



UAS and SmallSat Weekly News

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Joby Officially Goes Public Kate O'Connor August 12, 2021



California-based aircraft urban air mobility developer Joby Aviation officially went public following the completion of a business combination with special purpose acquisition company Reinvent Technology Partners on Tuesday. To celebrate the move, Joby displayed its aircraft outside of the New York Stock

Exchange on Tuesday morning.

According to Joby, its proceeds raised plus cash on the balance sheet came to approximately **\$1.6 billion** as of March 31, 2021, funding which the company expects to see it through initial commercial operations. Along with agreeing to a G-1 certification basis with the FAA and putting in an application for a Part 135 air carrier certificate, Joby reports that it has currently completed more than **1,000 test flights** of its eVTOL design including a 154-mile trip flown last month. Powered by six electric motors, Joby's aircraft is expected to seat a pilot and four passengers and have a range of at least 150 miles and top speed of 200 MPH.

https://www.avweb.com/recent-updates/evtols-urban-mobility/joby-officially-goes-public/?MailingID=690&utm_source=ActiveCampaign&utm_medium=email&utm_content=Joby+Officially+Goes+Public%2C+Senate+Confirms+Homendy+As+NTSB+Chair&utm_campaign=Joby+Officially+Goes+Public%2C+Senate+Confirms+Homendy+As+NTSB+Chair+-+Friday%2C+August+13%2C+2021

Parrot, Verizon, and Skyward bring first 4G LTE connected drone to the US market HEADLINE NEWS INNOVATION GEORGINA FORD AUGUST 12, 2021



Parrot ANAFI Ai is **the first and only** off-the-shelf drone to connect to Verizon's 4G LTE network. Verizon 4G LTE connectivity is provided **exclusively** to **Skyward** subscribers at no additional cost. The Skyward Connected Drone Solution gives enterprises one complete experience for planning, flying, data transfer and processing data.

Parrot ANAFI Ai is a compact professional drone, built for work, setting a new communications standard, open to developers, with a complete open-source app, autonomous one-click photogrammetry and new levels of cybersecurity. It makes complex missions for photogrammetry, mapping, modelling in construction, infrastructure, inspection surveying,



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public safety and enterprise use simpler, safer and quicker. In addition to its Verizon 4G LTE connectivity, it features an omnidirectional obstacle avoidance system, 48 MP imaging accuracy, 4K 60fps smooth videos, and up to **32 minutes** of flight time in an airframe that weighs less than **two pounds**.

Parrot ANAFI Ai's embedded Secure Element secures the 4G LTE link between the drone and the user's device. Parrot's streaming software is adapted to the 4G situation to optimize the definition and frame rate to network quality.

<https://www.commercialdroneprofessional.com/parrot-verizon-and-skyward-bring-first-4g-lte-connected-drone-to-the-us-market/>

U.S. Department of Defense Awards Citadel Defense \$6M for Counter Drone System August 12, 2021 Counter UAS



[Citadel Defense](#) has been awarded a sole source contract for \$6M from a Classified U.S. Department of Defense customer to build and deploy an **AI-powered** counter drone solution. The system will be deployed at sensitive government locations and effectively operated by non-specialist military personnel and first responders.

The solution is designed to autonomously detect, classify, track, and defeat unwanted unmanned aerial systems using artificial intelligence, machine learning, and sensor fusion.

Citadel specializes in the design, development and deployment of AI-powered counter-UAS solutions. The fusion of combat-proven radar, optics, and electronic warfare sensors into an intuitive user display gives military, government, and commercial customers a [solution](#) that clears the airspace of hostile drones.

Citadel's solution is designed for force protection in contested environments, the protection of critical infrastructure, urban surveillance, and security at high-profile events.

https://uasweekly.com/2021/08/12/u-s-department-of-defense-awards-citadel-defense-6m-contract-for-integrated-counter-drone-system/?utm_source=rss&utm_medium=rss&utm_campaign=u-s-department-of-defense-awards-citadel-defense-6m-contract-for-integrated-counter-drone-system&utm_term=2021-08-13



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Drones locating fresh water sources on drought-prone Easter Island Bruce Crumley - Aug. 12th 2021



The recruitment of tech-toting drones to hunt fresh water sources on Easter Island is another astonishing encounter of ancient and modern times. Rapa Nui, as it's also known, was first reached by Polynesian explorers as early as 800 BC. Once settled, their manner of working the land – including the construction and transportation of the nearly 1,000 maoi statues – eventually resulted in environmental collapse. Three small volcanic craters that collect water often dry out during droughts, leaving locals desperate to find new supplies.

Due to the same factors that cause rainfall to quickly seep into the ground, Easter Island also features flows of fresh water that surface in the sea from coastal seeps. Those explain why early European visitors to Rapa Nui delivered astonished reports of islanders and animals drinking directly from the Pacific and ending up no worse for it.

Experts from New York's [Binghamton University](#) and the University of Arizona are **flying drones** to locate all Rapa Nui's **coastal seeps**. And as part of that project, they're trying to determine whether unearthing the origins farther in on land may provide future water options to thirsty islanders.

The researchers have equipped drones with [thermal imaging sensors](#) to locate the coastal fresh water sources. Initial research has already discovered that during times of drought, flows from coastal seeps are the last reserves to show signs of depletion. The thesis being drawn from that is the island's bedrock is so efficient in soaking rainfall deep down that its huge stores of water take years to finally join the streams leaking out to sea. If so, one option may be to use drones to find the heaviest concentration of those subterranean reservoirs, and – very, very judiciously – extract some of that in times of severe drought. <https://dronedj.com/2021/08/12/drones-locating-fresh-water-sources-on-drought-prone-easter-island/>

Citadel Defense lands \$6 million counter-drone deal Bruce Crumley - Aug. 13th 2021



Counter-drone specialist Citadel Defense has scored another in a growing list of business successes by landing a **\$6 million** contract through the US Department of Defense. The coup comes less than a month after the San Diego-based company signed a **\$4 million** deal for a similar anti-drone system.



