



## UAS and SmallSat Weekly News

### Contents

- 2 Drone Taxi Market Predicted to Grow to More than \$800 Million in the next 8 years
- 2 Dubai installing Airobotics' drone stations to support police response across the city
- 3 Watch 1,824 drones light up the sky at Tokyo Olympics opening ceremony
- 4 MEET THE OTHER INDUSTRY THAT PROFITS WHEN THE DRONE INDUSTRY THRIVES
- 4 Even as it fights COVID-19, Kenya turns to drones in battling longtime malaria foe
- 5 Misappropriation lawsuit between eVTOL rivals signals lucrative business activity
- 6 USAF orders Puma 3 AE and Raven UAS from AeroVironment
- 7 North Carolina is testing drones to get emergency supplies to Ocracoke
- 7 Drones inspect waste sites at Savannah River
- 8 Homegrown emergency UAV aids telecoms restoration in central China
- 9 Keltbray Cuts Carbon Emissions Using Drones for Utility Inspections
- 10 BREAKING: DOD Statement on DJI Drones
- 10 NASA's Mars helicopter soars past 1-mile mark in 10th flight over Red Planet
- 11 AUVSI comments on proposal to allow the NTSB to investigate drone accidents
- 12 SpaceX or ULA to launch future Space Development Agency satellites
- 12 The Day the Mexican Soil Shook Us: Drones in Humanitarian Aid
- 13 Royal Navy tests drones for blood deliveries to battlefield medics
- 14 SAMAD Aerospace Completes Hover Tests for eStarling
- 15 Watch astonishing video of Siberian falcon attacking a drone at 2,300 feet
- 15 NASA Awards Electra.aero STTR Contract for eSTOL Aircraft
- 16 Joby Aviation, aiming to go to market in 2024, completes 154-mile test flight
- 17 General Atomics Unveils "LongShot" Aircraft-Launched Air-To-Air Combat Drone Rendering
- 18 Volocopter Takes to the Skies at EAA AirVenture
- 18 Joby Completes Flight of More Than 150 Miles with Electric Vertical Take-Off Air Taxi
- 19 Intel and Dollywood's behind-the-scenes video explains how drone light shows work
- 20 AURA Network Systems Closes \$30.9 million for Commercial Drones
- 20 UK Orders 13 Additional General Atomics MQ-9B Drones for RAF Protector Program
- 21 Japan Post Invests 3 billion Yen for Commercial Drone Delivery by 2023
- 21 Air Force Could Be Using Air Taxis in 2023



## UAS and SmallSat Weekly News

24Jul21

### Drone Taxi Market Predicted to Grow to More than \$800 Million in the next 8 years. Where Will They Fly? Miriam McNabb July 22, 2021



A new report *[“Drone Taxi Market by Range \(Intercity, Intracity\), Propulsion \(Fully Electric, Hybrid, Electric Hydrogen\), Autonomy \(Fully Autonomous, Remotely Piloted\), Passenger Capacity \(Up to 2, 3 to 5, More than 5\), System, End Use & Region – Global Forecast to 2030”](#)*, predicts that the market will grow from an estimated \$74 million in 2025 to reach \$860 million by 2030, at a CAGR of **63.0%** during the forecast period.

The report identifies the key players: Boeing and [Joby Aviation](#) in the U.S., Airbus in the Netherlands, Lilium and [Volocopter](#) in Germany, and [Ehang](#) in China. It predicts that ride sharing companies, like Uber, will have a large share in the Drone Taxi Market during the forecast period. “This growth is attributed to congested cities and need for faster transport with defined travel routes to enable reaching from one destination to another. ... ride sharing companies are expected to account for the largest market share during the forecast period owing to a large number of air taxi operators and the expected increase in adoption of ride sharing taxis post 2025,” says the report. Certainly, business deals reflect this prediction. Uber Elevate, Uber’s urban air mobility division, [joined forces with Joby Aviation](#) last year: around the world, transportation systems are looking to integrate aviation solutions.

The need is clear – and the vehicles are there, but actual service is not going to happen everywhere before 2030. Although the report predicts North America will grow at the highest rate during the forecast period, that doesn’t mean we’ll see drone taxi service in the next 8 years. What it does mean is large industry players and international regulatory bodies are **investing heavily** in the drone taxi market. <https://dronelife.com/2021/07/22/drone-taxi-market-predicted-to-grow-to-more-than-800-million-in-the-next-8-years-where-will-they-fly/>

### Dubai installing Airobotics’ drone stations to support police response across the city July 20, 2021 Jenny Beechener UAS traffic management news, Urban air mobility



A network of pre-positioned drone bases across Dubai enables the police force to respond to an incident anywhere in the United Arab Emirates.

“The quadcopters, supplied by Israeli company Airobotics, will operate



## UAS and SmallSat Weekly News

from base stations **during the Expo 2020 event** starting in October, an exhibition said to be the third largest event in the world after the Olympics and the World Cup. The drones **will reduce police response time from 4.4 minutes to 1 minute** according to a tweet from Dubai's ruler Sheikh Mohammed bin Rashid Al Maktoum.

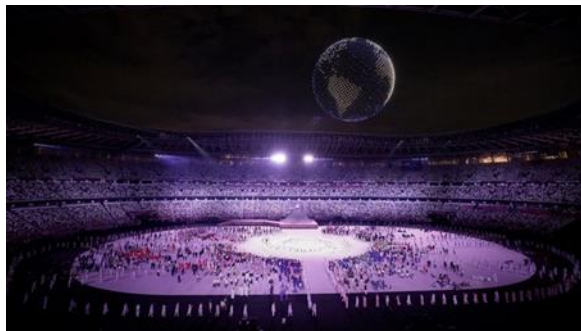
"Each base has a sliding roof that allows the drones to enter and exit. They can fly pre-programmed patrols or be dispatched to a specific location, allowing an operator at police headquarters to inspect the scene or follow a suspicious individual or vehicle and pass data to other police units.

