The BVLOS Rulemaking: Performance-Based Drone Operations in U.S. Airspace

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Introduction: Normalizing BVLOS Operations

The Federal Aviation Administration (FAA), in partnership with the Transportation Security Administration (TSA), issued a comprehensive Notice of Proposed Rulemaking (NPRM) that charts a new regulatory path for Unmanned Aircraft Systems (UAS) operations beyond visual line of sight (BVLOS). This performance-based NPRM, summarized here from more than 700 pages, outlines transformative rules enabling both commercial and recreational drones to safely and routinely fly BVLOS at low altitudes—generally below 400 feet above ground level (AGL)—and establishes frameworks for third-party services such as UAS Traffic Management (UTM).

Embracing Performance-Based Regulations

Key Points:

- Performance-based UAS regulations support innovation and adaptive airspace integration.
- BVLOS flexibility expands commercial and recreational drone applications.

From Prescriptive to Outcome-Oriented Frameworks

The FAA's proposed approach shifts from rigid, prescriptive limitations to performance-based regulations. This evolution allows drone operators and manufacturers greater flexibility to adopt emerging technologies, tailor solutions to evolving needs and maintain or enhance safety and efficiency across UAS operations.

TSA's Role: Ensuring Security in Expanded Ops

Security Framework in the Joint NPRM

The NPRM features significant contributions from the TSA, which is actively revising its own regulations to prevent security gaps as BVLOS operations are brought under FAA's expanded part 108. Developed collaboratively, these new rules aim to maintain national airspace security alongside rapid UAS integration. Ultimately, FAA and TSA plan to issue **separate but harmonized final rules** to manage their respective spheres—FAA for operational safety, TSA for security.

Key Points:

- TSA's rulemaking ensures security requirements are synchronized with FAA safety standards.
- The NPRM includes a request for public comment regarding how security program requirements should apply, especially for package delivery and other UAS activities.

Risk Assessment & Mitigation: LandScan USA

To underpin operational safety, the FAA proposes using **LandScan USA** population data (developed by Oak Ridge National Laboratory) as the authoritative reference for assessing risk when operating over populated areas.

This benchmark supports:

- **Data-driven categorization** of operations based on population density.
- **Implementation** of both technological and operational requirements tailored to risk levels.
- **Enabling complex operations** with demonstrable safety controls in more densely populated environments.

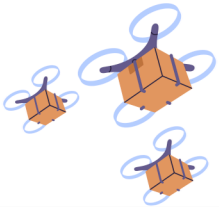
Proposed Regulatory Structure Under Part 108

Permits and Certificates: Tailoring Oversight to Risk

FAA's proposed part 108 introduces a two-tiered risk management system for BVLOS operations:

- **Operating Permits:** Designed for smaller-scale or lower-risk operators. These may be issued efficiently with oversight proportional to operational complexity.
- **Operating Certificates:** Required for larger-scale or higher-risk operators—such as those planning larger fleets or operations over populous areas. Certificate holders face heightened requirements, including additional FAA oversight.

All operators under part 108 must comply with general operating rules, preflight requirements and mission-appropriate BVLOS regulations. Compliance is mandated whether operating under an FAA-issued permit or certificate, with further subdivision into subpart D (permits) and subpart E (certificates).



Section IV: FAA's Integrated Approach to BVLOS UAS Operations

Aircraft & Personnel: Advanced UAS Missions

To accelerate the normalization of BVLOS drone flights, the FAA's NPRM Section IV introduces dynamic new mechanisms for both aircraft and personnel authorization under Part 108.

1. Aircraft Authorization: Flexible Certification Standards

- Part 108 sets out innovative pathways for aircraft authorization, moving away from a one-size-fits-all certificate and enabling reliability through tailored operational approvals.
- UAS design and performance must address structural integrity, flight stressors, software and hardware reliability and safe operational limits.
- Airworthiness acceptance requires that all UAS remain fit for safe operation and equipment is properly installed and functional except for limited flight test exemptions.
- Manufacturers play a direct role in continued operational safety and must maintain access to design data for repairs or alterations to ensure compliance.