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The new classified DOD customer has signed on for Citadel Defense's artificial intelligence-enhanced counter-drone system. It will be installed at sensitive government locations and used by non-specialist military personnel and first responders. The platform will autonomously detect, classify, track, and neutralize suspicious or hostile uncrewed aerial vehicles using artificial intelligence, machine learning, and sensor fusion.

The deal falls squarely within the business trajectory Citadel Defense has set for itself in developing and delivering increasingly sophisticated counter-drone technology to clients. A key priority within that activity has been rapid development of integrated artificial intelligence capacities in response to customer input.

Citadel Defense CEO Christopher Williams, explaining how the new contracts fit into the logic of previous business operation, "With the incredible support and expertise of our partners, the first set of integrated systems will deploy at multiple locations over the next three months."

Its systems combine state-of-the-art counter-drone defense capacities with user-friendly operating interfaces. Its combat-tested radar, optics, and electronic warfare sensors are paired with an intuitive interface display. It can also be tailored to differing military, government, and commercial customer requirements in ridding their respective airspaces of drones deemed unwanted or hostile – whether individually or in swarms. <https://dronedj.com/2021/08/13/citadel-defense-lands-6-million-counter-drone-deal/>

Spanish police flying drones against driving offenses on summer-jammed roads

Bruce Crumley Aug. 13th 2021 POLICE DRONES



Indicative of its status as one of Europe's most popular vacation destinations, Spain is currently dealing with a surge from the 91.2 million cars expected across the nation's roads this summer. As part of their effort to ensure that travel glut circulates well (or as smoothly as inevitable traffic snarls allow), Spanish police are flying drones to keep watch for breakdowns, accidents, and – not least of all – driving offenses.

The nation's Direccion General de Trafico announced it has increased last year's fleet of 11 drones to 39 to give Spanish police additional eyes in the skies watching for driving offenses. Each craft has a maximal flight capacity of 40 minutes, and can rapidly be deployed between targeted areas at top speeds of 80 kmh. The uncrewed aerial vehicles are outfitted with



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powerful cameras and various sensors that allow them to identify and document **traffic violations** from **as far as two kilometers away**.

Those whining birdies are one reason why travelers to Spain this summer had better rethink ideas about losing the clinging seatbelt or figuring it's safe to bash out a couple illegal text messages while driving. <https://dronedj.com/2021/08/13/spanish-police-flying-drones-against-driving-offenses-on-summer-jammed-roads/>

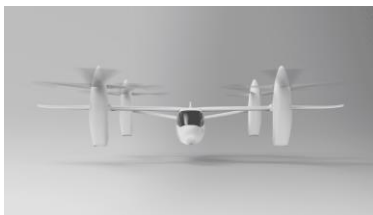
Overair Releases New Details About its eVTOL Aircraft Kelsey Reichmann August 12, 2021



Butterfly will be an all-electric aircraft with a range of over **100 miles** and 200 mph top speed. It will have zero carbon emissions and has a robust design made to withstand challenging weather conditions. Its payload will be able to accommodate five passengers, a pilot, and cargo topping out at **1,100 pounds**.

Ben Tigner, CEO at Overair, told reporters during a call on Aug. 11 that Butterfly's advantage lies in its four large propulsors. The large disk area will allow for the aircraft to use less power in the hover phase making the aircraft highly efficient.

"Our fundamental technology advantage that we bring to the party here is **inherently more efficient**," Tigner said. "We get more thrust for less power, that's why we're able to go battery only, not needing the hybrid solution. We have larger rotors, larger propulsors than most others in the industry so we can generate the thrust for flight, using less kilowatt-hours."



The design of Butterfly was also intentional for noise benefits. The large blade area minimizes pressure disturbances coming from the system generating less noise as the aircraft flies.

Butterfly will initially deploy as a piloted aircraft but will **transition to autonomous** operations in the future. The aircraft is designed with a fly-by-wire system which will provide layers of autonomy.

<https://www.aviationtoday.com/2021/08/12/overair-releases-new-details-evtol-aircraft/>



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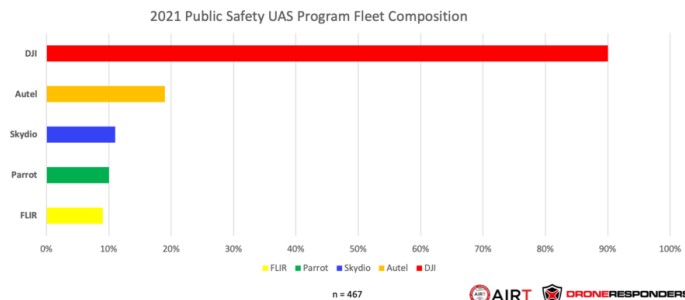
DJI Still Dominates Public Safety Sector, Survey Finds Miriam McNabb August 09, 2021



A newly released market survey by AIRT and DRONERESPONDERS reveals that [DJI continues to dominate the public safety sector](#), holding more than 90% of the market share: while [Autel Robotics](#) holds the number 2 position.

The research was performed by Airborne International Response Team, the leading 501(c)3 non-profit organization supporting the use of unmanned systems for public safety and disaster response – and official home of [DRONERESPONDERS](#).

