NUAIR

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Docket Operations, M-30
United States Department of Transportation
1200 New Jersey Avenue SE
Room W12-140, West Building Ground Floor
Washington, DC 20590-0001

**Re: Northeast UAS Airspace Integration Research Alliance, Inc. (NUAIR) Comments on the Federal Aviation Administration, Transportation Security Administration Notice of Proposed Rulemaking "Normalizing Unmanned Aircraft Systems Beyond Visual Line of Sight Operations" [Docket No. FAA-2025-1908]**

To Whom It May Concern:

Northeast UAS Airspace Integration Research Alliance, Inc. (NUAIR) appreciates the opportunity to comment on the Federal Aviation Administration (FAA) and Transportation Security Administration (TSA) notice of proposed rulemaking (NPRM) titled "Normalizing Unmanned Aircraft Systems Beyond Visual Line of Sight Operations."[1] Beyond visual line of sight (BVLOS) operations represent the next frontier in unmanned aircraft system (UAS or drone) operations. Proliferation of these operations will unlock vast economic and societal benefits for millions of Americans here in New York and across the nation. Thus, it is imperative that this rulemaking address the realities of large-scale drone operations and the needs of the industry while ensuring the safety and security of the National Airspace System (NAS).

Below, we provide background on NUAIR and the impact of this proposed rulemaking on our operations. We comment on areas of the proposed rulemaking that we endorse, as well as areas of the proposed rulemaking that we believe require adjustment. In particular, NUAIR believes changes to the automated data service provider (ADSP) framework under Part 146 are essential to eliminating regulatory redundancies and establishing standards that foster a safe and robust UAS Traffic Management (UTM) ecosystem.

## I. Background on NUAIR

NUAIR is a nonprofit organization based in Syracuse, New York, and is driving economic development through innovations in UAS and Advanced Air Mobility (AAM) in order to safely integrate this technology into the NAS. With support from Empire State Development and the State of New York, NUAIR supports the harmonization needed to innovate airspace and advance aviation for the next century of flight. With more than ten years of experience in UAS testing and validation, including managing operations at the New York UAS Test Site, supporting state and local economic development, and training public safety officials, NUAIR proudly drives airspace innovation in New York and advances mobility on a global scale. NUAIR also regularly

[1] Normalizing Unmanned Aircraft Systems Beyond Visual Line of Sight Operations, 90 Fed. Reg. 38212 (proposed Aug. 7, 2025) [hereinafter BVLOS NPRM].

collaborates with private, state, federal, and military partners to test UAS flights against various counter-UAS detection technologies in support of public safety and national security.

NUAIR has long been a leader in BVLOS operations, managing a 240-square-mile, highly instrumented airspace in Central New York under a Part 107 sUAS-agnostic BVLOS waiver.[2] To date, NUAIR has conducted over 6,000 BVLOS flights in controlled airspace in support of its safety infrastructure and scaling of the industry. Recently, as detailed in Section II.A *infra*, NUAIR was granted a Letter of Acceptance (LOA) from the FAA to provide its surveillance-as-a-service infrastructure for routine BVLOS operations.

If properly tailored, a BVLOS rulemaking would revolutionize the drone industry and create significant demand for automated data services provided by NUAIR and other industry stakeholders. The economic and societal benefits are substantial: enabling cost-effective, scalable drone-as-a-first-responder operations for our nation's 17,000 law enforcement agencies and 28,000 fire departments, while facilitating urgent medical delivery services for over 6,000 hospitals across the United States. These applications represent millions of potential flight operations that would directly benefit from the surveillance-as-a-service capabilities that ADSPs can provide under Part 146.

NUAIR anticipates seeing significant demand for its UAS testing and validation program as UAS technology evolves to meet the increased operational requirements brought about by large-scale BVLOS operations. The transition from limited waiver-based operations to routine commercial deployment will require extensive validation of new aircraft types, sensor configurations, and operational procedures—creating substantial demand for testing infrastructure like NUAIR's 1900-square-mile instrumented airspace.