2. Personnel Authorization: From Remote Pilot-In-Command to Corporate Accountability

- FAA shifts responsibility for operational safety from the individual Remote Pilot in Command (RPIC) to the organizational and managerial level.
- Flexible company-based approaches now guide duty assignments and training, with a **required operations supervisor** responsible for overall regulatory compliance and mission safety.
- The supervisor must fully understand relevant regulations, company policies and aircraft-specific requirements.
- **Flight coordinators** must not be assigned more aircraft than can be safely managed under normal and emergency conditions.
- All personnel involved in BVLOS operations must undergo comprehensive knowledge and **skills training** covering relevant operational regulations, limitations and requirements.

3. Third-Party Service Suppliers: Enabling Scalable UAS Ecosystems

- Under Part 146, the FAA proposes a new framework for third-party service suppliers—entities providing critical support such as distributed software capabilities or UAS Traffic Management (UTM) systems.

- Certificated service providers may rely on third-party vendors, even when those vendors are outside direct organizational control (e.g., external software or operational platforms), as long as overall compliance and safety requirements are met.

A Scalable & Shared Airspace Environment

- Strategic deconfliction, remote identification, shielded operations near obstacles and multi-aircraft allowances build the technical and procedural foundation for a shared, dynamic national airspace.

- Emerging BVLOS operations can be authorized simultaneously at different locations, with robust safety and oversight protocols.

- The proposed transition will phase current waiver-dependent drone missions (in agriculture, package delivery, surveying, etc.) into regulated BVLOS operations under Part 108 as exemptions expire, streamlining the path for advanced commercial drone services.

Section V: Detailed Regulatory Requirements for BVLOS Drone Operations Under Part 108

Overview of Applicability and Exemptions

- FAA Part 108 requirements apply to any person wishing to conduct BVLOS UAS operations in the National Airspace System (NAS).

- Operators conducting flights under 14 CFR Part 107 or Part 91, or under the recreational flyer provisions of 49 U.S.C. 44809, are exempt from these new rules.

- Agricultural, package delivery, aerial surveying, and flight testing operations currently handled via waivers or exemptions under Parts 107, 91, or 135 are expected to transition into regulated operations under Part 108 as existing exemptions expire.

Operators: Principal Base & Contact Info

- Each operator must maintain a principal base of operations in the U.S. and provide a physical address for FAA contact (§§108.30(a)-(b)), though operations may occur at other authorized locations.

- Recreational operators only need to submit a physical address, not a formal base (§108.475(f)(3)).

Airspace and Operational Framework

- **Strategic Deconfliction:** New requirements and changes to right-of-way rules and Remote ID performance set the stage for dynamic, shared airspace operations, enabling BVLOS flights near obstacles ("shielded operations") and multi-aircraft missions.

- **Airspace Designations:** Operations at or below 400ft AGL in controlled airspace (Class B/C/D), or within the lateral boundaries of Class E airspace for airports, can occur without waivers unless designated by FAA as areas requiring specific authorization (§§108.180(a)-(d)).

- **Right-of-Way:** UAS operating under Part 108 must yield to aircraft broadcasting ADS-B Out positions, especially those arriving or departing airports (§108.195(a)).

Personnel and Training Standards

- **Operations Supervisor:** Companies must designate a supervisor responsible for overall safety, compliance and the adequacy of personnel training (§108.305(c)(1)).

- **Flight Coordinator Limits:** No flight coordinator may manage more UAS than they can safely handle, as assessed by FAA-approved standards (§108.210(b)).

- **Authorization and Qualification:** Only those qualified and authorized by the operator may direct UAS flights (§108.310(b)).

- **Comprehensive Training:** All operations personnel require up-to-date training on regulations, including UA speed, altitude, equipment requirements, and safe operation over people or in controlled airspace (§108.315(b)(1)).