Which of the following brand(s) of UAS does your public safety agency or organization current operate (check all that apply)?



[Autel Robotics](#), an American company headquartered in Bothell, Washington that is owned by [Autel Intelligent Technology](#) – also based in Shenzhen, China, is in the second place as of 2021, with 18.84% (88) of public safety UAS departments surveyed operating Autel drones within their fleet. “Additionally, 21.16% of

law enforcement drone programs and 21.51% of major cities drone programs say they are flying Autel,” says the AIRT research press release. CA-based [Skydio](#) comes in next, at 11.35%; French company [Parrot](#) comes in at 9.85%; and Teledyne [FLIR](#) products follow closely at 9.21%.

“The data makes it rather clear that price point and technological capabilities continue to be the driving factors for public safety agencies operating drones, “ said Christopher Todd, Executive Director for AIRT and lead analyst on the survey. “Despite all the recent bluster surrounding country of origin and the “Blue UAS” initiative, DJI remains the King of the Hill with Autel making noticeable headway in capturing the number two position with public safety users.” <https://dronelife.com/2021/08/09/dji-still-dominates-public-safety-sector-survey-finds/>



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Drone summit in Rome, Whitestown helps public safety officials reach new training heights August 11, 2021



The Northeast UAS Airspace Integration Research Alliance and the New York State Division of Homeland Security and Emergency Services held a recent two-day unmanned aircraft systems Summit for New York State public safety officials at the State Disaster Preparedness Training Center in Whitestown and Griffiss International Airport.

The summit showcased the latest drone technologies available to first responders and state agencies and gave participants the ability to fly mock disaster scenarios. More than **120 public safety officials and 13 UAS companies** participated in the summit.

NUAIR CEO Ken Stewart said, “With our combined efforts of NUAIR and Oneida County, coupled with two world-class facilities for UAS, Griffiss and the SPTC, we continue to enable New York State and local agencies, helping them implement safe, regulatory compliant and efficient drone operations to help them save time, money and lives.”

The first day of the summit held at the State Disaster Preparedness Training Center featured presentations from the Federal Aviation Administration and NUAIR on a host of important updates, a panel discussion on building an effective public safety UAS program and case studies highlighting relevant use-cases of UAS operations, and a session for UAS pilots to get hands-on opportunities to test their skills in a variety of response scenarios.

<https://romesentinel.com/stories/drone-summit-in-rome-whitestown-helps-public-safety-officials-reach-new-training-heights,119382>

Embraer's Eve to Partner with Kenya Airways Flying Staff 4 days ago

[Embraer's](#) Eve program has signed an agreement with Kenya Airways, the country's flag carrier, to develop an urban air mobility strategy that will serve key markets in East Africa and provide an accessible and affordable transportation option.



This collaboration with Fahari Aviation, announced Wednesday, aims to develop operational models for the wide accessibility of urban air mobility. It will also work to outline procedures to safely



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scale electrical vertical takeoff and landing aircraft.

Eve is Embraer's foray into the world of eVTOL, with a crewed ("human-centered"), electric-powered aircraft aimed at producing zero emissions and a low-noise footprint. The [first flight of the Eve eVTOL](#) within the engineering simulator took place in Brazil at the EmbraerX facility in June 2020, and full-scale aircraft flights are planned for later in 2021. [Halo](#), an investment-fund-backed UAM start-up, is [the launch customer for Eve](#), with **200 units on order** with a delivery timeline projected to begin in 2026. <https://www.msn.com/en-US/news/companies/embraer-s-eve-to-partner-with-kenya-airways/ar-AANde0S>

Transcend Air Taps Kaman to Make High-speed VTOL Charles Alcock August 13, 2021



Transcend Air announced on August 13 that it has selected Kaman Aerospace Group to build its planned Vy 400 tiltwing, which is slated to enter service by 2025. Helicopter manufacturer Kaman will make the turbine-powered VTOL at its facility in Jacksonville, Florida.

The \$3.5 million Vy 400 is expected to have a range of up to 450 miles and cruise speeds more than 400 mph. Transcend Air envisions the aircraft being used for regional passenger services, such as **connecting Manhattan and the center of Boston in 36 minutes**. Huslig Collective has been contracted to develop designs for a luxury interior option for executive/VIP transportation.

Transcend intends to certify the Vy 400 by 2025 with a propulsion system based on a 2,500-shp GE Aviation CT7-8 turboprop engine. It said the five-passenger, piloted aircraft will deliver per-mile direct operating costs that are **one-quarter** of those for medium twin helicopters with comparable cabin volumes and payloads.

During the course of this year, the Boston-based company has been using a mix of simulation, analysis tools, and truck-based ground tests to refine flight control laws, handling qualities, and various systems details. It has not said when it expects to build the first full-scale prototype and commence flight testing. <https://www.ainonline.com/aviation-news/business-aviation/2021-08-13/transcend-air-taps-kaman-make-high-speed-vtol>



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Drones in space: Satellites seen as key to giving full autonomy to uncrewed aerial vehicles Jason Rainbow August 13, 2021



Danish startup QuadSAT uses specially equipped quadcopter drones as satellite stand-ins to help antenna makers and their customers test and calibrate.

Advances in commercial drone technology are opening up new growth opportunities for the space industry, which has an often under-appreciated synergistic relationship with uncrewed aerial vehicles.

The fast-evolving market for drones attracted \$1.4 billion in venture capital investment in 2020, according to data from early-stage space technology investor Seraphim Capital. That's roughly double the amount of capital it recorded in 2019.

Clearing regulatory hurdles so drones can fly autonomously beyond visual line of sight, where they can then carry out tasks without human intervention, marks the next step in the market's evolution — and **satellite communications are crucial** for making this a reality.