"At 1.8 meters wide, the quadcopters are larger than consumer drones. The base station relays communications and incorporates a robot arm to swap out the drone's batteries, allowing it to land and take off immediately with no delay for recharging".

<https://www.unmannedairspace.info/latest-news-and-information/dubai-installing-airobotics-pre-positioned-drone-stations-to-support-police-response-units-across-the-city/>

## Watch 1,824 drones light up the sky at Tokyo Olympics opening ceremony

Ishveena Singh Jul. 23rd 2021



It's on. After a year-long delay, the Tokyo 2020 Olympics have finally begun, albeit in the shadow of COVID-19. The opening ceremony today at the \$1.5 billion Olympic Stadium was an extravaganza that was both celebratory and subdued. But our favorite part came right toward the end when more than 1,800 drones took to the skies to form a globe over the stadium as

artists from five continents sang Imagine.

A great alternative to fireworks, drone light shows can really turn it up a notch with hundreds of light-equipped robots flying around the sky in formation, creating shapes, objects, words, and anything else you could think of. The spectacular drone display was programmed by Intel, who first brought drones to the Winter Olympics in 2018.

For social media expert Lance Ulanoff, these drones were just what he needed to "believe" in the Tokyo 2020 Olympics again. Ulanoff notes in a stirring blog post:



## UAS and SmallSat Weekly News

The camera shifted to the sky and there they were 1,824 drones, initially flying in what looked like a massive, spherical configuration of blocks. The shapes kept rotating and shifting against each other, and some turned bright blue. As I watched, transfixed, the drones configured into a smoothly rotating Planet Earth. It was breathtaking. All eyes cast skyward as the drone earth spun high over the stadium. I caught my breath and realized I was moved. They were making me believe in the Olympics again. <https://dronedj.com/2021/07/23/tokyo-olympics-drones-opening-ceremony/#more-63581>

## MEET THE OTHER INDUSTRY THAT PROFITS WHEN THE DRONE INDUSTRY

**THRIVES** June 30, 2021 Sally French News



When the drone industry thrives, so does another industry: **the anti-drone industry.**

San Francisco-based, self-described “smart airspace security” company Dedrone in June 2021 announced that it had reached a milestone of **1,000** sensors sold worldwide. They were sold to clients across **33 different countries** and are designed to detect, identify, and locates nearly 250 drone types, including DJI, Autel, Parrot, andYuneec.

By using machine-learning and AI validation, Dedrone can detect specific types of drones in the air. In countries where it’s legal (which is not the U.S.) it can also mitigate rogue drones while they’re in the air.

There’s tons of revenue growth in the broader drone industry. And accordingly, Dedrone told the Drone Girl that — besides the sensors milestone — its own revenue growth exceeded 250% year-over-year. Its customers primarily consist of defense and homeland security, critical infrastructure, airports, correctional facilities and corporate enterprises. Notable it provides airspace security to four of the G7 nation governments, including the [United States Department of Defense](https://www.thedronegirl.com/2021/07/23/dedrone-sensors-milestone-sales/). <https://www.thedronegirl.com/2021/07/23/dedrone-sensors-milestone-sales/>

## Even as it fights COVID-19, Kenya turns to drones in battling longtime malaria foe

Bruce Crumley Jul. 23rd 2021

Despite the advent and surge of the COVID-19 virus commanding most of the world’s medical attention, pre-pandemic threats to life and health around the globe remain as active and



## UAS and SmallSat Weekly News

dangerous as ever. In addressing one of those, Kenya has said it will begin using drones in its long and ongoing battle against **malaria**.



Kenya announced its embrace of drones in that fight during its national Malaria Action Day Thursday. Sensor-equipped uncrewed aerial vehicles will be used to identify and photograph mosquito breeding sites, particularly those in remote areas or otherwise difficult to access. Data from that imagery will be tapped to create maps for return flights to spray the areas.

“We are focused on larviciding so that we kill the mosquitoes before they breed,” Kenyan Health Cabinet Secretary Mutahi Kagwe said in announcing the plan. “The drones are able to identify breeding sites and generate maps to guide action.”

Kenya suffers an estimated 3.5 million new clinical cases each year – one every seven seconds – which are responsible for 10,700 annual deaths. The disease costs the country 12 million days of work every year. According to World Health Organization statistics, 229 million new malaria infections were reported in 2019 worldwide, leading to 409,000 deaths. Prevention and eradication strategies, it added, averted 1.5 billion new cases, while treatment avoided 7.6 million deaths. <https://dronedj.com/2021/07/23/even-as-it-fights-new-covid-19-threats-kenya-turns-to-drones-in-battling-longtime-malaria-foe/#more-63528>

## Misappropriation lawsuit between eVTOL rivals signals lucrative business activity

Bruce Crumley Jul. 23rd 2021



*Archer's eVTOL Maker plane*

One sure sign of a budding sector about to blossom for business is aspiring companies siccing corporate lawyers on each other. That's what's happening now in a misappropriation lawsuit between electric vertical take-off and landing rivals Archer and Wisk Aero.

This week, Judge William Orrick of the U.S. Court for the Northern District of California denied a preliminary injunction filed by Wisk Aero to prohibit Archer from using or disclosing any information covered in its wider misappropriation lawsuit against its rival eVTOL craft manufacturer. That litigation accuses Archer of benefitting from development materials of its Cora plane that were downloaded by a former Wisk engineer who left to work for Archer. That



## UAS and SmallSat Weekly News

data, the Wisk case claims, served as the basis for Archer's design of its Maker aircraft featuring 12 rotors, 6 of which tilt. As such, Wisk sought the injunction to block Archer from using what it says its lawsuit will prove was illicitly obtained information essential to the Maker's creation. Request denied.

Yet as important as Wednesday's initial ruling on that request was, it probably won't change the timing or shape of eVTOL transportation when craft and services hit markets later this decade. Archer says it expects to begin production of electric plans in 2024.

