



UAS and SmallSat Weekly News

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AeroVironment Introduces Visual Navigation System Across GPS-Contested Environments September 15, 2022 News



[AeroVironment, Inc.](#) today introduced Puma™ VNS, a visual-based navigation system for small unmanned aircraft systems that will enable GPS-denied navigation across GPS-contested environments.

The system will provide operators with advanced navigation capabilities and will enable the integration of future autonomy capabilities.

The next-generation navigation system features a suite of down-looking sensors that gather imagery data and track features on the ground as well as an embedded module to process and determine the location of an aircraft while it is in flight. Designed with the operator in mind, the system automatically transitions to and from GPS-denied navigation mode without input from the operator. https://uasweekly.com/2022/09/15/aerovironment-introduces-puma-vns-a-visual-based-navigation-system-that-enables-gps-denied-navigation-across-gps-contested-environments/?utm_source=rss&utm_medium=rss&utm_campaign=aerovironment-introduces-puma-vns-a-visual-based-navigation-system-that-enables-gps-denied-navigation-across-gps-contested-environments&utm_term=2022-09-16

Commercial UAV Expo 2022 Surpasses All Prior Records: 232 Exhibitors and 4,100 Registrants September 15, 2022 News



Commercial drone professionals gathered last week for Commercial UAV Expo 2022, held September 6-8, 2022, at Caesars Forum in Las Vegas. The eighth annual event had 232 exhibitors and 3,405 verified professionals on-site of more than 4,100 registrants from 60 countries and 48 US states, cementing itself as the leading international trade show and conference focusing on the integration and operation of commercial UAS.

The event kicked off Tuesday, September 6, with extensive pre-conference programming, including the [Live Outdoor Flying Demonstrations](#) put on in cooperation with Sundance Media Group and participating vendors Ascent AeroSystems, Autel Robotics, Commaris, Frontier Precision Unmanned, Skydio, Skyfront, Volatus Aerospace, and Wingtra. These vendors



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showcased new commercial drone solutions; a sophisticated a/v set up allowed attendees to see the data and images as they were being captured. A full recap of the Outdoor Demos as well as Tuesday's Exhibitor Showcase presentations can be found [here](#).

The sold-out exhibit hall floor opened Tuesday evening and was immediately flooded with attendees exploring solutions from among the **232 exhibitors, showcasing solutions in 340 booths**. https://uasweekly.com/2022/09/15/commercial-uav-expo-2022-surpasses-all-prior-records-with-232-exhibitors-and-4100-registrants/?utm_source=rss&utm_medium=rss&utm_campaign=commercial-uav-expo-2022-surpasses-all-prior-records-with-232-exhibitors-and-4100-registrants&utm_term=2022-09-16

Interested in a federal career? The FAA is hiring drone pilots Ishveena Singh - Sep. 16th



Do you want to turn your drone flying experience into a career with the US government? The Federal Aviation Administration (FAA) is hiring specialists to manage flight plans and test equipment to ensure drones are flown safely.

Two full-time vacancies for "Airway Transportation Systems Specialists (UAS Operators)" are currently open at the FAA in Flight Program Operations, Aircraft Operations Directorate.

The specialized experience that the FAA is looking for includes drone pilot experience (both manual and autonomous aircraft qualify); familiarity with command and control systems; an understanding of the spatial coordinate systems, contours, and other map elements; as well as experience of working with geophysical instruments such as magnetometers, electromagnetic sensors, Ground Penetrating Radar, or other geophysical sensors.

Performing drone equipment testing, troubleshooting, and maintenance, including post-mission reporting requirements

You can find the [complete details of this vacancy here](#) and apply by September 22, 2022, to qualify. A career with the US government comes with a range of benefits for both the employee and their family, and if you possess a Part 107 Remote Pilot Certificate and Third Class Medical Certificate, it might just turn out to be a great opportunity. <https://dronedj.com/2022/09/16/faa-drone-pilot-job-vacancy/#more-86753>



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Ukraine's R18 drone credited with inflicting \$130 million in Russian army losses

[Bruce Crumley](#) - Sep. 16th 2022



According to the [Ukraine](#) drone unit [Aerorozvidka](#), the domestically developed R18 [UAV deployed in the ongoing war](#) with Russia has already inflicted \$130 million in losses of various types of enemy material, or about \$670 in military assets vaporized per every dollar the craft costs to produce.

Aerorozvidka made the claim in a [Reddit post](#) published Thursday. Although unverifiable, the \$130 million tally is even more eye-opening against the Aerorozvidka qualifier that not all Ukraine units using R18 have reported their mission figures – meaning the potential damage wreaked could be greater still.