While satellites might not be the primary connectivity source for all these next-generation drones, they can provide a layer of resiliency in case 5G wireless or other terrestrial networks fail midflight.

"A drone does all the processing for flying onboard," Joakim Espeland, CEO of Danish drone startup QuadSAT, says. "So the only thing you need is a little bit of data going through, and that can be enough for you to sit on another side of the world and know where the drone is, what speed it's going at and what orientation it has [and for sending a command] to get it back to where it needs to be safely. <https://spacenews.com/connecting-the-dots-drones-in-space-satellites-seen-as-key-to-giving-full-autonomy-to-uncrewed-aerial-vehicles/>

HOW DRONES CAN CONDUCT ATMOSPHERIC FLUX AND TURBULENCE

RESEARCH August 13, 2021 Sally French News



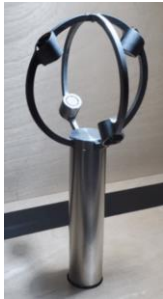
A Longmont, Colorado-based meteorological instrument design firm called Anemoment today announced the release of its newest 3D sonic anemometer, the TriSonica Sphere Wind Flux Sensor.



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Anemometers themselves are not new. An Anemometer is a tool that — through counting rotations — can calculate wind speed, which is important for several fields including meteorologists to weather patterns and physicists to study the way air moves.

Anemometers are relatively new to drones, and the tech surrounding them is improving. This new TriSonica Sphere, which can sample at rates up to 50 Hz, is designed for **drone-based atmospheric flux and turbulence research**. This is what it looks like:



Among the TriSonica Sphere's use cases is conducting eddy covariance studies, a key atmospheric measurement technique for determining gas emissions rates over natural ecosystems and agricultural fields and ultimately helping to build climate models.

The TriSonica Sphere was built in a partnership with BlueHalo, specifically designed to sit atop BlueHalo's Atmospheric Characterization Payload (WP-V3 ACP) UAS sensor suite. That suite is designed for conducting low Earth atmospheric measurements via drones. <https://www.thedronegirl.com/2021/08/16/anemoment-drones-atmospheric-research/>

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QUALCOMM 5G DRONE PLATFORM IS HERE August 12, 2021 Sally French News



Qualcomm on Tuesday revealed the world's **first** drone platform and reference design to offer **both 5G and AI-capabilities**, dubbed the Qualcomm Flight RB5 5G Platform.

As the world's first 5G drone platform, Qualcomm's solution is designed for commercial drone operators to more quickly transfer data in real-time while operating at low-power. The platform, which Qualcomm is dubbing the "Qualcomm Flight RB5 5G Platform" uses a Qualcomm QRB5165 processor as the foundation of a high-performance drone that doesn't require a ton of relative power.

Here are some of the top features on the new Qualcomm 5G drone platform:

- **5G and Wi-Fi 6 connectivity:** Both are crucial in enabling beyond visual line-of-sight.
- **360 obstacle avoidance:** Depth estimation, obstacle detection and mapping.
- **Qualcomm Secure Processing Unit:** Improves data-protection and safety requirements.
- **Heterogeneous computing:** AI and Machine Learning for fully autonomous drones.

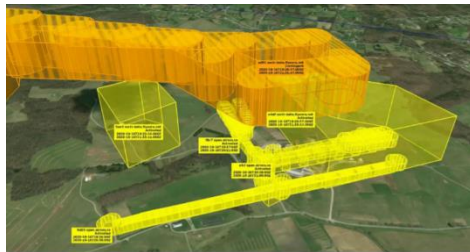


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- **A better controller:** Low-latency during FPV viewing and external monitor video display. 5G connectivity is crucial for many long-range drone operations, like [drone delivery](#). That's because pretty much every drone flight beyond the operator's line of sight requires a reliably strong signal. A lost connection could be detrimental, typically resulting in flyaways or crashes. Enter 5G: which solves those problems. <https://www.thedronegirl.com/2021/08/17/qualcomm-5g-drone-platform-is-here/>

FAA research suggests high density BVLOS UTM operations possible but refinements needed

August 13, 2021 Philip Butterworth-Hayes Emerging regulations, UAS traffic management news



The Federal Aviation Administration has announced the results of its Uncrewed Aircraft Systems Traffic Management Pilot Program 2 set of trials and demonstrations. Key elements of emerging UTM capabilities that will support beyond visual line of sight operations were tested and although, in principle, current industry technologies for managing high density operations and strategic de-confliction were **shown to be effective**, there is **still work to be done before they can support commercial operations**.

The objectives of the program were to test:

- The FAA flight information management system prototype and infrastructure
- New technologies and data to validate the latest standards for Remote ID
- In-flight separation from other uncrewed aircraft or crewed aircraft in high-density airspace
- UAS volume reservations to notify UAS operators of emergencies
- Secure information exchanges between the FAA, industry, and authorized users

According to a high level view of the program's conclusions:

"UPP2 was successful in examining a variety of end-to-end UTM functionalities and gathering information necessary to support initial implementation activities. While many aspects of UPP were successful, as with any demonstration of this nature areas of potential future enhancements or improvements on the process were identified. UPP partner teams provided feedback on lessons learned through the development and demonstration activities, and program-level lessons learned were also collected." <https://www.unmannedairspace.info/news->



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[first/faa-upp2-demonstrations-suggest-high-density-bvlos-utm-operations-possible-but-refinements-needed/](#)

Reshape the Future of Medical Blood Transport with Unmanned Aircraft Flight

Adam Falzarano and Lindsay McFarland, The Living Legacy Foundation of Maryland and Jane Daniel, MissionGO August 17, 2021



As donation and transplantation needs continue to rise in Maryland and across America, a faster, safer and more efficient solution for organ and blood transport has arrived. MissionGO, a leader in unmanned aircraft solutions, and The Living Legacy Foundation of Maryland, the state's organ procurement organization responsible for organ, eye and tissue donation services, today announced a successful flight demonstration.