Operational Categories and Permits Table

Permit Type	Max Weight	Operation Size	Max Pop'n Density	Additional Limitations
Package delivery	55pounds	100 aircraft	Cat 3	No hazmat
Agricultural	1,320pounds	10 aircraft	Cat 1	No dispensing over people
Aerial surveying	110pounds	25 aircraft	Cat 3	NA
Civic interest	110pounds	25 aircraft	Cat 3	Must be under government contract
UA ops training	1,320pounds	10 aircraft	Cat 1	NA
Demonstrations	110pounds	50 aircraft	Cat 2	NA
Flight test	1,320pounds	No Limit	Cat 1	NA
Recreational	55pounds	1 aircraft	Cat 3	

Security, Cargo and Specialized Operations

- **Cargo Control:** Operators must prevent the carriage of explosives/incendiaries, designate a corporate security coordinator and implement control functions/inspections per TSA security program requirements.
- **Agricultural Operations:** Separate agricultural permits required for operations involving seeding, spraying or other crop activities; with required training on chemical handling and emergency response (§§108.445(a), 108.445(i)).
- **Recency & Ongoing Training:** Requirements for ongoing operational recency and designated personnel to assure continuous staff training (§§108.530, 108.540(d)).
- **Flexibility for Sole Operators:** Sole certificate holders performing all functions are exempt from multiple Part 5 requirements (§108.560(b)).
- **Comprehensive Training:** All operations personnel require up-to-date training on regulations, including UA speed, altitude, equipment requirements, and safe operation over people or in controlled airspace (§108.315(b)(1)).

Maintenance and Safety Oversight

- Operators must ensure maintenance procedures follow manufacturer instructions (§108.610(a)).
- Manufacturers remain responsible for maintaining operational safety and must access design data for all repairs and alterations (§§108.740-108.750).

Third-Party Vendors and Service Levels

- **Third-Party Vendor Definition:** Entities providing distributed software capabilities crucial for compliance, even without direct control by the service provider.
- **Service Levels Table:**

Service Level	Type of Part 108 Ops
Level 1	Services supporting Part 108 operations without regulatory relief
Level 2	Services supporting Part 108 operations with regulatory relief
Level 3	Services supporting non-Part 108 operations

Summary of Key Part 108 Sections

- ☐ **§108.1:** Applicability of requirements for BVLOS in NAS
- ☐ **§§108.30(a)-(d):** Principal base and physical contact requirements
- ☐ **§§108.180(a)-(d):** Airspace authorization and operational allowances
- ☐ **§108.195(a):** Right-of-way compliance for BVLOS operations
- ☐ **§108.210(b):** Limits on flight coordinator responsibilities
- ☐ **§108.305:** Operations supervisor qualifications and duties
- ☐ **§108.310:** Authorization for flight coordination
- ☐ **§108.315:** Personnel knowledge and skills training
- ☐ **§§108.445(a), 108.445(i):** Permitting and training for agricultural ops
- ☐ **§108.530:** Recency requirements
- ☐ **§108.540:** Designated person(s) responsible for training
- ☐ **§108.610:** Maintenance standards and responsibilities
- ☐ **§§108.740, 108.750:** Manufacturer safety responsibilities
- ☐ **§108.560(b):** Exceptions for sole operator functions
- ☐ **Part 146:** Third-party service supplier framework

Section VI: Operational Rules, Airspace Integration, Safety & Special Operations Under Part 108

Strategic Deconfliction & Dynamic Integration

- **Strategic Deconfliction (Section VI.I):** The NPRM introduces robust frameworks to enable safe BVLOS operations in controlled airspace and over people. This relies on advanced UAS technology for detection and avoidance of manned and unmanned aircraft, and procedural requirements for maintaining separation, especially in densely populated airspace.

- **Dynamic Shared Environments:** Operators are empowered to use evolving detection-and-avoid systems and real-time airspace management, including UAS Traffic Management (UTM) services approved under Part 146.

