To: Federal Aviation Administration (FAA)
Submitted Via: Regulations.gov
RE: Comments on the Notice of Proposed Rulemaking (NPRM) for Operations of Unmanned Aircraft Systems (UAS) Beyond Visual Line of Sight (BVLOS)

1 Introduction

On behalf of our research group and a multi-institutional effort funded by the NASA University Leadership Initiative, we respectfully submit these comments on the BVLOS NPRM. Our team's background includes extensive research and testing of sUAS operations, including flying sUAS swarms under a Part 107.35 waiver. Our comments are intended to be constructive, offering insights to help strengthen the final rule and ensure its successful implementation.

2 Recommendations to Strengthen the NPRM

Our research highlights several areas where the NPRM could be enhanced to better reflect the operational realities of UAS and to create a more robust and flexible regulatory environment. Below, we present our recommendations and supporting rationale.

2.1 Formally Incorporate Human-Machine Teaming and a Spectrum of Autonomy.

- **Recommendation:** The final rule should formally recognize a spectrum of autonomy, accommodating operations that rely on dynamic human-machine teaming in addition to those purely under the supervisory control of autonomous systems.

- **Rationale:** The NPRM's structure seems to presume near-total autonomy, replacing the "Remote Pilot in Command" with supervisory roles. However, many high-value BVLOS operations, particularly in public safety and emergency response, rely on a human pilot working collaboratively with autonomous systems to make critical real-time adjustments. The current rule creates a sharp divide between Part 107 (pilot-centric) and Part 108 (system-centric).

2.2 Enable Dynamic, Performance-Based Risk Mitigation.

- **Recommendation:** The FAA should establish a pathway for operators to use FAA-accepted safety systems to demonstrate an equivalent level of safety through dynamic risk mitigation, rather than relying on static risk classifications.

- **Rationale:** The NPRM's use of static population density categories is a sound, conservative starting point for risk assessment. However, this approach may unnecessarily restrict operations in areas where risk can be mitigated through technology and real-time data. A location categorized as high-density at noon on a weekday may be virtually empty at 3:00 AM on a Sunday. A dynamic, localized risk assessment model could analyze static maps and real-time data feeds to assess the actual ground risk at the specific time and location of a proposed flight.

2.3   Establish a Framework for 'Means of Compliance Testbed'

- **Recommendation :** The FAA should include a defined class of FAA-recognized testbed/incubator facilities, subject to certification, where performance tests are accepted as baseline data for corresponding 'Means of Compliance' (MOC).

- **Rationale:** The NPRM's performance-based safety standards require a clear and accessible pathway to generate the objective data needed to validate their systems. Standardized testing environments, modeled after government or academic proving grounds, could provide a scalable and cost-effective way for the industry to produce verifiable performance data.

We thank the FAA for the opportunity to comment on this landmark rulemaking. Our team is prepared to offer further details or data to assist the FAA in its vital work.