The flight took place on August 10 using the new MissionGO MG Velos 100, a fully autonomous, high-speed unmanned aircraft system for blood and organ delivery. The demonstration revealed an approximately **292 percent time improvement** over ground transportation.

Currently, The LLF send blood specimens to a minimum of three different labs by ground courier that are most frequently across a 7.1-mile distance, which takes about 38 minutes for just one shipment. This process is also subject to heavy traffic, unexpected accidents, and many other unpredictable road-related factors. Once received, The LLF, donor hospitals and partner laboratories within 150 to 250 miles must create extremely efficient, logistical solutions to rapidly and rigorously test the specimen to ensure there are no communicable diseases present, identify a match and provide transport to the transplant hospital for the surgical procedure. MissionGO recognized that a better method was needed and, with technology partners MediGO and AlarisPro, designed the MissionGO MG Velos 100, a fully integrated solution to track, deliver and monitor the entire logistics process.

file:///C:/Users/Robert/AppData/Local/Microsoft/Windows/INetCache/Content.Outlook/YS6IUNR4/MissionGO%20and%20The%20LLF%20of%20Maryland%20Reshape%20the%20Future%20of%20Medical%20Blood%20Transport_PR.pdf

Drone Market Report 2021-2026 predicts market value rising from \$26.3 billion to \$41.4 billion

August 12, 2021 Jenny Beechener UAS traffic management news, Urban air mobility

The newly-released [Drone Market Report 2021-2026](#) by German company Drone Industry Insights forecasts a growth of 9.4% Compound Annual Growth Rate for a global drone market



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that it currently estimates to be worth \$26.3 billion in 2021. This means that drones are on their way to become a \$41.4 billion industry by 2026.



Currently, commercial drones are used in a vast majority of industries. According to the Drone Market Report, the drone applications in the energy industry are on path to earn just under \$5.9 billion throughout the globe. Other industries such as construction and agriculture are not far behind, and some industries related to warehousing and insurance will grow at a more rapid pace in the next 5 years.

Drone services, such as mapping and inspections among dozens of others, represent roughly 78% of global drone-related revenue and are the main driving force in the market. Some of these also experienced a positive impact from the pandemic by assisting with the remote delivery of coronavirus test kits and vaccines that allowed people to keep a safe distance and avoid infection. Moreover, drone hardware is forecasted to experience strong growth as well, even though this report excludes passenger drones that have made headlines throughout 2021 through companies like Joby, Archer and Lilium.

Regionally, Asia and North America are currently the strongest markets, led by China and the United States respectively. However, developing countries in South America and Asia will experience the fastest growth above 11% CAGR. <https://www.unmannedairspace.info/latest-news-and-information/drone-market-report-2021-2026-predicts-market-value-rising-from-usd26-3-billion-to-usd41-4-billion/>

Tel Aviv launches wide-scale drone delivery program August 15, 2021 Philip

Butterworth-Hayes UAS traffic management news *By Arie Egozi*



A pilot program of package delivery by drone was launched in the Tel Aviv area in Israel on August 10. SkylinX is one of the startups chosen to participate in CityZone, Tel Aviv's Open Innovation Programme – an innovative lab and beta site established by Atidim Park Tel Aviv, in collaboration with the Tel Aviv-Yafo municipality and the Tel Aviv University, with the goal to test, experiment and integrate solutions for

urban challenges.

The pilot program includes the inauguration of drone flight paths along the coast and will, for the first time, create a direct link between Reading Power Station in the north and the Yafo Port in the south.



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Skylinx is not alone: AirwayZ is responsible for the airspace management system, and Flytech IL will operate the drones along the flight route. Other companies also potentially joining include Nespresso, Tzamal Medical Group and Assuta Medical Centers. The program will continue for at least six months and is expected to expand to additional areas of the city. Skylinx is collaborating with Flying Cargo, one of the world's largest logistic companies, and Gett Delivery which helps connect this new service to end consumers.

The Mayor of Tel Aviv-Yafo, Ron Huldai said, "The future is already here. We are embarking on a pilot in Tel Aviv-Yafo that will accurately test and measure the commercial use of drones in an urban setting. We are going about it in a controlled manner, to evaluate the different technological capabilities as well as the right balance for **open and free urban airways**. Only after the testing period, we will examine the results with all relevant stakeholders and decide how we wish to move forward".

<https://www.unmannedairspace.info/latest-news-and-information/tel-aviv-launches-wide-scale-drone-delivery-programme/>

Swoop Aero's Kite: Next Level Air Logistics Platform Miriam McNabb August 16, 2021 Ian Crosby, DRONELIFE Staff Writer



Swoop Aero, [the Australian drone-powered logistics company](#) has unveiled its most advanced aircraft, Kite™. Currently, the company is bringing Kite™ to the USA for Federal Aviation Administration certification.

The Kite brings together learnings of operational and real-world experience from Swoop Aero's 'Kookaburra' — a previous model that has clocked upwards of 10,000 flights. The aircraft has been developed by Swoop Aero's experienced team of Australian-based engineers to accommodate swift and sustainable manufacture and production.

