U.S. Global Leadership in Aviation at Stake:
Scaled BVLOS UAS Operations Around the World

We are at a critical and exciting time for the growing commercial uncrewed aircraft systems (UAS or drones) marketplace. The American UAS industry is ready to bring the benefits of drones to the United States, as is already happening around the world. Many countries are ahead of the United States in a new era of flight defined by new technology and new rules to include standardizing beyond visual line-of-sight (BVLOS) operations. Global competitors—including countries like China—are determined to win the next century of aviation and capture the jobs and societal benefits that accompanied America's leadership in the first century of flight. U.S. leadership in this dynamic aviation sector hangs in the balance.

Below we provide examples of other countries that have taken significant steps to enable BVLOS drone operations. In summary, unlike the United States, these countries provide industry with a clear regulatory framework which facilitates the scaling of BVLOS operations in a variety of market sectors.

China: China's CAA published a detailed plan in 2022 to "enhance China's international competitiveness in the field of unmanned aviation as well as the country's right to speak on international civil aviation rules and standards . . . and reach the goal of becoming a global civil aviation power."[1] The CAA has worked closely with the Chinese Central Government to establish pilot programs for widespread use of commercial drones from delivery services to agriculture. Today, there are entire cities in China where BVLOS commercial drone deliveries are already occurring at scale—in the city of Shenzhen, a Chinese drone company made over 100,000 drone deliveries in 2022.[2] And China has invested extraordinary state resources to create an industrial base with global market dominance.

Canada: Canada's Department of Transport (known as Transport Canada) has taken substantial steps to standardize BVLOS operations for a variety of industry applications. In June of 2023, the

[1] *China drafts roadmap to boost its civilian drone industry*, Institution of Engineering and Technology (Oct. 9, 2023), https://eandt.theiet.org/2022/08/23/china-drafts-roadmap-boost-its-civilian-drone-industry.

[2] Zeyi Yang, *Food delivery by drone is just part of daily life in Shenzhen*, MIT Technology Review (May 23, 2023), https://www.technologyreview.com/2023/05/23/1073500/drone-food-delivery-shenzhen-meituan.

Minister of Transport announced standardized BVLOS rules for small and medium drones. This included a proposal to eliminate the requirement to obtain a Special Flight Operations Certificate (SFOC) for certain low-risk and medium-sized drone operations.[3] These changes are expected to be implemented in the fall of 2024 and early 2025.[4] In the meantime, Canada's Civil Aviation Authority (CAA) provides operators with a clear framework for enabling low-risk BVLOS operations and allows the CAA to regularly authorize low-risk BVLOS operations via issuance of SFOCs.[5] Similar to the BVLOS ARC's recommendations for enabling BVLOS operations in low altitude "Shielded Areas," Canada's framework already enables true BVLOS operations in "Atypical" airspace in close proximity to structures. Canada's standardized framework has already allowed for the introduction of large-scale BVLOS operations, including BVLOS drone medical transport operations in the greater Toronto area.[6]

European Union: The European Aviation Safety Administration (EASA) has implemented a comprehensive three-tiered performance-based framework for categorizing drone risks, which fosters the development of BVLOS operations while ensuring safety. EASA offers significant support to EU member states and has played a vital role in helping to share data and learnings on BVLOS operations in a wide range of environments across different jurisdictions within the EU. The EU uses the risk-based Specific Operations Risk Assessment (SORA) approach developed by the Joint Authorities for Rulemaking of Unmanned Systems (JARUS) to safely enable BVLOS operations in what is known as the "Specific" category, and also requires all drones in the Specific category to be equipped with remote identification technology.[7] EASA has also begun the gradual implementation of U-space, which allows for both drones and manned aircraft to operate safely in the same airspace to facilitate the scaling of BVLOS drone operations.[8] This approach provides for cooperative airspace (a key recommendation of the BVLOS ARC), where crewed aircraft equip with technology to cooperatively share airspace with drones, improving safety for all airspace

[3] *Minister of Transport announces Canada's first proposed drone safety regulations for beyond visual line-of-sight operations*, Transport Canada (Jun. 23, 2023), https://www.canada.ca/en/transport-canada/news/2023/06/minister-of-transport-announces-canadas-first-proposed-drone-safety-regulations-for-beyond-visual-line-of-sight-operations.html.

[4] *Id.*

[5] *Fly your drone beyond visual line-of-sight*, Transport Canada, https://tc.canada.ca/en/aviation/drone-safety/drone-pilot-licensing/fly-your-drone-beyond-visual-line-sight.

[6] *DDC Receives Approval for BVLOS Flights And Dangerous Goods Transportation On its DroneCare Commercial Project*, Drone Delivery Canada (Jan. 9, 2024), https://dronedeliverycanada.com/press-releases/ddc-receives-approval-for-bvlos-flights-and-dangerous-good-transportation-on-its-dronecare-commerical-project/.

[7] *Specific Category – Civil Drones*, European Aviation Safety Agency, https://www.easa.europa.eu/en/domains/drones-air-mobility/operating-drone/specific-category-civil-drones#Registration%20of%20drone%20operators.

[8] *Drones: Commission adopts new rules and conditions for safe, secure and green drone operations*, Directorate-General for Mobility and Transportation, European Commission (Apr. 22, 2021), https://transport.ec.europa.eu/news-events/news/drones-commission-adopts-new-rules-and-conditions-safe-secure-and-green-drone-operations-2021-04-22_en.

users and allowing for a clearer path and more rapid integration of drone technology at scale. As a result, U.S. companies have expanded drone operations in the EU. For example, one U.S. company has recently announced plans to operate in Italy.[9] EASA's standardized approach has also aided in the implementation of BVLOS drone package deliveries in both Belgium[10] and Germany.[11]

Ireland: Ireland is a prime example of an EU member state utilizing the EASA framework and its own national authority to encourage BVLOS operations. The Irish Aviation Authority (IAA) has taken a forward-thinking approach to BVLOS operations. In 2021, the IAA granted the first Light UAS Operator Certificate (LUC) in the EU, permitting the self-authorization of BVLOS operations without further declaration and approval requirements.[12] The LUC allowed the grantee to expand cargo delivery operations across Ireland.