Changes to Right-of-Way Rules & Remote ID

- **Right-of-Way (Section VI.J):** The NPRM revises right-of-way rules requiring UAS to yield to any aircraft broadcasting their position via Automatic Dependent Surveillance-Broadcast (ADS-B) Out, with particular deference to arrivals/departures at airports or heliports per §108.195(a).

- **Remote ID Performance (Section VI.K):** All UAS operating under Part 108 are required to comply with new Remote Identification (Remote ID) standards, allowing for real-time identification, enhancing situational awareness and supporting law enforcement and security agencies.

Shielded Ops & Multiple Aircraft Missions

- **Shielded Operations (Section VI.L):** The proposed rules permit BVLOS flights within 50ft of obstacles, structures, or designated operational areas without further authorization, provided safety protocols are maintained. This expands operational flexibility for infrastructure inspection, close-proximity surveys, and urban operations.

- **Multi-UA Operations (Section VI.M):** Operators may conduct missions with multiple unmanned aircraft simultaneously, subject to operational oversight and flight coordination limits, ensuring the number of UA managed does not exceed safe thresholds (§108.210(b)).

Airworthiness Acceptance & Equipment Stds

Robust Design and Maintenance Requirements:

- The airworthiness framework addresses all critical factors—structural integrity, software/hardware reliability and operational stresses.
- For safe operation, UAS and airborne equipment (AE) must be maintained in a safe condition, with flights prohibited if any deficiencies are known or suspected (§108.120(a)).
- Instrumentation and equipment must be properly installed and operational for all BVLOS flights, with strict exception only for certain permitted flight-test operations (§108.120(c)).
- Maintenance must follow manufacturer-prescribed methods, and continued safety oversight is required from manufacturers as well as operators (§§108.610; 108.720; 108.740–108.750).

Airspace Designation and Authorization

- **Controlled Airspace Access:** Operations up to 400ft AGL are permitted in Class B, C, and D airspace, and in lateral boundaries at airports designated as Class E—except for specific areas that the FAA requires airspace authorization (§§108.180(a)(c)(d)).
- **Interference Avoidance:** Operations are structured to avoid interference with airport traffic; UAS must yield right-of-way as described and steer clear of critical flight paths.

Ops Cert, Training & Corporate Accountability

From RPIC to Corporate Oversight:

- Safety responsibility is shifted from the individual Remote Pilot in Command to company-level, with an operations supervisor designated for overall compliance and safety.
- Operations supervisors must be thoroughly versed in regulations and company policy (§108.305(c)(1)).
- Only qualified and authorized personnel may direct UAS missions (§108.310(b)).
- All personnel must be trained in UA limitations, equipment requirements, controlled airspace procedures, and safety operations (§108.315(b)(1)).
- Training recency and ongoing qualifications for staff (§108.530; §108.540(d)).

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- Training recency and ongoing qualifications for staff (§108.530; §108.540(d)).

Specialized Ops: Cargo, Security, Ag & Demos

Cargo and Security

- **Cargo Handling:** Strict regulations require controlling cargo to prevent carriage of explosives, incendiaries, or other destructive items.
- A Security Coordinator must be designated at the corporate level to liaise with TSA and ensure all security protocols are followed.
- Security inspections are mandatory if access has not been controlled per the operator's security program.

Agricultural Operations

- **Permit and Training Requirements:** Agricultural BVLOS missions (aerial seeding, spraying, fertilizing, pest control) require a specific agriculture permit (§108.445(a)). Operators must train personnel in safe handling/storage/disposal of chemicals, effects on plants/animals/humans, precautions, emergency measures, poison control locations, and safe flight/application procedures (§108.445(i)).
- No agricultural dispensing over people is permitted unless explicitly authorized.
- Operations limited to 10 active aircraft unless otherwise authorized (§108.460(c)).

Demonstrations and Civic Interest

- **Limits and Permissions:** Demonstration flights, civic interest missions (such as for government contracts) and training all have separate size, density, and weight limits as detailed in the operational permit table.