What it does affect is a looming deal to take Archer public worth about \$3.8 billion. That involves Archer bagging \$1.1 billion in a merger with special purpose acquisition company Atlas Crest Investment Corp ahead of its Wall Street flotation. Granting Wisk's injunction would have essentially frozen Archer's ability to use or talk about any of the disputed design data until a ruling on the wider case was handed down – something close to a death blow to its NYSE plans. <https://dronedj.com/2021/07/23/misappropriation-lawsuit-between-evtol-rivals-signals-nearing-of-lucrative-business-activity/>

### **USAF orders Puma 3 AE and Raven UAS from AeroVironment** 23rd July 2021 The Shephard News Team



AeroVironment has received an order for Puma 3 AE and [Raven UAS systems](#) from the USAF, totaling **\$15.9million**. The orders were received on 19 April 2021 and 6 May 2021. The Puma 3 AE systems and spares were delivered on 30 April 2021, while the delivery of the Raven spares is expected in November 2021.

The all-environment Puma 3 AE and Mantis i45 EO/IR sensor suite empowers operators with extended flight time and a level of imaging capability **never before available** in the tactical UAS class.

The Puma 3 AE is hand-launched and has a wingspan of 9.2ft, weighs 15lb, can operate for up to 2.5h and has a range of 12.4 to 37.2miles – with AeroVironment's Long-Range Tracking Antenna.

The Raven system is designed for rapid deployment and high mobility for operation requiring low-altitude intelligence, surveillance, and reconnaissance. It has a wingspan of 4.5ft, weighs 4.2lb and has an operational range of 6,2 miles.





## UAS and SmallSat Weekly News

Both systems can be operated using AeroVironment's [Crysalis ground control solution](https://www.shephardmedia.com/news/air-warfare/usaf-orders-puma-3-ae-and-raven-uas-aerovironment/?utm_campaign=1869092_Daily%20News%20Alerts%20-%2019th%20July%20Onwards%20%28TruPredict%29&utm_medium=email&utm_source=dotmailer&utm_i=4GWN,14278,6N67IO,52ROM,1). [https://www.shephardmedia.com/news/air-warfare/usaf-orders-puma-3-ae-and-raven-uas-aerovironment/?utm\\_campaign=1869092\\_Daily%20News%20Alerts%20-%2019th%20July%20Onwards%20%28TruPredict%29&utm\\_medium=email&utm\\_source=dotmailer&utm\\_i=4GWN,14278,6N67IO,52ROM,1](https://www.shephardmedia.com/news/air-warfare/usaf-orders-puma-3-ae-and-raven-uas-aerovironment/?utm_campaign=1869092_Daily%20News%20Alerts%20-%2019th%20July%20Onwards%20%28TruPredict%29&utm_medium=email&utm_source=dotmailer&utm_i=4GWN,14278,6N67IO,52ROM,1)

25Jul21

### North Carolina is testing drones to get emergency supplies to Ocracoke

ASSOCIATED PRESS JUL 24, 2021



OCRACOKE — North Carolina transportation officials say successful drone flights this week to Ocracoke have them hopeful that it may soon get easier to deliver vital supplies to the remote Outer Banks island amid bad weather.

The North Carolina Department of Transportation's Division of Aviation and U.S.-based drone logistics company **Volansi** completed two successful trial flights of a delivery drone

The tests conducted Thursday involved an eight-mile round-trip flight averaging 18 minutes in flight time. The first delivered a small survival kit, space blankets and a chocolate muffin to Ocracoke, while the second delivered bottles of water, according to the news release.

"This was just a small trial, but we hope to continue scaling this up to larger payloads and longer flights," said Ben Spain, the department's unmanned aerial systems program manager. "Long-term, we could see deliveries coming to Ocracoke all the way from the mainland."

<https://www.pilotonline.com/obx/vp-nw-ocracoke-drone-supplies-20210724-73k5vg3p45f2rcexiwccnrofne-story.html#nt=pf-double%20chain~middle-chain-1~feed-driven%20flex%20feature~automated~unnamed-feature~73K5VG3P45F2RCEXIWCCNROFNE~1~8~1~4~art%20yes>

25Jul21

### Drones inspect waste sites at Savannah River Jul 23, 2021



*Savannah River National Laboratory employees Dalton Hare, left, and Jeff Steedley prepare a drone for flight to inspect engineered protective covers at remediated waste sites at the Savannah River Site.*



## UAS and SmallSat Weekly News



*A camera-mounted drone soars above the Savannah River Site as it inspects engineered protective covers at remediated waste sites.*

AIKEN – For the **first time**, camera-mounted drones hovered, dipped, and glided above remediated waste sites at the Savannah River Site to ensure the structural integrity of the protective covers.

“This is a new use for our drones, and it’s had a **huge impact** on meeting the needs of our federal and state regulators who annually conduct site inspections,” said Juana Maddox, project lead for contractor Savannah River Nuclear Solutions (SRNS).

Use of the drones for inspections is a shift from past practice in which teams of employees walked the cleanup sites — more than 100 acres of land combined — to inspect the covers that consist of geosynthetic material and soil, topped with grass sod.

The advantages of using drones for the inspections are significant, according to Troy Lorier, Unmanned Aircraft Systems operations manager and aviation safety officer with the Savannah River National Laboratory.

“We can quickly and efficiently ensure all aspects of the remediated waste site are in good condition in **a fraction of the time** required to walk the site,” Lorier said. “Plus, issues such as damaged fencing, erosion or where hogs have rooted up the soil can be quickly identified, and the exact location passed on to maintenance crews.” [https://www.johnsoncitypress.com/drones-inspect-waste-sites-at-srs/article\\_7b72d144-f804-51f4-ba48-7ce85ae514ba.html](https://www.johnsoncitypress.com/drones-inspect-waste-sites-at-srs/article_7b72d144-f804-51f4-ba48-7ce85ae514ba.html)

## Homegrown emergency UAV aids telecoms restoration in central China CGTN 23-Jul-2021



Communications infrastructure in central China's Henan Province was damaged during this week's heavy rainstorms, leaving people unable to contact family and friends.