The R18 went into operation in 2019 after a two-year development effort Aerorozvidka launched to help battle [Russian](#)-backed separatists in eastern Ukraine. The octocopter has been a workhorse – and some claim hero – in the nation's defense of Moscow's invasion, and has become the icon of how scrappy [Ukraine forces have managed to halt](#) – and currently force the retreat – of a [purportedly better armed](#) and financed army.



According to Aerorozvidka's [page on the drone](#), the Ukraine's 5-kilogram R18 has a maximum flight distance of four kilometers, or 40 minutes per battery charge. It can drop its deadly payload from 100 to 300 meters up, with the [astonishing accuracy](#) of within a meter radius of the intended target when at maximum altitude. The UAV's efficacy was enhanced by loading thermal sensors which has also permitted nighttime strikes.

Aerorozvidka says the R18 costs about \$40,000 per unit, meaning pretty much any Russian personnel carrier, tank, munitions dump, or other material [Ukraine pilots hit](#) with the two onboard munitions will offset the procurement price in a single go.

<https://dronedj.com/2022/09/16/aerorozvidka-ukraine-drone-r18/#more-86729>



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18Sep22

The first drone to collect weather data in the U.S. may launch this fall Michael
Page September 17, 2022



*A Meteodrone test flight in the countryside near Meteomatics's headquarters in St. Gallen, **Switzerland**.*

Grand Sky is looking into how to better predict weather conditions for its drone flights. The solution? Use another drone.

Pending government approval, the “Meteodrone” will launch this fall and be the first drone to record weather data used operationally in the United States. Other drones, such as unmanned aircrafts called [Global Hawks](#) and [robotic surfboards](#), operate in the U.S. and collect weather data but are primarily used for research purposes or for one-off missions. However, the data collected from Meteodrone would be fed constantly into computer models to improve forecasts for drone flight operations — not just during a storm.



The Meteodrone isn't your average drone. It's packed with small weather instruments, which can measure temperature, dew point, relative humidity, wind speed and pressure. An onboard camera can take valuable images as storm systems develop and progress.

It's also designed to withstand a range of intense weather, armed with safety features like heated propellers to ward off icing and an emergency parachute. A pilot can remotely launch the drone into the atmosphere and send it up to **20,000 feet**, sampling the atmosphere both on its way up and down in a straight line.

<https://www.washingtonpost.com/climate-environment/2022/09/17/first-drone-collect-weather-data-us-launches-this-fall/>

19Sep22

The Survey of India: Garuda Aerospace Maps 7000 Villages by Drone in 1 Year Miriam McNabb September 16, 2022 by DRONELIFE Staff Writer Ian M. Crosby

Drone start-up [Garuda Aerospace](#) has completed a mapping project of 7,000 villages within Uttar Pradesh under the [Svemitva Scheme](#).



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The company won the tender from [The Survey of India](#) back in September 2021, granting authorization for the deployment of drones for large scale mapping and digitization of land records in rural areas. This authorization provides landowners and farmers with precise digital land certificates, as well as an exclusive ID that entitles them to a meticulous layout of their full property. To conduct these mapping operations, Garuda Aerospace deployed **15 fixed-wing drones**, each capable of mapping at a speed of 8 to 10 sq kms per hour.

Through the agency of the Svamitva Scheme, Garuda Aerospace intends to play a major role in carrying out the Prime Minister's goal of digitizing land records and eliminating land and property disputes. Garuda Aerospace has succeeded in mapping 7,000 villages out of 1,40,000 which is to date the highest number of villages mapped by a drone company within the span of a year. The company seeks to improve farming techniques through the advancement of technology, the reduction of costs, and through offering drone loans and subsidies.

Garuda Aerospace possesses a drone fleet of 400 drones and a highly qualified team of more than 500 pilots throughout 26 cities. Recently, the company initiated its **\$30 million Series A** round at a \$250 million valuation. Garuda Aerospace's Brand Ambassador, former Indian cricket team captain Mahendra Singh, has also invested in the company.

<https://dronelife.com/2022/09/16/the-survey-of-india-garuda-aerospace-maps-7000-villages-by-drone-in-1-year/>

Top Models DJI Drones Ready for Remote ID Miriam McNabb September 16, 2022 by DRONELIFE Staff Writer Ian M. Crosby



Civilian drones and aerial imaging technology leader [DJI](#) has become the **first** drone manufacturer to receive Federal Aviation Administration (FAA) approval in compliance with the FAA's Remote Identification protocol.

The Declarations of Compliance granted to DJI pertain to its seven most recent and popular drone models. Newly manufactured models will meet Remote ID requirements, while owners of existing models will have access to a free firmware update, available for download later. The company is also pursuing FAA approval for further drone models, which will be posted on the [FAA website](#) upon being approved. Models with Remote ID functionality can be identified by the notation "ASTM F3411-22a-RID-B" included on the drone's regulatory label.