Maintenance and Manufacturer Responsibility

- Operators must ensure maintenance adheres to manufacturer requirements, using prescribed methods, techniques and practices (§108.610(a); §108.720(a)).
- Manufacturers are responsible for continued safety, including providing access to repair and alteration data to preserve design integrity (§§108.740; 108.750).

Key Regulatory Sections for BVLOS Operations

- **§108.1:** Applicability and coverage in NAS
- **§108.30:** Base of operations and contact requirements
- **§§108.120, 108.180, 108.195, 108.305, 108.310, 108.315:** All critical operational, personnel, and safety requirements
- **§§108.445, 108.460, 108.530, 108.540, 108.610, 108.720, 108.740–108.750:** Special operations, training, maintenance, manufacturer responsibility
- **Part 146:** Framework for third-party UAS service providers

Section VII: Transition Provisions, Legacy Operations & Implementation Under Part 108

Transition: Existing Rules|Waivers to Part 108

As the FAA moves to establish Part 108 for BVLOS operations, existing waivers and exemptions under Part 107, Part 91, or Part 135 will eventually expire and their operators are expected to transition into the new Part 108 framework. This includes key sectors such as agriculture, package delivery, flight testing, aerial surveying, and photography. The transition timeline and process will be managed to ensure operational continuity for legacy missions while bringing them under updated oversight and safety standards—minimizing disruption but maximizing harmonization with the new performance-based regulatory goals.

Applicability and Exceptions

- **Applicability (§108.1):** Part 108 applies to any BVLOS operation within the NAS, unless specifically excluded.

- **Exceptions:** Operators who choose to conduct UAS flights under 14 CFR Part 107, Part 91, or under recreational flyer provisions (49 U.S.C. 44809) are not subject to Part 108.

- **Transition for Waivered Operations:** When applicable waivers and exemptions expire, operators will transfer into Part 108 after a reasonable adjustment period determined by the FAA.

Management of Bases and Physical Locations

- All operators under Part 108 are required to establish a principal base of operations in the United States and provide a physical address to the FAA, serving as the main contact location (§§108.30(a)-(b)).

- Recreational users only need to provide a physical address, not a formal operational base (§108.475(f)(3)), further differentiating between commercial/corporate and recreational operations.

Implementing Strategic Deconfliction & Coord

- The transition to performance-based rules means the adoption of advanced strategic deconfliction strategies, real-time coordination with other airspace users, and integration with UAS Traffic Management (UTM) services for more routine BVLOS operations.

- These foundations are critical to ensuring both safety and efficient airspace use as more operators move under Part 108 oversight.

Shielded Ops, Multiple UA & Equipment Stds

- The implementation of shielded operations (within 50 feet of structures/obstacles) and allowance for multi-UA control will be phased in as legacy operators move to the new regulatory regime.

- All aircraft, equipment, and operational practices will need to comply with the updated airworthiness, equipment installation, and maintenance standards outlined in Part 108, ensuring high standards for both safety and reliability.

Roles: Legacy Approvals & Sunset Provisions

- Legacy approvals, waivers, and exemptions remain valid only during the FAA-determined transition period. After the sunset date, all BVLOS operations must be explicitly compliant with Part 108.

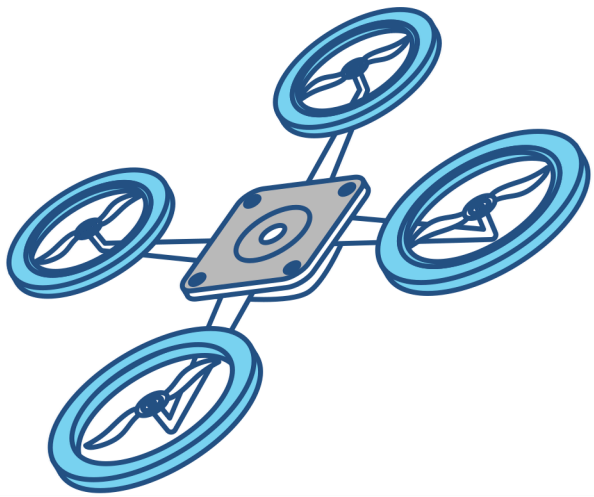
- The FAA will provide guidance and oversight to assist operators throughout the transition, including information on required documentation, training updates, and operational amendments.