To restore services urgently needed, the country deployed a large **self-developed** unmanned aerial vehicle to Mihe Township in Gongyi City, one of the most seriously ravaged regions in the province. After a 4.5-hour flight across 1,200 kilometers, the Wing Loong-2H UAV entered the areas where telecom services had been disrupted.





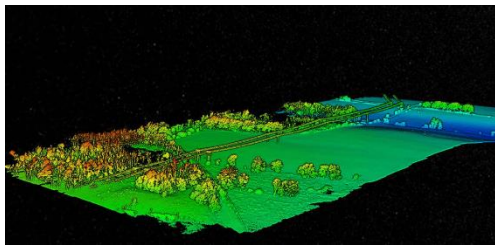
## UAS and SmallSat Weekly News

With the public mobile network base station on its aerial emergency communication platform, the UAV provided stable and continuous mobile signal coverage for an area of about **50 square kilometers**, according to the Ministry of Emergency Management. As of 23:20 Wednesday, the aerial base station had connected 3,572 users and generated internet traffic of 2,089.89 megabytes. As of Thursday morning, telecom services in Mihe Township had resumed.

At around 1 p.m. Thursday, Wing Loong-2H again departed for Henan. After a 4.5-hour flight, it arrived at a local hospital in the capital city Zhengzhou, providing network support for the rescue work there. <https://news.cgtn.com/news/2021-07-23/Homegrown-emergency-UAV-aids-telecoms-restoration-in-central-China-127VHvAvb0I/index.html>

## Keltbray Cuts Carbon Emissions Using Drones for Utility Inspections APPLICATION

DJI DRONES AT WORK HEADLINE NEWS GEORGINA FORD JULY 23, 2021



### *Kelbtray-LiDAR-1*

Keltbray, a specialist engineering business and provider of overhead line and substation services, uses drones to double inspection efficiency and cut carbon emissions by almost **50%**. The team benefits from zoom and thermal imagery during condition-based inspections, while photogrammetry and LiDAR provide enhanced mission planning and tackle challenges associated with traditional methods of powerline construction. Keltbray turned to the UK's leading drone supplier, heliguy, to adopt the technology.

Gordon Cranston, Project Construction Manager at Keltbray Energy, said: "Innovation is at the forefront of our business and drones are the future, bringing so many benefits to our operations. Through a relatively small investment, drones reduce business risks and costs, enable us to access and develop new marketplaces, and increase overall safety within high-risk environments, which naturally drives efficiency during projects."

<https://www.commercialdroneprofessional.com/keltbray-cuts-carbon-emissions-using-drones-for-utility-inspections/>



## UAS and SmallSat Weekly News

26Jul21

### **BREAKING: DOD Statement on DJI Drones** Miriam McNabb July 23, 2021



The U.S. Department of Defense has clarified their position on Chinese made drones. In a statement, the agency stated “systems produced by Da Jiang Innovations (DJI) pose potential threats to national security.”

The statement appears to be in response to a recent Pentagon audit, released to the public, which reviewed DJI’s Government Edition drones. That audit stated “The DJI Government Edition versions that were

tested, show **no malicious code** or intent and are **recommended** for use by government entities and forces working with US services.” It would appear the DOD division that performed the audit didn’t get the proverbial “No DJI” memo – but they’ve gotten it now.

“A recent report indicated that certain models of DJI systems had been found to be approved for procurement and operations for US government departments and agencies,” says the DOD statement on DJI. “**This report was inaccurate and uncoordinated**, and its unauthorized release is currently under review by the department.”

In 2018, DOD issued a ban on the purchase and use of all commercial off-the-shelf drones, regardless of manufacturer, due to cybersecurity concerns. Departments can apply for an exception to the rule under certain circumstances, and some agencies may be able to utilize commercial off the shelf platforms. However, as the DOD statement makes clear, exceptions will be made on a case-by-case basis. <https://dronelife.com/2021/07/23/breaking-dod-statement-on-dji-drones/>

### **NASA's Mars helicopter soars past 1-mile mark in 10th flight over Red Planet**

Tariq Malik - Editor-in-Chief 24July2021



The small chopper surpassed the 1-mile mark of its total flight distance on Saturday (July 24) when soared over a rocky region called “Raised Ridges” at its Jezero Crater home. The sortie was the **10th and highest trip** yet for Ingenuity, which arrived on Mars with NASA's [Perseverance rover](#) in February.

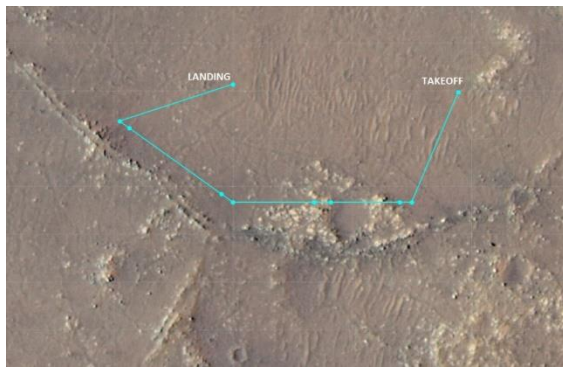
“With the Mars Helicopter’s flight success today, we crossed its **1-mile total distance flown** to date,” officials with NASA’s Jet Propulsion Laboratory in Pasadena, California wrote in



## UAS and SmallSat Weekly News

an [Instagram update](#) late Saturday. JPL is home to the mission control for Perseverance and Ingenuity.

[Flight 10 was the most challenging yet](#) for Ingenuity, with 10 different waypoints for the helicopter to hit as it flew over its "Raised Ridges" target. It reached a maximum altitude of 40 feet, a new record height, and flew about 310 feet. From take off to landing, the entire flight lasted just under 3 minutes. During the flight, Ingenuity was expected to snap a series of images, including ones that could help scientists create stereo images of the Raised Ridges rocks.



This annotated image of Mars' Jezero Crater depicts the ground track and waypoints for Ingenuity's tenth flight on July 24, 2021.