Able to travel up to 200km per hour, the Kite can operate across geographical ranges of more than 180 kilometers on a single battery charge with an increased payload capacity of up to 5 kgs. The model relies on Swoop Aero's technology platform, which provides the full technology stack including hardware, software, and supporting infrastructure. Real-time tracking, supply chain data, capture, and analytics are provided within an integrated technology platform. At Swoop Aero's Melbourne HQ, a Digital Twin drives insights into system reliability and performance using AI.

Some of the tasks the aircraft is capable of include delivering pharmaceuticals and medical supplies and assisting with disaster response, minimizing human interactions when social



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distancing is required, providing safe and efficient transport between hospitals, capturing aerial data for terrain monitoring and climate science, and contributing to search and rescue operations. <https://dronelife.com/2021/08/16/swoop-aeros-kite-next-level-air-logistics-platform/>

18Aug21

Rocket Lab to launch Finnish cubesat Jeff Foust August 17, 2021



WASHINGTON — A Finnish cubesat designed to test satellite deorbiting technologies will launch on a Rocket Lab Electron after delays with its original launch on a Momentus tug.

Rocket Lab announced Aug. 16 that it signed a contract with Aurora Propulsion Technologies to launch its

AuroraSat-1 spacecraft on an Electron in the fourth quarter of 2021.

AuroraSat-1 is a 1.5-unit cubesat the company developed in cooperation with Polish smallsat company SatRevolution. The spacecraft is designed to test a resistojet thruster system to **detumble** the spacecraft and a charged “microtether” intended to create electromagnetic drag and lower the spacecraft’s orbit, a technology that could be used to **deorbit** satellites.

Rocket Lab didn’t provide details about the launch opportunity, but given the spacecraft’s small size, it is likely to be accommodated as a secondary payload on another mission or as part of a cluster of smallsats. <https://spacenews.com/rocket-lab-to-launch-finnish-cubesat/>

Dragon Eggs, Expanded Training Augment Drones’ Role in California’s Dixie Fire

NEESA SWEET AUGUST 16, 2021



Flying the Inferno

For 21 round-the-clock days at California’s Dixie Fire over July and August, clad in helmet and fire gear with 100-foot flames only a few feet away, Joe Suarez managed a video monitor, tablet app, controller, and **drone**—all while keeping in touch with his crew and a firing boss, dealing with short-lived batteries and tasked with constantly refilling baskets of things called “Dragon Eggs.” Suarez is superintendent of the Arrowhead Hot Shots, a specialized unit of the National Park Service specializing in fighting wildland fires. His weapon of choice at Dixie: **aerial ignition from drone platforms, a fast-growing approach** to curtailing the flames.



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By August 13, Dixie had consumed 540,581 acres including the entire town of Greenville, CA. Suarez and his crew are among the more than 6,000 people fighting the blaze in joint operations of the California Department of Forestry and Fire Protection, The U.S. Forest Service, and the National Park Service. In addition to planes, helicopters, and forces on the ground; drones are playing an ever-larger role in the ongoing battle.



Dragon Eggs in a basket

Which leads us to the Dragon Eggs, the tradename of small spheres of potassium permanganate which, when punctured and injected with glycol, burst into flame. They are part of Drone Amplified's IGNIS system, which is mounted under a DJI M600 drone and launched in a firefighting process called aerial ignition.

Aerial ignition is a twist on an old firefighting strategy—backburning, which ignites a swath that the fire hasn't yet reached to deprive it of fuel. Four hundred Dragon Eggs—nicknamed “ping-pong balls” by firefighters—sit in a basket and can be deployed rapid-fire or at whatever speed and intervals are needed to carve out the desired **firebreak space**. While aerial ignition has been done by helicopter, it is **far safer to do it by drone**.

<https://insideunmannedsystems.com/dragons-eggs-expanded-training-augment-drones-role-in-californias-dixie-fire/>

Pegasus hybrid-electric VTOL promises massive range, no redundancy Loz Blain

August 10, 2021



Superyacht designer Steve Kozloff has turned his hand to next-gen aviation with a twin-prop VTOL aircraft that promises a monster **1,380-mile range**, as well as the ability to take off and land conventionally where there's a runway.

The Pegasus concept adorns a very helicopterish four-seat cabin with a set of fat wings, each fitted with a large tilt-capable propeller, 11 ft in diameter. These props are driven by electric motors, each making around 700 horsepower, and together, says Kozloff, they'd make around 7,500 lb of thrust. The aircraft would weigh 3,300 lb dry and 6,000 lb fully loaded, leaving plenty of room in the weight budget for cargo.



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The propulsion system would be powered by a generator, spun by a Pratt & Whitney PT6A-67R turboprop engine capable of making 1,424 shaft horsepower. The aircraft would carry some 250 gal of fuel, giving you that colossal range estimate. It promises a very quick cruise speed over 345 mph. Kozloff says the aircraft's "stunning looks" help the Pegasus live up to its

nomenclature as a "mythical white stallion." <https://newatlas.com/aircraft/pegasus-hybrid-electric-vtol/>

DARPA Aims to Build Bridge Across Technology's 'Valley of Death' Graham

Warwick August 16, 2021



*DARPA's Shepard program will adapt IARPA's ultraquiet ducted-fan Great Horned Owl (left) into a stealthy hybrid-electric **unmanned** aircraft.*

Few X-planes have ever led directly to an operational aircraft. Many of the technologies they pioneered have found their way into production aircraft but often after

a gap of many years, even decades—an interregnum known as the “valley of death.”

“There’s usually a gap because you should never build an acquisition program on a DARPA science and technology effort. We may fail, and then you’re left holding the bag on those resources,” Michael Leahy, director of DARPA’s Tactical Technology Office told the American Institute of Aeronautics and Astronautics Aviation 2021 virtual forum on Aug. 5. “So how do you bridge that gap?”