## II. Impact and Suggestions Regarding NPRM

NUAIR broadly supports comments submitted by the Commercial Drone Alliance (CDA) in response to this proposed rulemaking. In particular, we endorse the CDA's comments in the following areas:

(1) Reducing burdensome recordkeeping requirements for both operators and manufacturers;

(2) Realigning the population density construct to reflect realistic operational mitigation strategies;

(3) Requiring electronic conspicuity for all manned aircraft below 500 feet above ground level (AGL);

(4) Removing burdensome TSA vetting and limited security program requirements; and

(5) Scaling operating models through permits and certificates.

In addition to support for CDA's comments, NUAIR commends the FAA and TSA on multiple aspects of the NPRM. The performance-based nature of the rulemaking properly addresses risk while avoiding unnecessary regulatory burdens that do not yield tangible safety benefits. NUAIR also appreciates the rule's leveraging of industry standards to encourage stakeholder

[2] *See* Waiver No. 107W-2025-00393.

collaboration and drive innovation. Further, NUAIR supports the proposal to regulate ADSPs under Part 146, as it provides much-needed clarity and a robust regulatory framework for these essential services and their providers.

NUAIR offers the following suggestions for areas of improvement:

A. Tailoring Service Provider Standard Orders (SPSO) to Available Services

The current Service Provider Standard Orders (SPSOs) included as appendices in the proposed Advisory Circular (AC) 146-1, "Automated Data Service Provider Certification and Service Authorization," are limited to only two types of services: strategic deconfliction and conformance monitoring. While these services are certainly critical to large-scale BVLOS operations, they do not encompass the full range of capabilities that ADSPs will offer under Part 146 to ensure a safe and secure UTM ecosystem. Other essential services, such as surveillance-as-a-service, must also be addressed in the SPSOs to support the scaling of BVLOS operations and optimize the safety and efficiency of the NAS.

SPSOs play a vital role in providing ADSPs with clear, defined standards for service authorization applications to meet requirements outlined in § 146.205. By offering specific guidance, SPSOs streamline the application process, reducing the workload for both ADSPs and the FAA. This efficiency accelerates the approval of services, enabling ADSPs to meet the growing demand for BVLOS operations while maintaining high safety and compliance standards. Conversely, the absence of comprehensive SPSOs would hinder the ability of ADSPs to scale their operations, impose unnecessary financial burdens, and delay the deployment of critical UTM technologies.

A key service that should be included in the SPSOs is surveillance-as-a-service. This service enables ADSPs to provide advanced surveillance networks that enhance situational awareness and traffic deconfliction for UAS operators. By offering a comprehensive view of lower-level airspace, surveillance-as-a-service ensures the identification of both cooperative and non-cooperative aircraft, bolstering public confidence in the safety, compliance, and transparency of UAS operations. For commercial entities interested in employing UAS as part of their operations, surveillance-as-a-service allows them to leverage a pre-approved safety case for their operations.

NUAIR's recent LOA through the FAA's Near-Term Approval Process (NTAP) demonstrates the feasibility and value of surveillance-as-a-service, and provides a model for the FAA to follow in developing an SPSO.[3] Including an SPSO for surveillance-as-a-service in AC 146-1—along with SPSOs for other critical services—would ultimately streamline the service authorization process and accelerate the scaling of BVLOS operations nationwide. To ensure the success of Part 146 and the broader UTM ecosystem, NUAIR strongly recommends that the FAA expand the scope of SPSOs in AC 146-1 to include surveillance-as-a-service and other critical services provided by ADSPs.

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[3] *See* Press Release, NUAIR, *NUAIR Receives FAA Letter of Acceptance for Surveillance-as-a-Service, Opening a New Era in Drone Infrastructure* (Jul. 31, 2025), https://www.nuair.org/post/nuair-receives-faa-letter-of-acceptance-for-surveillance-as-a-service-opening-a-new-era-in-drone-in.

Finally, NUAIR recommends that the FAA define a clear transition plan for those service providers that have already completed the NTAP and received an LOA, and whose services will be eligible for authorization under Part 146. This information could be contained within AC 146-1, as it will necessarily have a shelf-life. In implementing this recommendation, we strongly urge that this defined transition plan clearly specify what elements of Part 146 would not have been required in the NTAP, and that the FAA will limit its review of services to those elements not already reviewed through the NTAP. These NTAP-approved service providers offered the FAA valuable experience in reviewing automated data services and ultimately contributed learnings to both the rule and the FAA's workforce. Ensuring a smooth transition from NTAP to Part 146 must not duplicate the regulatory review and burden on NTAP-approved service providers, who are industry leaders and innovators that should not be punished for investing early by undergoing the same review multiple times.