Ingenuity is now parked on its seventh airfield on Mars as mission scientists examine telemetry and images from the flight. "Aerial scouting aids the Perseverance Mars rover team in deciding what moves to make next," JPL officials wrote in

Saturday's [update](#). <https://www.space.com/mars-helicopter-ingenuity-completes-first-mile-10th-flight>

## AUVSI comments on proposal to allow the NTSB to investigate drone accidents

July 23, 2021 Philip Butterworth-Hayes Emerging regulations



The National Transportation Safety Board has proposed amending the definition of "Unmanned aircraft accident" by **removing the weight-based requirement** and replacing it with an **airworthiness approval requirement**. According to the agency "The weight threshold is no longer an appropriate criterion because unmanned aircraft systems under 300 lbs. are

operating in high-risk environments, such as beyond line-of-sight and over populated areas. The proposed definition will allow the NTSB to be notified and quickly respond to UAS events with safety significance."

"AUVSI is **in favor** of NTSB playing an active role in aviation safety and welcomes the NTSB's goal of **targeting its UAS investigative authority**. The recommendations made by AUVSI seek to ensure that when NTSB engages in an accident investigation, there will be tangible benefits to aviation safety. AUVSI also wants to ensure that the NTSB does not inadvertently stifle UAS



## UAS and SmallSat Weekly News

industry innovation and growth. Accordingly, AUVSI recommended minor modifications to the NPRM that take into account the **risk-based approach** to UAS operational and aircraft approval from the Federal Aviation Administration (FAA).” <https://www.unmannedairspace.info/latest-news-and-information/auvsi-comments-on-proposal-to-allow-the-ntsb-to-investigate-drone-accidents/>

**27Jul21**

**SpaceX or ULA to launch future Space Development Agency satellites** Sandra Erwin July 26, 2021



*The Space Development Agency's Transport Layer is a mesh network of satellites in low Earth orbit that will talk to each other and relay data to military forces on the ground. SDA will be seeking bids later this year for up to 150 satellites for the Transport Layer Tranche 1 projected to start launching in late 2024.*

WASHINGTON — Launch services for Space Development Agency satellites will be procured under the National Security Space Launch program run by the U.S. Space Force, according to an agency announcement. SDA is a Defense Department agency that is building a large constellation of small communications satellites in low Earth orbit known as the Transport Layer. The agency previously [awarded SpaceX a \\$150.4 million contract](#) to launch its first 28 satellites in 2022 and 2023. But future launches will be procured from either United Launch Alliance or SpaceX under the National Security Space Launch program (NSSL).

The next batch of satellites to be launched by SDA will be much larger than 28. The agency will be seeking bids later this year for up to **150 satellites** for the Transport Layer Tranche 1 projected to start launching in late 2024. <https://spacenews.com/spacex-or-ula-to-launch-future-space-development-agency-satellites/>

**The Day the Mexican Soil Shook Us: Drones in Humanitarian Aid** Contributed Guest Article Public Safety & Emergency Services JULY 27, 2021

That day everything changed. I remember the feelings that went through my body, everything around me vanished. Those 90 seconds of what began as a normal day in 2017 were probably the longest seconds of my entire life.



## UAS and SmallSat Weekly News



The activation of the sirens announced that the constant fear that Mexicans live with had become a reality: we were once again facing an earthquake of great intensity. For a minute and 30 seconds, the space and time of an entire country froze. The floor seemed like it had transformed from cement into rubber.

All the scenes of this earthquake were captured by different types of cameras, but **thanks to Drones**, we were able to see a reality that perhaps would have been impossible to see at any other point in history. Helping us to have a bird's eye view of this historical event, helping to provide important information to get us through this complicated situation.

Drone operators were able to quickly use their equipment to support different emergency agencies such as vital search and rescue tasks. The UAVs were used to verify buildings and collapsed areas and were essential to assess critical areas and assist in the search for missing persons. A few years ago, it would have been impossible to have these types of tools, but today, thanks to the low cost of the equipment and the democratization of Drone technology, it is possible. [https://www.commercialuavnews.com/public-safety/drones-in-humanitarian-aid?utm\\_source=marketo&utm\\_medium=email&utm\\_campaign=newsletter&utm\\_content=newsletter&mkt\\_tok=NzU2LUZXSi0wNjEAAAF-hz3z5Lc9ep5LNcW32H6lFRWUKclrtlPIhBh6MiDpxntGe1tNDu5cSpa532J3vzocrfROifGRIsSE9nAyF\\_M6qjm a2r4oloeG2e6lZPieRPOSQg](https://www.commercialuavnews.com/public-safety/drones-in-humanitarian-aid?utm_source=marketo&utm_medium=email&utm_campaign=newsletter&utm_content=newsletter&mkt_tok=NzU2LUZXSi0wNjEAAAF-hz3z5Lc9ep5LNcW32H6lFRWUKclrtlPIhBh6MiDpxntGe1tNDu5cSpa532J3vzocrfROifGRIsSE9nAyF_M6qjm a2r4oloeG2e6lZPieRPOSQg)

## Royal Navy tests drones for blood deliveries to battlefield medics Bruce Crumley Jul. 26th 2021



The Royal Navy put drones through a number of [military exercises](#) this month, including making deliveries of blood to battlefield doctors. The tests using UAVs ranged from “tactically re-supplying commandos with everything from ammunition for the assaulting troops to blood for combat medics.” As part of those, the Royal Navy said it used the craft in **swarms for the first time**.

The advantages of using drones for supplying blood to keep fallen soldiers alive is evident. The craft can travel faster than ground transport, and if shot down can be quickly replaced. One major drawback, however, has been the limited amount of plasma that can be delivered. The Royal Navy has partially solved that problem by using medium-heavy lift Malloy Aeronautics





## UAS and SmallSat Weekly News

TRV-150s UAVs. Those boast maximum payloads of 140 lbs. and can fly as much as to 43 miles on a total flight time of 36 minutes.