Whereas an X-plane demonstrates high-risk, high-payoff technologies and incorporates off-the-shelf components to reduce cost and risk in other areas, a Y-plane supports a program of record and incorporates operational requirements and systems, including software and sustainment.

In DARPA’s vision, an X Prime program would tackle system-level integration risks and provide an interim capability to meet an urgent operational need. Such a program could also yield operational subsystems for a minimum viable product that could be fielded.

[https://aviationweek.com/aerospace/aircraft-propulsion/darpa-aims-build-bridge-across-technologys-valley-](https://aviationweek.com/aerospace/aircraft-propulsion/darpa-aims-build-bridge-across-technologys-valley-death?utm_rid=CPEN1000003332045&utm_campaign=29592&utm_medium=email&elq2=57a88ba858cd4100b3d68cebcb9131b7)

[death?utm_rid=CPEN1000003332045&utm_campaign=29592&utm_medium=email&elq2=57a88ba858cd4100b3d68cebcb9131b7](https://aviationweek.com/aerospace/aircraft-propulsion/darpa-aims-build-bridge-across-technologys-valley-death?utm_rid=CPEN1000003332045&utm_campaign=29592&utm_medium=email&elq2=57a88ba858cd4100b3d68cebcb9131b7)



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Mobilicom launches world-first AI-based 360° Cybersecurity Suite for drones, robotics August 17, 2021 News



Mobilicom has added to its drone and robotics smart solutions offering, launching **the world's first** AI-based 360° Cybersecurity system that can detect, prevent, and respond to multiple drone/robotics cyber-attacks in real-time **without requiring intervention by an operator.**

Mobilicom's Immunity Cybersecurity and Encryption (ICE) Cybersecurity Suite has been specifically designed for commercial and industrial drone, robotics and autonomous platforms, and can protect against more than 10 different types of cyber breaches and malicious attacks, including jamming, man in the middle, CPU, and Servers attacks. The multi-layered suite protects the platform, safeguards communication channels, and encrypts collected and transmitted data.

It leverages Mobilicom's experience with more than 70 types of drones, robotics and unmanned platforms. It provides drone and robotics manufacturers with a comprehensive solution to real-world attacks and threats that are increasingly impacting the industry. Drone and robotics manufacturers can purchase the Suite as an add-on software licensing module.
https://uasweekly.com/2021/08/17/mobilicom-launches-world-first-ai-based-360-cybersecurity-suite-for-drones-robotics/?utm_source=rss&utm_medium=rss&utm_campaign=mobilicom-launches-world-first-ai-based-360-cybersecurity-suite-for-drones-robotics&utm_term=2021-08-18

Colorado town is using drones and ground-penetrating tech to create more room Ishveena Singh - Aug. 18th 2021



The City of Woodland Park, Colorado, has a problem that cannot be buried: Its cemetery is running out of space. So now, the city is looking at modern technology solutions like drones and ground-penetrating radar to figure out how it can create more room.

Established in 1891, the Woodland Park Cemetery is the city's only municipally owned burial ground. It is about 66% developed and almost 80% sold out. But before the City develops the available land, it needs to know which areas to avoid. It needs to ensure there are no unmarked graves or artifacts buried under the surface.



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A drone survey has been conducted to create a layout of the cemetery. It will allow us to sell plots once again in our historical cemetery. The drone will be piloted by an FAA licensed drone pilot, and all airspace waiver and authorization requirements have been met.

The next step will be to leverage GPR tech and see what lies beneath the surface. Rumor has it, a notorious fugitive wanted by the FBI is buried at the cemetery with a [motorcycle](#), and the locals are quite excited to find out if that is indeed true.

Once the results of both the surveys are in, the data will come together in the form of a cemetery management software that will allow citizens to purchase new plots online. The city expects to start selling new plots in early fall 2021. <https://dronedj.com/2021/08/18/colorado-cemetery-drones-ground-penetrating-radar/#more-65559>

Autonomous Wind Turbine Inspection and Repair August 16, 2021

A manual wind turbine inspection takes a full day, skilled technicians, and a lot of downtime. AI-based drones are changing the game and reducing inspection time and risk, while producing more detailed data-based reports.



Nearthlab is a Seoul-based company that uses drones equipped with artificial intelligence and laser technologies to help pinpoint potential damage to wind turbine blades and nacelle and reduce the chance of accidents during human inspections.

The autonomous drones [are programmed](#) to navigate wind towers using artificial intelligence (AI). At the top of the tower, they take more than a thousand photos of the turbine's blades and nacelle—housing for the gearbox and brakes—to scan for potential defects and estimate the size and depth of cracks. Using AI, the company analyses photographs to identify damage.

The drones work quickly: they take [15 minutes](#) to inspect a tower, **compared with the day** it takes a human technician to do the same using ropes and a harness. The towers must be idled for the duration of the inspection, so the faster, the

better. https://innovateenergynow.com/resources/autonomous-wind-turbine-inspection-and-repair?utm_campaign=Energy%20Drone%20%26%20Robotics%20Coalition%20Content&utm_medium=email&_hsmt=150482962&_hsenc=p2ANqtz--35FobKDIrYQp8Egd3LE6TthFoRzsZrdNSJKq9Zwt3ljs3JupTb8vCUA2o-9iBs-upG74hQ1SulmoEqiiPqfiN1G_Dw&utm_content=150482962&utm_source=hs_email



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19Aug21

Penguin C Mk2 VTOL UAV Unveiled 17 Aug 2021 Mike Ball



[UAV Factory](#) has confirmed that its Penguin C Mk2 Vertical Takeoff and Landing long-endurance unmanned aerial system is now production-ready. The new aircraft builds upon the proven catapult-launched Penguin C platform and provides excellent endurance and performance.