Key Transitions & Operator Responsibilities

- Review current exemptions and plan for transition to Part 108 before expiration.
- Establish required principal base and update physical contact information with the FAA.
- Ensure all equipment, personnel, procedures, and training comply with the demands of the new BVLOS rule.
- Engage with FAA guidance materials and transition resources as received to ensure seamless regulatory compliance.

Summary: Section VII – Core Transitions

- All operators with existing BVLOS waivers/exemptions will transition to Part 108 after expiration.
- Required establishment and documentation of principal base of operations for commercial/corporate operators.
- Recreational operators must provide a physical address only.
- Strategic deconfliction, shielded operations, multi-UA coordination, and airworthiness standards to be applied as part of transition.
- FAA oversight and guidance throughout transition; legacy waivers sunset on FAA-determined timelines.



Section VIII: Advanced Performance Standards, Safety Management & 3d-Party UAS Integration Under Part 108

Introduction to Advanced Standards and Roles

Section VIII of the NPRM further refines the regulatory framework for BVLOS operations, with precision requirements for performance-based safety, operator and manufacturer roles, maintenance protocols and the integration of third-party service providers. This section establishes the technical backbone supporting large-scale, routine drone operations across commercial, industrial, educational, and civic domains.

Performance-Based Design & Ops Integrity

- **Airworthiness and Reliability:** The rules demand robustness from every facet of UAS operations. Operators must ensure aircraft and airborne equipment remain “in a condition for safe operation” at all times. Flights must not commence—or must be immediately aborted—if any aspect of the UAS fails to meet airworthiness criteria or shows signs of operational deficiency (§108.120(a)).

- **Required Equipment and Test Operations:** Every BVLOS operation requires properly installed and functional flight instruments and other critical equipment. Exemptions may exist only for specific authorized test flights (§108.120(c)).

- **Manufacturer Responsibility:** The original aircraft manufacturer holds responsibility for ongoing operational safety—including providing support for repairs, alterations, and maintaining design integrity—and must keep accessible records and technical data for FAA inspection (§§108.740, 108.750).

Safety Management Systems & Accountability

- **Organizational Structure and Oversight:** The NPRM substantially shifts the burden of compliance from the individual Remote Pilot in Command (RPIC) to the organization itself. Companies must have structured training programs, assign clear operational roles, and designate an operations supervisor responsible for oversight (§108.305).

- **Training and Qualifications:** Personnel must receive training that covers the full range of applicable regulations: UA speed, altitude limits, operating over people, equipment, maintenance and emergency procedures (§108.315).

- **Recency and Ongoing Competency:** Requirements for continuous operation qualification and demonstrable recency are stressed to ensure operational safety is maintained even as technologies evolve (§108.530, §108.540).

Maintenance Protocols, Manufacturer Support

- **Operator Responsibilities:** Maintenance must follow manufacturer-issued guidelines, techniques, and best practices (§108.610). Any deviation or deficiency must be documented and promptly rectified.

- **Continued Airworthiness:** Only qualified personnel may conduct maintenance, and manufacturers are obligated to provide ongoing support and access to essential records.

Roles: Third-Party UAS Service Providers

- **Definition and Scope:** The FAA defines “third-party vendor” as a business or entity providing distributed software or operational capabilities (e.g., cloud-based flight management, real-time risk assessment platforms) necessary for compliance, even if not under direct operator control.

- **Certificated Service Providers:** To ensure safe and compliant BVLOS ecosystems, service providers must meet detailed requirements under Part 146, including software security, personnel background checks, operational reliability standards and clear contractual reporting channels.