Using such craft, especially in swarm formation, could therefore get large quantities of blood to battlefield medics and improve efforts to save lives and limbs. The ability of a single controller to pilot swarms, meanwhile, means more free forces available to battle the enemy.

<https://dronedj.com/2021/07/26/royal-navy-tests-drones-for-blood-deliveries-to-battlefield-medics/>

## SAMAD Aerospace Completes Hover Tests for eStarling HEADLINE NEWS

INNOVATION GEORGINA FORD JULY 27, 2021



Designed for intercity transport, the eStarling aircraft will combine a helicopter's vertical ability to take off and land from almost anywhere, with the speed and range of a business jet.

With a semi blended wing body (BWB) design and powered by sustainable aviation fuel (SAF), the eStarling will be **the fastest** hybrid-electric eVTOL aircraft in the world **with the most extended range**.

With a cruising speed of **300 MPH and a range of 800 Miles**, the eStarling will reach the highest speeds of any eVTOL aircraft. It will transport passengers 'helipad to helipad', avoiding the need to travel to and from airports.

This month's hover tests were performed over a crane system, and they focused on validating the flight control system in hovering mode. The aircraft consumed 65% of the available power to take off and hover with a healthy power surplus for adverse weather conditions.

Speaking from his UK Head Office at Cranfield Technology Park, Dr Seyed Mohseni, CEO of SAMAD Aerospace, said: *"The importance of these recent flight tests is the initial validation of autopilot that has been developed by the SAMAD Aerospace team."*



Available to pre-order now for delivery in **2026**, the eStarling will reduce total travel time by utilizing locations much closer to the customer's point of departure and destination, including remote locations.

<https://www.commercialdroneprofessional.com/samad-aerospace-completes-hover-tests-for-estarling/>





## UAS and SmallSat Weekly News

### Watch astonishing video of Siberian falcon attacking a drone at 2,300 feet Bruce

Crumley Jul. 27th 2021



There are several remarkable aspects to a film captured by amateur uncrewed aerial vehicle (UAV) pilot Ilya Bardysh – for starters, its dizzying flight altitude of 3,200 feet. But the most arresting of all those is the clear video the drone took as a Saker falcon swooped in and attacked the craft right out of the sky.

Bardysh, 32, was flying the vehicle among the clouds over Siberia's Kamchatka peninsula when the falcon appeared in the distance, then swooped in to attack the drone head on. The camera captures the bird of prey swirling down, then jacking up vertically to reach out and grab the [craft in its talons](#). After initially destabilizing the falling UAV, the falcon circles back and grabs it again, bringing it almost all the way to the ground before dropping it. Then the meat-eating hunter pecks at the drone for a sample, and eventually flies off after the discovery that it offers a particularly unsatisfying plastic-y taste.

The UAV's sudden beeping probably didn't improve the falcon's appetite or mood, eliciting a flurry of protesting squawks before the creature flew away.

<https://dronedj.com/2021/07/27/watch-astonishing-video-of-siberian-falcon-attacking-a-drone-at-2300-feet/#more-63725>

28Jul21

### NASA Awards Electra.aero STTR Contract for eSTOL Aircraft Kelsey Reichmann July 27,

2021



*Electra's ultra-short takeoff and landing aircraft can deliver nearly triple the payload capacity, an order of magnitude longer ranges, and less than half the operating costs.*

Electra.aero has received a **\$125,000** small business technology transfer contract from NASA to mature its electric ultra-short takeoff and landing aircraft, the company announced in a July 27 press release.



## UAS and SmallSat Weekly News

The contract was secured with the partnership of Electra.aero and Dr. Alejandra Uranga, a Gabilan Assistant Professor at the University of Southern California's Department of Aerospace and Mechanical Engineering. The two partners will work on **computational models** of distributed electric propulsion, Ben Marchionna, director of technology and innovation at Electra.aero, told Avionics International.

"This contract will be focused on the development of low-order computational fluid dynamics models of blown lift aerodynamics from wing-propulsor interactions – i.e., distributed electric propulsion," Marchionna said. "The models will help improve the accuracy and precision of performance estimates and speed up design trades."

Electra.aero's aircraft will differ from other electric vertical takeoff and landing (eVTOL) aircraft because it uses electric propulsion and a technique called **blown lift** to takeoff over very short distances. The eSTOL aircraft Electra.aero is developing will be able to take off and land in less than **150 feet**. <https://www.aviationtoday.com/2021/07/27/nasa-awards-electra-aero-sttr-contract-estol-aircraft/>

### **Joby Aviation, aiming to go to market in 2024, completes 154-mile test flight** Aria

Alamalhodaiei@breadfrom July 27, 2021



Santa Cruz, California-based Joby Aviation has completed the longest test flight of an eVTOL to date: Its unnamed full-sized prototype aircraft concluded a trip of over 150 miles on a single charge, the company said Monday.

The test was completed at Joby's Electric Flight Base in Big Sur, California, earlier this month. It's the latest in a succession of secretive tests the company's been conducting, all part of its goal to achieve certification with the Federal Aviation Administration and start commercial operations.

The prototype spent more than an hour and 17 minutes in the air and covered 154.6 statute miles on a single battery charge, traveling along a predefined circuit. While the test flight was remotely piloted by Joby's chief test pilot, Justin Paines, the company plans to have pilots in the aircraft when it opens its ridesharing service for customers. <https://techcrunch.com/2021/07/27/joby-aviation-aiming-to-go-to-market-in-2024-completes-154-mile-test-flight/>



## UAS and SmallSat Weekly News

### General Atomics Unveils "LongShot" Aircraft-Launched Air-To-Air Combat Drone Rendering THOMAS NEWDICK JULY 27, 2021



General Atomics Aeronautical Systems, or GA-ASI, has revealed for the first time an artist's impression of a missile-carrying air-to-air combat drone that it is developing as part of the Defense Advanced Research Projects Agency's [LongShot program](#). GA-ASI, as well as [Lockheed Martin](#) and [Northrop Grumman](#), is working on this project, which calls for an unmanned aircraft that can be launched in

mid-air from a manned aircraft before flying into potentially more hazardous environments and engaging aerial threats using its own missiles.

