

- Several companies are developing unmanned systems to deliver water or fire retardant



3000 kg payload system

**SELF-FLYING CHOPPERS FIGHT WILDFIRES SO HUMANS DON'T HAVE TO**

Boeing K-MAX helicopter  
2700 kg payload



## U.S. MTCR Proposal

- The United States has submitted a proposal to treat a certain subset of Category I UASs as Category II if they operate below a certain speed and don't incorporate certain Stealth technologies
- A primary driver for this proposed change is the widespread and expanding use of UASs in many areas, including commercial endeavors

## Status of U.S. Proposal

- Proposal has been discussed at both technical and policy level meetings
- Currently evaluating proposed minor technical fixes
- Currently evaluating additional transparency measures
- Certain partners have “public perception” obstacles to overcome

## Conclusions

- Exports of smaller UASs are growing, but they cannot fill every mission.
- Commercial Category I UAS are already a reality
- The United States has put forward a proposal to allow the flexibility to responsibly export these items
- This change is necessary for the MTCR to stay current and relevant
- If we do not act now, non-MTCR Partner countries including China and others will control this market and set the standards for commercial sales and uses