United Kingdom: UK's Civil Aviation Authority (CAA) dedicates staffing and resources to enable advanced drone operations if those operations will provide the CAA with valuable information and data. The CAA recently released a comprehensive framework to enable routine BVLOS operations across the UK by 2027.[13] This plan includes implementation of long-range BVLOS operations in Atypical air environments by the end of 2025.[14] In the meantime, the CAA is moving forward with innovative BVLOS operations. Just last month, it approved BVLOS drone operations to move blood between two London hospitals, shortening transport time to less than two minutes.[15]

Australia: Australia's Civil Aviation Safety Authority (CASA) has been an early mover in the drone technology space and has worked with industry partners to allow for commercial drone deliveries to occur at scale in multiple cities. As with other countries, Australia safely enables

---

[9] *Italy Chosen For Amazon Prime Air Service In Late 2024*, Intrieste (Oct. 20, 2023), https://www.intrieste.com/2023/10/20/italy-chosen-for-amazon-prime-air-service-in-late-2024/.

[10] *ADLC deploys its first Drone Delivery Network*, ADLC (Dec. 5, 2023), https://adlc.eu/en/posts/adlc-authorised-to-perform-daily-bvlos-drone-cargo-flights-and-starts-the-deployment-of-its-first-drone-delivery-network.

[11] *Last mile drone delivery in Germany benefits from BVLOS authorisation by the regulator*, Air and Space Law Society (Feb. 23, 2024), https://asls2.org/2024/02/23/last-mile-drone-delivery-in-germany-benefits-from-bvlos-authorisation-by-the-regulator/.

[12] Irish Aviation Authority, *Ireland and Skyports flying ahead of the EU with leading-edge regulatory certification* (Sep. 29, 2021), https://www.iaa.ie/media/2021/09/29/iaa-aviation-regulator-issues-first-bvlos-luc.

[13] United Kingdom Civil Aviation Authority, *Delivering Scalable UAS BVLOS in the Specific Category* 3 (Sep. 24, 2024), https://www.caa.co.uk/our-work/publications/documents/content/cap3038/.

[14] United Kingdom Civil Aviation Authority, *Delivering Scalable UAS BVLOS in the Specific Category*, at 17.

[15] Jack Deleo, *Google's Wing to Use Drones to Fly Blood Between London Hospitals*, Flying Magazine (Sep. 17, 2024), https://www.flyingmag.com/modern/googles-wing-to-use-drones-to-fly-blood-between-london-hospitals/.

BVLOS operations through use of the risk-based SORA framework developed by JARUS.[16] CASA recently released a comprehensive survey examining BVLOS drone operations outside of major metropolitan areas with a particular focus on agricultural drones, and has vowed to implement a more streamlined BVLOS approval path.[17] In the meantime, Australia has moved forward with BVLOS package delivery operations—one U.S. company recently expanded its drone delivery operations in Melbourne to reach over 250,000 residents.[18]

Japan: Japan has invested heavily in robotics technology, making Japan the first mover in drone agricultural spraying operations, and revolutionizing food production processes in Japan. Last year, the Japan Civil Aviation Bureau (JCAB) granted a U.S. company approval to conduct BVLOS operations across Japan with limited restrictions.[19]

Rwanda: Rwanda leads the world in national-scale BVLOS drone delivery over long distances with drone delivery operations occurring in the country as early as 2016.[20] Its Executive Branch has worked closely with the Rwandan Civil Aviation Authority (RCAA) to enable life-saving BVLOS operations. Rwanda's safety assessment considers transportation risk holistically, and properly accounts for the fact that the lives saved by UAS operations more than justify any incremental increase in airspace risks stemming from BVLOS drone operations. As a result, Rwanda has revolutionized the use of drones in the medical delivery space. A U.S. company has partnered with two non-profits to deliver vaccines to remote health posts, decreasing vaccine transport costs by 85%. Further, this U.S. company now delivers 75% of the nation's blood supply outside of the capital of Kigali, working with over 400 hospitals and clinics nationwide.[21]

---

[16] *Beyond visual line-of-sight operations*, Civil Aviation Safety Authority, https://www.casa.gov.au/drones/flight-authorisations/beyond-visual-line-sight-operations#HowtorenewyourBVLOSflightapproval.

[17] Civil Aviation Safety Authority, *BVLOS drone operations in regional Australia* 16 (Mar. 2024), https://consultation.casa.gov.au/stakeholder-engagement-group/consultation.2023-10-05.5578154857/results/summaryofsurvey-bvlosrpasopsregionalaus.pdf.

[18] Jack Daleo, *250,000 Melbourne Residents Now Eligible for Drone Delivery*, Flying Magazine (Jul. 19, 2024), https://www.flyingmag.com/drones/250000-melbourne-residents-now-eligible-for-drone-delivery/.

[19] Skydio Secures Nationwide BVLOS Approval for Remote Drone Operations In Japan, *Skydio* (Jun. 6, 2023), https://www.skydio.com/blog/nationwide-bvlos-approval-for-remote-drone-operations-in-japan.

[20] Jack Daleo, *Rwanda launches nationwide drone delivery service with Zipline*, Freight Waves (Dec. 15, 2022), https://www.freightwaves.com/news/rwanda-launches-nationwide-drone-delivery-service-with-zipline.

[21] *Id.*