The latest artwork, seen at the top of this article and initially revealed in a [recent article](#) on the GA-ASI website about [small unmanned aircraft systems](#), or SUAS, shows a stealthy-looking drone with a prominent chine around the center of its fuselage, the line tapering to meet a high-mounted fixed wing that apparently has only moderate sweep. There is a prominent V-shaped tail, and we can see a weapons bay on the side of the rear fuselage, with two doors, but it's not clear if there's a symmetrical one on the opposite side.

It's hard to gauge the size of GA-ASI LongShot, although it's clearly big enough to accommodate radar-guided air-to-air missiles, including what appears to be an AIM-120 [Advanced Medium-Range Air-to-Air Missile](#). With that in mind, it's notable that the LongShot concept artwork showed what appeared to be new, [smaller-sized AAM designs](#).

The powerplant would appear to be a rear-mounted turbine. This would reflect DARPA's own LongShot [concept art](#), showing a stealthy cruise missile-like vehicle, with pop-out fins. Overall, however, both the GA-ASI and Northrop Grumman LongShot concepts depict drones that are much more "aircraft-like" than the DARPA artwork, which seemed to have more in common with a cruise missile or [remote carrier](#). <https://www.thedrive.com/the-war-zone/41719/general-atomics-unveils-new-longshot-aircraft-launched-air-to-air-combat-drone-rendering>



## UAS and SmallSat Weekly News

### Volocopter Takes to the Skies at EAA AirVenture July 27, 2021 News



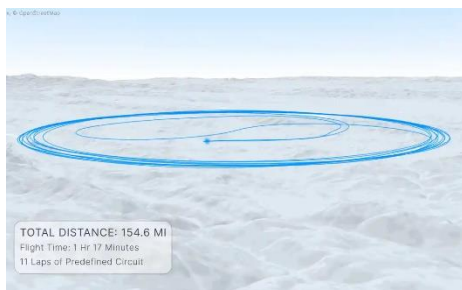
Volocopter, the pioneer of urban air mobility, flew at the Experimental Aircraft Association's AirVenture 2021 in Wisconsin. The Volocopter 2X flight was the **first ever** public crewed test flight of a fully electric vertical take-off and landing air taxi **in the US**. This successful flight marks a key milestone in Volocopter's plan to raise awareness of air taxis among populations around the globe and is critical to the long-term success of delivering advanced air mobility and urban air mobility.

The crewed Volocopter 2X took off at 2:45 PM CST for a **4-minute flight** at ~160 ft and a top speed of 18 mph over Wittman Regional Airport as part of EAA's AirVenture aviation celebration. Event attendees were able to watch it fly and take a seat in the VoloCity model at Volocopter's booth. [https://uasweekly.com/2021/07/27/volocopter-takes-to-the-skies-at-eaa-airventure/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=volocopter-takes-to-the-skies-at-eaa-airventure&utm\\_term=2021-07-28](https://uasweekly.com/2021/07/27/volocopter-takes-to-the-skies-at-eaa-airventure/?utm_source=rss&utm_medium=rss&utm_campaign=volocopter-takes-to-the-skies-at-eaa-airventure&utm_term=2021-07-28)

### Joby Completes Flight of More Than 150 Miles with Electric Vertical Take-Off Air Taxi JUL 27, 2021



Santa Cruz, CA, Jul 27, 2021 — Joby Aero Inc. ("Joby"), a California-based company developing an all-electric air taxi for commercial passenger service, today announced it had achieved an important milestone in the development of its aircraft, flying a full-size prototype vehicle more than 150 miles on a single charge, including a vertical take-off and landing.



The flight was completed at Joby's Electric Flight Base in Big Sur, CA earlier this month as part of the company's ongoing flight test campaign. The aircraft, piloted from the ground by Joby's Chief Test Pilot, Justin Paines, took off vertically before transitioning to forward flight and completing 11 laps of a predefined circuit. After more than 1 hour and 17 minutes in the air, the aircraft landed vertically, having covered a total distance of 154.6 statute miles.



## UAS and SmallSat Weekly News

Commenting on the milestone, JoeBen Bevirt, founder and CEO of Joby, said: “We’ve achieved something that **many thought impossible** with today’s battery technology.

<https://www.jobyaviation.com/news/joby-completes-flight-of-more-than-150-miles/>

29Jul21

### Intel and Dollywood’s behind-the-scenes video explains how drone light shows work

Ishveena Singh Jul. 28th 2021



Dollywood, one of the best theme parks in the world, is [running drone light shows](#) until July 31 as part of its 2021 summer extravaganza. The production of this drone display, which is integrated into a choreographed fireworks show, is said to have cost a **half-million dollars**. And now, a new video offers a behind-the-scenes look at the preparation that goes into putting together a drone show that’s both stunning and safe, day after day.

Every evening, around **400** dancing drones take to the skies to create spectacular animations for a Dollywood-centric story.



*Each base station can hold up to six Intel drones that have a flying time of five to six minutes.*

A new video gives an in-depth look into how a drone light show is brought to life. The video shows hundreds of drones being set out in an airfield every day before the show, where each drone is individually inspected for visual damage. The good folks at Intel also keep an eye out for the weather forecast and the changing wind conditions. They are also constantly scanning the skies for any unidentified flying object intruding on their airspace.

Intel’s technology, meanwhile, is sophisticated enough to allow the drone show to be conducted with just one pilot and one computer – with the click of a button. But before that button is ready to be clicked, there is an extensive amount of effort that goes into project management and ensuring impeccable coordination. <https://dronedj.com/2021/07/28/intel-drone-light-show-behind-the-scenes-video/#more-63784>





## UAS and SmallSat Weekly News

### **AURA Network Systems Closes \$30.9 million for Commercial Drones** Miriam

McNabb July 28, 2021



[AURA Network Systems](#) has closed a \$30.9 million Series A funding round. "It is the latest milestone for the company, which operates the nation's only coast- to-coast network providing secure and reliable voice and data communications,"

AURA has taken a leadership position in the commercial drone community over the last year, being named by NASA as a National Campaign partner and by Federal Aviation Administration to the [BVLOS rulemaking committee](#).