B. Preventing Regulatory Redundancy for ADSPs

To avoid overburdening ADSPs with redundant regulations, NUAIR recommends the FAA provide clear guidance to its workforce that surveillance-as-a-service and other UTM services that help mitigate risk of collision are not subject to restrictions under Part 87 and Part 90. It is critical to avoid imposing standards which govern traditional aviation services on Part 146 services. NUAIR strongly urges the FAA to clarify that ADSPs authorized under Part 146 are not subject to regulation under 47 CFR Parts 87 and 90. These legacy frameworks were never intended to govern federated, data-driven UTM services and their application here would create duplicative oversight without improving safety.

Part 87 regulates aviation services in support of air traffic control, pilot communications, and radionavigation. Part 90 governs land mobile and radiolocation services for non-aviation entities. Neither framework contemplates low-altitude, federated information services such as surveillance-as-a-service, conformance monitoring, or strategic deconfliction that are fundamental to Part 146. Applying Parts 87 and 90 would risk classifying UTM functions as either radionavigation or radiolocation, imposing requirements that are both operationally irrelevant and technologically misaligned. A requirement to comply with multiple legal frameworks would create operational contradictions that undermine safety without providing regulatory clarity. Currently, NUAIR's surveillance systems integrate multiple data sources—including radar, and other passive sensors—to provide comprehensive situational awareness. However, existing regulations force artificial distinctions between these integrated data streams: radar components fall under Part 90 restrictions that prevent UAS navigation applications, while other sensor data lacks clear regulatory classification entirely. This piecemeal approach forces operations under Part 87's relay-dependent framework, where integrated surveillance information must be transmitted to remote pilots for manual decision-making rather than enabling direct automated deconfliction.

Part 90 was created prior to UAS operations and focuses narrowly on individual radar systems, failing to contemplate modern multi-sensor fusion architectures essential for UTM services. As BVLOS operations scale toward fully automated detect-and-avoid capabilities, the FAA will need regulatory frameworks that evaluate the integrated safety performance of multi-sensor systems, not fragmented compliance with technology-specific legacy rules designed for single-sensor applications.

These multi-sensor technologies are essential for detecting non-cooperative aircraft, as a large portion of Department of Defense (DOD) and General Aviation aircraft lack electronic conspicuity equipment. NUAIR has successfully demonstrated these integrated capabilities supporting our BVLOS operations since 2017 with over 6,000 UAS flights in controlled airspace, proving the safety value of comprehensive automated systems over current fragmented regulatory approaches.

Importantly, the FAA has already recognized the distinction in related proceedings. In its proposal for Part 88 (UAS communications), the FAA explicitly noted that Part 87 should not apply to UAS command-and-control communications.[4] The same rationale applies here: duplicating legacy regulatory frameworks would inhibit innovation, add costs, and disincentivize early adopters without yielding proportional safety benefits.

Rather than forcing UTM services into these incompatible regulatory frameworks, the FAA and FCC should either: (1) exempt Part 146 ADSPs from Parts 87 and 90 requirements entirely, allowing integrated multi-sensor systems to be evaluated holistically under Part 146's performance-based standards; or (2) modernize Parts 87 and 90 to explicitly accommodate integrated UAS surveillance and automated deconfliction services. This approach is consistent with the FAA's stated intent in the NPRM—to establish a risk-based, performance-oriented structure that enables scalable BVLOS operations while avoiding the over-extension of outdated regulations.

C. Integrating Multi-Sensor Configurations under Part 146

NUAIR recommends that the FAA explicitly authorize the use of multi-sensor configurations under Part 146—including radar, electro-optical, infrared, and video surveillance technologies—and confirm that these configurations are not subject to legacy requirements under Parts 87 and 90. Incorporating multi-sensor configurations into Part 146 ensures ADSPs can deliver the layered surveillance essential for safely scaling BVLOS operations.

