

Hawkinson Aerial Photography, LLC

Dubuque, Iowa

[industry@dubuquedrone.com](mailto:industry@dubuquedrone.com)

05/26/2023



Federal Aviation Administration

Docket Operations, M-30

U.S. Department of Transportation

1200 New Jersey Avenue SE

West Building Ground Floor, Room W12-140

Washington, DC 20590-0001

RE: Public Comment on FAA Request for Comments - UAS BVLOS Operations (Docket FAA-2023-1256)

I am writing to provide my public comment in response to the FAA's request for comments on the implementation of unmanned aircraft systems (UAS) Beyond Visual Line-of-Sight (BVLOS) operations. I appreciate the FAA's recognition of the significant safety, societal, and economic benefits of BVLOS operations and its commitment to leveraging advancements in technology, standards, and operational strategies to ensure the safe integration of UAS into the national airspace.

#### A. Detect and Avoid Systems Performance Standards

A1. In circumstances or operating environments where a combination approach involving multiple standards can effectively ensure safety, the FAA should allow this approach. However, it is crucial to thoroughly evaluate the compatibility, reliability, and performance of the selected standards to guarantee the desired level of safety.

A2. If there are circumstances or operating environments where no combination of current standards can provide an acceptable level of safety, the FAA should prioritize further research, development, and collaboration with industry stakeholders to address these gaps. Safety should remain the paramount consideration in all UAS operations.

## B. Declarations of Compliance for Detect and Avoid

B1. The FAA should allow the declaration approach for utilizing DAA systems that meet the referenced standards in circumstances or operating environments where the applicant can provide substantial supporting documentation and data demonstrating compliance with the specific requirements. Prior to authorization, the FAA should require comprehensive information regarding the DAA system's performance, reliability, and ability to ensure safety.

B2. In circumstances or operating environments where the risks associated with BVLOS operations are higher, or the complexity of the DAA system necessitates closer scrutiny, the FAA should require operators to submit details of their DAA system for approval and validation prior to operation. This approach would provide an additional layer of assurance and minimize potential safety hazards.

## C. Well-Clear Boundary

C1. The ASTM F3442/F3442M-23 standard, which recommends maintaining a horizontal distance of 2,000 feet and a vertical distance of 250 feet between a small UAS and crewed aircraft, can be appropriate in circumstances or operating environments where the risk of collision is minimal, and the airspace is not densely populated.

C2. In cases where specific circumstances or operating environments warrant a different well-clear boundary, the FAA should consider alternative standards or criteria that are based on comprehensive risk assessments, industry best practices, and the safety requirements of the particular operation. The alternative standards should be supported by evidence demonstrating their effectiveness in ensuring safety.

## D. DAA Systems That Include Third-Party Services/Associated Elements (AE)

D1. It would be reasonable for the FAA to separate the approval of UTM service providers from the exemption process, as long as the UTM service provider undergoes a thorough evaluation and receives its approval based on stringent safety and operational standards. This separation would allow for the flexibility of utilizing approved services while ensuring adherence to established regulations.

D2. Alternatively, the FAA could consolidate the approval of the UTM service within the exemption process. This approach would streamline the authorization procedure but should only be pursued if it does not compromise safety or create undue complexities in oversight and enforcement.

#### E. Use of UTM Services for Strategic Deconfliction

E1. The FAA should consider imposing a requirement for strategic deconfliction and conformance monitoring capability for BVLOS operations conducted in controlled airspace or within the lateral limits of a Mode C Veil. This requirement can enhance situational awareness, promote efficient traffic management, and minimize the risk of collisions between unmanned aircraft. The FAA should establish clear criteria and standards for the fulfillment of this requirement, either through operator-provisioned capabilities or the use of approved UTM services.

E2. Additionally, the FAA should carefully evaluate the need for strategic deconfliction and conformance monitoring capability in BVLOS operations within Class G airspace. Although Class G airspace has lower traffic density, the FAA should assess the potential risks posed by BVLOS operations and consider whether the requirement for strategic deconfliction and conformance monitoring would contribute to overall safety.

E3. Apart from the ASTM F3548-21 standard, the FAA should explore alternative means of achieving strategic deconfliction and conformance monitoring capabilities. These means should be based on published standards and supported by evidence that demonstrates their safety benefits and operational efficiency. The FAA should engage in collaborative research and development efforts with industry stakeholders to foster innovation in this area.

#### F. Detect and Avoid Between Unmanned Aircraft

F1. The FAA should consider utilizing the ACAS sXu standard (RTCA DO-396) for detect-and-avoid between unmanned aircraft, along with a suitable communications method. The chosen communications method should enable effective information exchange and coordination between UA to prevent collisions. However, the FAA should carefully assess the compatibility, reliability, and interoperability of the selected communications method to ensure its effectiveness and safety.

F2. The FAA should evaluate the evidence regarding the effectiveness of the proposed requirement for detect-and-avoid between UA in managing the risk of collision. This requirement should be implemented in addition to, rather than in lieu of, strategic deconfliction and conformance monitoring. A multi-layered approach to conflict management would enhance safety by addressing various potential failure points and ensuring comprehensive situational awareness.

F3. If the FAA mandates UA-to-UA DAA, it should prescribe technical requirements to ensure interoperability across all BVLOS UAS. This standardization of technical requirements would facilitate effective communication and coordination between unmanned aircraft, regardless of their manufacturer or operator, thereby enhancing the overall safety and efficiency of BVLOS operations.

#### G. Beyond Visual Line of Sight Shielded Operations

G1. The FAA should authorize shielded operations in circumstances or operating environments where the risks associated with BVLOS operations are mitigated by defined volumes of airspace surrounding critical infrastructure or obstacles. The applicability of the 42 U.S.C. 5195(c) definition of critical infrastructure could be further limited or expanded based on careful risk assessment, considering the unique characteristics of each operation.

G2. Conversely, there may be circumstances or operating environments where the FAA should not authorize shielded operations if the safety risks outweigh the benefits or if adequate measures for ensuring the safety of crewed aircraft cannot be implemented.

G3. The standard described by the ARC report, with a 100-foot above and 100-foot lateral offset, can serve as an appropriate basis for defining the well-clear boundaries of shielded operations. However, the FAA should conduct further research, analysis, and risk assessments to validate the appropriateness and safety of this standard. If alternative standards are proposed, they should be supported by substantial evidence demonstrating their effectiveness in mitigating collision risks.

G4. Operators conducting BVLOS shielded operations should provide notification to the local aviation communities through a comprehensive and accessible method, such as an email/phone call, web portal, or mobile phone application using UTM services which then should be translated to an airport ATIS broadcast, Notice to Air Missions (NOTAM), or popup display on aviation mobile apps such as ForeFlight, Garmin Pilot, as well as modern avionics through a updated database similar to METARs, TAFs, or ADSB like feed to low flying aircraft that displays Remote ID transmissions. The notification should contain clear and concise

information regarding the operational parameters, timing, and duration of the BVLOS shielded operations to ensure effective communication and coordination among stakeholders.

Thank you for considering our comments on this important matter. The advancement of BVLOS operations in a safe and efficient manner will unlock numerous societal and economic benefits, and our trust that the FAA will continue to prioritize safety while fostering innovation and collaboration within the unmanned aircraft systems industry.