The [Penguin C Mk2 VTOL's](#) state-of-the-art AEROFLOW Boom Technology enables a **20% increase in flight endurance**. This patented technology uses hoods over the vertical lifting rotors that automatically enclose the rotors while the vehicle is in horizontal flight, significantly reducing drag and allowing the UAV to achieve a flight time of over **14 hours**.

The VTOL booms are made of carbon-fiber composite for maximum strength and rigidity despite its light weight. Battery replacement is a simple process that can be done in under two minutes, minimizing delay between flights. With the added weight of the booms to enable VTOL operations, the Penguin C Mk2 VTOL just falls into the Group 3 UAS category with an MTOW of 70.6 lbs.

The Penguin C Mk2 VTOL UAS offers one of the smallest logistical footprints in its class. A full system consists of 3 aircraft, 3 high performance EO/IR Epsilon gimbals, 1 ground control station, and 1 MIMO tracking antenna. The entire system can be transported in just five Pelican cases and allows for rapid and easy assembly.

<https://www.unmannedsystemstechnology.com/2021/08/penguin-c-mk2-vtol-uav-unveiled/>

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We offer pragmatic, tailored, end-to-end services. We assist you with audit and assurance, helping you to identify your primary threats and risks. We then recommend and

guide you in implementing and validating solutions. These are appropriate and proportionate to ensure their effectiveness.

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malicious in nature. Increased resilience reduces the extent of any loss and damage accompanying a drone incursion. A holistic organization-wide approach to counter-drone resilience will save you considerable resources by targeting investment only in what is essential. www.gsdm.global

Airflow Exceeds \$600M in Orders for eSTOL Aircraft Kelsey Reichmann August 18, 2021



Airflow has two eSTOL aircraft variations, a Model 100 and Model 200. Airflow's Model 100 can carry four passengers or 800 lbs of cargo, only needs 150 feet to take off, and has a 250-mile range. The company's Model 200 has a nine-passenger or 2,000 lb cargo payload, needs 250 feet to take off, and has a 500-mile range. Both aircraft are 100 percent carbon neutral.

Airflow also named former Embraer CEO Paulo Cesar Silva to its advisory board, according to the release. Silva will advise Airflow on financing, manufacturing, and a commercial launch strategy. He said, "The future of aviation not only demands net-zero carbon emissions but also the ability to bring to market a much lower operating cost aircraft while meeting the needs of both passengers and operators. The Airflow team has the right experience to effectively seize the opportunity of eSTOLs thereby changing the face of sub-regional transportation."

Airflow's eSTOL aircraft is predicted to enter service in 2025 and will require no new infrastructure and fit within existing regulatory frameworks. <https://www.aviationtoday.com/2021/08/18/airflow-exceeds-600m-orders-estol-aircraft/>

20Aug21

FAA CHIEF THROWS SHADE AT CURRENT BVLOS RULES August 18, 2021 Sally French News



If you don't like the current BVLOS rules, you're not alone. FAA Administrator Steve Dickson doesn't like them either.

Dickson led a keynote speech on Tuesday at Day 1 of the [AUVSI XPONENTIAL 2021 conference](#) in Atlanta, Georgia. His speech was named "Policy Leading to Trusted Integration," and while the tone was largely hopeful, Dickson took a bit to acknowledge that the current **BVLOS rules are far from ideal** in enabling the drone industry to prosper.



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"They're not up to the task," Dickson said in his speech in reference to current BVLOS rules. "For one thing, approving operations on a case-by-case basis is not a feasible or efficient way forward. He also acknowledged regulation is often seen as a "drag" on the drone industry's momentum.

But for what it's worth, he gave some reason to why things might feel slow for what is otherwise a fast-moving industry: safety. Safety has always been at the forefront of the FAA. And Dickson said that to enable the drone industry to advance, the public must trust the drone industry, which requires no safety mishaps. He said in his speech that — since taking the reigns at the FAA back in 2019 — he's "become a firm believer that smart and fair regulation" will aid in the safe integration of drones into the airspace. And with that, attention to safety can never be relaxed, he said. "The public fully expects all aspects of aviation to be as safe as commercial airlines," Dickson said. "Businesses and operators who don't understand that reality are not going to be in business for long." <https://www.thedronegirl.com/2021/08/20/faa-chief-current-bvlos-rules/>

Drones airdrop enemy bugs on harmful insects in crops Bruce Crumley Aug. 19th 2021



The use of bug against bug is not new but is expanding in terms of degree and sophistication, according to a report in the June [edition](#) of the Entomological Society of America's *Journal of Economic Entomology*. That involves deploying specialized agricultural craft to drop natural enemies of destructive pests in appropriate situations, and thereby limit **or eliminate the need for traditional insecticides.**

Harmful insects inflict more than \$100 billion in damage to crops each year in the US alone. Agriculture's lucrative organic sub-sector is particularly vulnerable, since rules determining what can be sold as naturally grown are generally strict, but particularly draconian when it comes to pesticides.

Reports on [research](#) in Canada, for example, describe how drones dropped rival species on harmful pests in crops – the former group known as biological controllers, or biocontrols. One of those trials involved spreading the eggs of parasitoid wasps amid destructive insects in an area of cornfields and spruce trees. Once the wasps hatched and came of reproductive age, they laid their eggs in those of the unwanted bugs, eliminating the next generation of devourers before they could even take wing. <https://dronedj.com/2021/08/19/drones-airdrop-enemy-bugs-on-harmful-insects-in-crops/#more-65652>