Safety Enhancements: Specialized Operations

- **Cargo Security Protocols:** Operators must establish cargo handling programs that prevent carriage of explosives, incendiaries or other prohibited items. Dedicated Security Coordinators must be appointed and serve as the main contact for TSA interactions.

- **Agriculture and Hazardous Operations:** Special permit protocols cover agricultural missions, chemical application and crop improvement operations. Personnel must demonstrate knowledge of chemical safety, emergency protocols, and have access to approved poison control guidance.

- **Demonstrations and Civic Projects:** Demonstration and civic-interest missions require additional oversight and may be limited by aircraft number and operational population density.

Key Compliance and Safety Provisions

- **Airworthiness (§108.120):** Mandatory safe operational status, routine equipment inspections.
- **Maintenance (§108.610, §108.720):** Strict adherence to manufacturer protocols.
- **Personnel Training (§108.305, §108.315, §108.530, §108.540):** Structured programs, training records, competency review.
- **Security and Cargo Handling:** Required protocols for designated Security Coordinators, tight controls, and mandatory pre-operation inspections.
- **Third-Party Service Providers (Part 146):** Defined regulatory levels, clear framework for supporting advanced BVLOS missions.

Section IX: Noteworthy Regulatory Provisions — Maintenance, Recency, Noise & Miscellaneous Standards

Maintenance & Manufacturer Responsibility

- **Operator Maintenance Duties (§108.610):** All operators must ensure their maintenance staff use only the methods, techniques and practices prescribed by the UAS manufacturer and as required by regulatory standards (§108.720).

- **Manufacturer Continuing Obligations (§§108.740, 108.750):** Manufacturers are required to monitor the ongoing operational safety of their products. They must retain access to all design data for any repairs or alterations, preserving compliance with design integrity and regulatory airworthiness criteria.Support for continued airworthiness—such as updated maintenance guidelines—must be provided to operators for the lifetime of the product.

Operator Recency, Training & Personnel Stds

- **Recency Requirements (§108.530):** Operators must document recent and ongoing operational experience for personnel, ensuring familiarity with current BVLOS regulations, UAS systems and airspace integration protocols.

- **Role Designations (§108.540):** Each operator must designate one or more persons responsible for ensuring that all personnel maintain appropriate training, certification, and operational competence.

- **Exceptions for Sole Operators (§108.560(b)):** For certificate holders who perform all functions alone, several part 5 requirements may be waived, reducing burdens for smaller operations.

Focus on Noise, Environmental & Community

UAS Noise Considerations:

- Operators must account for the local impact of aircraft noise, especially in operations over populated areas or sensitive locations (parks, schools, residential neighborhoods).
- Mitigation strategies may include operational timing, equipment selection, or flight path adjustments to address community concerns.
- Ongoing review and data collection on noise impacts may be required for renewal of permits/certificates or in support of broader environmental assessments.

Miscellaneous Requirements & Prohibited Ops

- **Prohibited Cargo Handling:** All operators must ensure that cargo carried does not include explosives, incendiaries, or destructive substances.
- **Security Inspections:** Security coordinators are required at the corporate level. Security inspections must be conducted any time the aircraft or its access has not been controlled in accordance with the mandated security program.
- **Agricultural Operations (§108.445, §108.460):** Only permitted agricultural activities are allowed; crop improvement, pest control, and chemical application require specific training and policy adherence. Operations are typically limited to fewer than ten active aircraft unless authorized otherwise.

Third-Party Service Providers' Requirements

Third-Party Vendors (§§108.740, §108.750) are any outside entity providing distributed software or operational support for certificated providers falls within the FAA's regulatory scope—even where direct personnel, code, or process control does not exist. All service providers must meet data sharing, security, and reliability benchmarks.

Shielded Operations and Controlled Access

- BVLOS operations are permitted within 50ft of obstacles, structures, or authorized operational areas, providing more flexible flight planning for inspection, surveying, and other commercial missions.

- FAA provides guidelines for operator flexibility in managing controlled access areas, enabling customized airspace safety protocols where appropriate.

