Today’s Briefing

• BVLOS ARC and Rulemaking Update
• UTM Projects Underway
• Recent Research
BVLOS ARC and Rulemaking

- ARC final report & recommendations
- Publish UTM Implementation Plan
- Publish UTM Conops v3.0
- Publish BVLOS/UTM NPRM
- Publish Final Rule

2021

2022

2023
UTM Projects

- UPP2 Progress Report and Final Report
- UTM Implementation Plan
- UTM Conops v3.0
- Technical Assists for UTM Services
• Density limits given altitude buffers
• Volumes didn't conform to ASTM 95% containment error bounds
• Lack of common altitude reference
• Limited ability of operators to respond to conflicts
• Human interface issues
• HITL response time issues
Recent Research
What is the safety benefit of using strategic deconfliction?
Safety Benefits of SD

• How good is strategic deconfliction at reducing UAS-UAS collisions?
• What happens when fewer operators participate?
• Are there densities at which strategic deconfliction isn’t needed?
• At what densities does it become essential?
Iterative Research Approach

• Using existing funding at JHUAPL
• Robust simulator (multiple USSs, any airspace region, explicit bounded assumptions)
• Determined need for baseline understanding – justify need (if any) for use of strategic deconfliction
Preliminary Baseline Results

- No strategic deconfliction
- Varying operational densities
  - (flights per day, 10 hours per day of ops)
- Synthetic 25km x 25km region – no airspace restrictions
- Random vehicle routes
- Average flight 10 minutes
- Thousands of Monte Carlo simulated flight hours
Preliminary Baseline Results

- If we do nothing, expect 10 MACs per year over a given city at just 52 total operations per day!
  - How many resulting lethalties?
  - What about public perception?
Next Simulation Scenarios

- Varying UAS participation in strategic deconfliction
- Incorporate operational intents
- More realistic airspace
- Add underlying population