In addition, a January Federal Communications Commission ruling will allow AURA "to expand its network and foster UAS operations at all altitudes across the nation, not just the relatively low-level operations allowed today." Combined with its initial financing of \$7.5 million, the latest round of funding brings the company's total raise to **\$38.4 million**. "We're well capitalized to advance AURA's technology and capabilities to safely integrate higher levels of autonomy into the U.S. airspace – not only for the UAS market but also many types of manned missions." explained AURA CEO Bill Tolpegin. <https://dronedj.com/2021/07/28/intel-drone-light-show-behind-the-scenes-video/#more-63784>

### **UK Orders 13 Additional General Atomics MQ-9B Drones for RAF Protector**

**Program** Angeline Leishman July 26, 2021



Each MQ-9B under the Protector program features X-band satellite communications capabilities, U.K. weapon system support and various onboard sensors such as an electro-optical sensor ball and the Lynx multi-mode radar.

[Linden Blue](#), CEO of General Atomics Aeronautical Systems, said the drone is intended to provide the Royal Air Force with reconnaissance capability, helping ensure the security of the country and its allies.

The first Protector drone under the production contract will undergo RAF's test and evaluation program in the U.S. before heading to its home base in 2022. The fleet of GA-developed UAS





## UAS and SmallSat Weekly News

will enter service in 2024. <https://blog.executivebiz.com/2021/07/uk-orders-13-additional-general-atomics-mq-9b-drones-for-raf-protector-program/>

### Japan Post Invests 3 billion Yen for Commercial Drone Delivery by 2023 Miriam McNabb July 28, 2021



Japan's IT Media reports that Japan Post has invested 3 billion yen – more than \$27,000,000 - in drone manufacturer [ACSL](#) drone delivery technology to implement commercial mail delivery in 2023.

Delivering mail in an increasing challenge in depopulated and remote areas of Japan. A shortage of delivery personnel increases the difficulty. Drones present one solution to the problem, and Japan Post and ACSL have been conducting drone delivery experiments **since 2016**.

Current trials have successfully delivered packages and mail to private homes. Japan Post and ACSL envision a logistics process that could include package and mail delivery by drones to community bases such as remote islands and mountain villages; private homes; and to local post offices and convenience stores.

Drone delivery is becoming an increasingly realistic and valuable solution to the challenges facing mail delivery services around the world. Royal Mail has demonstrated successful mail [delivery to Isle of Mull](#) and [inter-island parcel delivery](#) across the Scillies. Swiss Mail and Australian Post have also trialed mail delivery by drone. <https://dronelife.com/2021/07/28/mail-delivery-by-drone-japan-post/>

30Jul21

### Air Force Could Be Using Air Taxis in 2023 Kelsey Reichmann July 29, 2021



The U.S. Air Force's [Agility Prime program](#) has been investing in the development of electric air taxis and could have one of these aircraft in use by 2023, Col. Nathan Diller, AFWERX director, said during AUVSI's virtual Unmanned Systems Defense 2021 keynote on July 28. Since Agility Prime was launched in April of 2020, the program has awarded military airworthiness certificates and over 200 small business

technology transfer contracts.



## UAS and SmallSat Weekly News

In December of 2020, Agility Prime awarded the first electric vertical takeoff and landing military airworthiness to [Joby Aviation](#), now Joby Aero. Now, four companies—Joby, Lift, Beta Technologies, and Kitty Hawk—all have military airworthiness certificates. Diller said these certificates help to reduce regulatory risk and allow the military to compensate companies for test flights.

“We're looking to help the regulatory risk reduction and we've been able to show that just over the last year, with four of our aircraft going through our Air Force airworthiness processes,” Col. Nathan Diller, AFWERX director said. “We had first Joby followed by Lift, Beta, and most recently Kitty Hawk...These early flight test opportunities, early airworthiness, also gives us an opportunity to pay companies for directed government flight test, so in the near term helping to reduce that financial risk by these early adoption opportunities.”

Agility Prime awarded [Beta's ALIA](#) eVTOL aircraft the first electric aircraft airworthiness certificate for manned flight in May of 2021. <https://www.aviationtoday.com/2021/07/29/air-force-using-air-taxis-2023/>

### **GeoOptics to launch next-generation Earth science constellation** Jeff Foust July 29, 2021



WASHINGTON — GeoOptics is planning to deploy a constellation of dozens of **smallsats** over the next five years to collect weather and other Earth science data for government and commercial customers.

The Pasadena, California-based company announced July 29 that it will start launching next year a line of satellites called CICERO-2 that are upgraded versions of the CICERO satellites it has previously launched to collect global navigation satellite system (GNSS) radio occultation data used in weather forecasting.

The CICERO-2 satellites will continue to collect GNSS radio occultation data but will also receive GNSS signals reflected off the Earth to measure ocean winds, soil moisture and other surface conditions. NASA's Cyclone Global Navigation Satellite System (CYGNSS), a set of eight smallsats launched in 2016, demonstrated that technology for studying tropical weather systems. The satellites will also be able to measure heavy precipitation through a technique called polarimetric radio occultation, again using GNSS signals.



## UAS and SmallSat Weekly News

While using a universal instrument, there will be some customization of the satellites. “Each satellite will likely make multiple measurements, but not all,” Alex Saltman, chief executive of GeoOptics, said in an interview, depending on factors such as their orbits. While the original CICERO satellites were 6U cubesats, the new satellites will be a mix of 6U and 12U cubesats, with a few possibly larger.

The first CICERO-2 satellites will launch in early 2022, with more to follow later in the year. The long-term goal is to launch about 50 over five years. <https://spacenews.com/geooptics-to-launch-next-generation-earth-science-constellation/>