This recommendation is consistent with the FAA's preliminary conclusion in the NPRM that aircraft traffic management for BVLOS operations under proposed Part 108 is "fundamentally distinct and separate from traditional ATM."[5] For traditional aviation, FAA controllers directly manage separation through communications with pilots, ensuring safe and efficient flow in terminal and en route airspace. By contrast, for BVLOS operations, the FAA has recognized that this traditional model is not proportional to the lower level of risk introduced into the NAS. Instead, the FAA has placed operational and airworthiness requirements on UAS to mitigate risks and has

[4] *See* Spectrum Rules and Policies for the Operation of Unmanned Aircraft Systems, 90 Fed. Reg. 1380, 1382 (Jan. 8, 2025) ("The Commission will include UAS-related rules for the 5030-5091 MHz band in a single rule part and place such rules in a new part 88, rather than placing the new rules in part 87. Establishing a new part 88 will promote 'clarity and ease of reference' regarding the rules applicable to UAS operations in the 5030-5091 MHz band. The Commission also makes the new part 88 subject to rules under part 1, subpart F of the Commission's rules governing 'Wireless Radio Service' applications and proceedings.")

[5] BVLOS NPRM at 38321.

proposed a framework where ADSPs furnish the information necessary for operators to safely deconflict their flights.

In this context, multi-sensor architectures are not an extension of traditional ATC communications (Part 87) or radiolocation services (Part 90). Rather, they are information services within a federated UTM network, providing situational awareness that allows UAS operators to manage their own operations safely and efficiently. Imposing Parts 87 or 90 would incorrectly classify these information services under outdated categories, creating regulatory overlap without any corresponding safety benefit.

In contrast, including multi-sensor configurations within the scope of Part 146 ensures that ADSPs can provide the layered surveillance necessary for large-scale BVLOS operations. By leveraging radar alongside video or thermal imaging, ADSPs can identify both cooperative and non-cooperative aircraft, enhance redundancy, and build public trust in UAS integration. Clear guidance confirming that such configurations fall solely under Part 146 would both streamline the FAA's review process and align with the NPRM's risk-based approach.

D. Allocating Sufficient Spectrum Resources to Support Large-Scale BVLOS Operations

NUAIR recommends that the FAA, in coordination with the Federal Communications Commission (FCC) and National Telecommunications and Information Administration (NTIA), ensure that sufficient and appropriate spectrum resources are allocated to support BVLOS operations under Part 108. Spectrum availability is foundational to the success of automated data services, and clarity is urgently needed to avoid fragmentation, interference, or duplicative regulation.

Part 88 has already established the principle that UAS communications require a tailored regulatory approach distinct from legacy aviation services under Part 87. The FAA should apply this same logic in the implementation of Part 146, ensuring that the communications and data-exchange functions essential to ADSPs are not forced into outdated frameworks. Instead, the FAA should work closely with the FCC to ensure that both licensed and shared spectrum resources are made available to support UTM operations.

Spectrum is an extremely limited resource, making optimum utilization of available spectrum vital to the success of large-scale BVLOS operations. ADSPs will require flexible access to spectrum resources to support diverse UTM functions—from real-time sensor data transmission to automated deconfliction communications—that cannot be efficiently accommodated within the narrow allocations designed for traditional aviation services. Without coordinated spectrum planning that recognizes the unique needs of federated UTM systems, spectrum scarcity could become a critical bottleneck, limiting the scalability of Part 146 services.

Unpredictable access to spectrum will cause ADSPs to face uncertainty in delivering critical services such as surveillance-as-a-service, deconfliction, and conformance monitoring. This uncertainty threatens to delay investment and deployment at precisely the moment when BVLOS operations are ready to scale. In contrast, a coordinated FCC/FAA framework that secures reliable spectrum access will accelerate industry adoption, reduce the compliance burden on operators, and directly advance the FAA's risk-based model under Part 108.

## III. Conclusion

NUAIR appreciates the opportunity to comment on FAA and TSA's NPRM normalizing UAS BVLOS operations. We look forward to collaborating with the FAA and TSA to shape a final rule that supports the domestic drone industry and enables large-scale BVLOS operations for the benefit of the American public.

Respectfully submitted,

NUAIR