Key Section IX Takeaways

- Maintenance and manufacturer responsibility are central to safe BVLOS and large-scale UAS operations.

- Recency, training, and personnel oversight guard against safety lapses and support regulatory compliance as technology evolves.

- Noise and community impact will be central to permit renewals and operational planning, in line with FAA's industry and societal considerations.

- Robust protocols for third-party support/integration, controlled access, and shielded operations allow for future-proofing the regulatory regime.
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Concluding Summary: FAA & TSA Performance-Based BVLOS Rulemaking — Key Takeaways and Path Forward

The FAA's transformative Notice of Proposed Rulemaking (NPRM), developed in close coordination with the TSA, presents the most robust and future-ready framework to date for integrating Beyond Visual Line of Sight (BVLOS) drone operations into the National Airspace System (NAS). This performance-based approach enables safe, scalable, and innovative unmanned aircraft system (UAS) missions for commercial, recreational, agricultural, and public safety use cases—while ensuring national security and community interests remain protected.

Core Pillars of the Draft BVLOS Regulation

- **Performance-Based Rules:** Moving beyond prescriptive methods, the proposed regulations empower operators with flexibility to adopt emerging technologies and risk-based operational strategies, guided by required safety and operational outcomes.
- **Risk Assessment and Mitigation:** Use of LandScan USA population data allows precise categorization of operational risk, ensuring that BVLOS activities over densely populated areas meet rigorous technological and procedural safety standards.
- **Corporate and Organizational Accountability:** The burden of safety shifts from the Remote Pilot in Command to the organizational level, with structured training, designated supervisors, and mandatory ongoing competency for all operational personnel.
- **Applicability and Transition:** Existing waivers and exemptions under prior rules sunset in favor of explicit compliance with Part 108, with reasonable transition timelines supported by FAA oversight.

Operational & Airspace Integration Provisions

- **Controlled Airspace & Right-of-Way:** Routine BVLOS operations are enabled in Class B, C, D, and specific E airspace sectors, subject to airspace authorizations and dynamic strategic deconfliction requirements. Shielded operations and the use of UTM highlight the future of shared, multi-actor airspace.
- **Specialized Missions:** Agricultural, package delivery, aerial surveying, and civic interest missions each have tailored permit types, operational limits, and training standards to address unique risks and community sensitivities.

Maintenance, Manufacturer & 3d-Party Support

- **Maintenance & Airworthiness:** Operators must follow manufacturer-prescribed practices, and manufacturers are responsible for continued safety and support throughout the UAS lifecycle.
- **Third-Party Service Providers:** Critical for large-scale BVLOS and UTM, service providers are comprehensively defined and organized under a three-tiered regulatory relief model, ensuring reliable, secure, and scalable support for mission-critical operations.

Security, Noise & Community Impacts

- **TSA Integration:** Mandatory security coordinators, cargo controls and inspection requirements guard against the carriage of prohibited materials and address current and future security threats.

- **Noise and Environmental:** Operators must manage the noise footprint of drones, with community engagement and mitigation strategies required for operations near sensitive sites.

Industry Impact and Forward Trajectory

With the NPRM's emphasis on performance-based outcomes and scalable compliance standards, the U.S. stands positioned to unlock routine BVLOS operations—ushering in new markets for delivery, agriculture, infrastructure inspection, public safety, and more. By balancing flexibility, safety, security, and societal considerations, FAA and TSA lay the groundwork for responsible UAS innovation and integration.

- **Continuous Stakeholder Collaboration**: Ongoing industry, public and government dialogue will refine the NPRM into actionable final rules.

- **Path to Routine BVLOS:** As operators, manufacturers, and service providers transition to the Part 108 and Part 146 frameworks, the national airspace will accommodate safe, secure and efficient unmanned operations at unprecedented scale.

The future of BVLOS drone integration is robust, safe, and adaptive—driven by data, performance and a commitment to both innovation and public interest.