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For newly manufactured drones requiring FAA registration, the first Remote ID compliance deadline is September 16, 2022, though the FAA may delay enforcing it until December 16, 2022. Customers already in possession of DJI drones are not yet required to take any action, as existing drones are not required to comply with FAA Remote ID regulations until September 16, 2023, prior to which DJI will provide firmware updates bringing most modern DJI drones into compliance. Upon their release, these updates will be available for installation at any point before September 16, 2023. Older models of DJI drones will receive the ability to comply with Remote ID through a separate add-on module, with more information to come in the following months. <https://dronelife.com/2022/09/16/top-models-dji-drones-ready-for-remote-id/>

SpaceX launched a Falcon 9 on Sunday after five consecutive days of delays Jamie Groh Florida Today



The Space Coast's 40th launch of the year lifted off at 8:18 p.m. EDT Sunday night, Sept. 18, from pad 40 at Cape Canaveral Space Force Station after enduring five consecutive days of delays due to poor weather. The SpaceX Falcon 9 flight marked the 61st dedicated Starlink mission and the 180th overall flight for the company,

176 of which have been hosted by Falcon 9.

The Falcon 9 first stage somersaulted and landed on the "Just Read the Instructions" drone ship stationed in the Atlantic Ocean about nine minutes after launch. Once returned to Port Canaveral in a few days, SpaceX will collect the booster for refurbishment and reuse on a future flight.

Dozens of Starlink satellites deployed from the Falcon 9's upper stage about 15 minutes after launch. The internet-beaming satellites will spend the next few days spacing out and raising their orbits before joining the more than **3,200 already in service**.

Starlink satellite internet service, which starts at \$110 a month plus a one-time fee of \$599 for equipment, boasts internet connectivity to remote and rural locations around the globe.

The company announced on Twitter Wednesday that because of "Starlink's space laser network," the service is now **available on all seven continents** including Antarctica where the National Science Foundation recently deployed Starlink user terminals at the McMurdo Station research facility. <https://www.floridatoday.com/story/tech/science/space/2022/09/18/spacex-finally-launches-its-falcon-9-starlink-mission-after-delays/10403012002/>



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Flyability bags \$15M in new funding to improve Elios 3 drone Ishveena Singh - Sep. 19th 2022



The funding comes as part of the Switzerland-based company's Series C, **on top of the \$7 million it had already closed.**

While Japan-based SBI Investment led the round, Flyability's backers also include some of its key customers. Investors Cargill and Dow, for example, have used Flyability's inspection technology to keep their workers out of potentially dangerous spaces during inspections. Dow's global robotics technology leader Marty Robinson says:

Flyability's constantly evolving technology has gone beyond simple confined space elimination for visual inspections to a more advanced platform, adding new sensors and capabilities for future expansion. Innovative robotic solutions like the Elios 3 continue to accelerate our sustainability and safety goals.

Elios 3 is billed as the **world's first collision-tolerant drone equipped with a LiDAR** sensor for indoor 3D mapping. It is powered by the company's new proprietary simultaneous localization and mapping engine called FlyAware.

A combination of computer vision, LiDAR technology, and Nvidia graphic engine, FlyAware acts as a centimeter-accurate indoor GPS for the drone, building real-time 3D maps and enabling the aircraft to sense its surroundings accurately. <https://dronedj.com/2022/09/19/flyability-funding-elios-3-drone/#more-86780>

Swiss Meteodrone provides real-time low-altitude weather outlook for UAV operators Bruce Crumley - Sep. 19th 2022



[Switzerland](#)'s Meteomatics wants to overcome the vagaries of local low-level weather conditions with its specially conceived [Meteodrone](#), which provides accurate real-time atmospheric data that also generates increasingly reliable forecasting.

The system flies the Meteodrone into weather systems at the [lowest atmospheric levels](#) – up to 6 kilometers high – and uses sensors and video to provide localized conditions, including



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temperature, humidity, air pressure, and wind speed and direction. That information is fed directly to a ground station whose computer generates a high-resolution model of the current situation as well as accurate hyper-local forecasts. The UAVs feature heated propellers to prevent icing, robust engines to overcome high winds and turbulence, and a parachute in case conditions bring it down.



Though weather forecasting has become quite dependable generally, the Meteodrone was developed to fill the information gap remaining in the so-called boundary atmospheric layer – especially the zone two kilometers above the ground where drones operate, and where weather can change unexpectedly and quickly. <https://dronedj.com/2022/09/19/meteodrone-weather/#more-86757>

20Sep22

FAA ALLOCATES NEARLY \$3 MILLION FOR DRONES IN DISASTER AND EMERGENCY RESPONSE

September 12, 2022 Sally French

The U.S. Department of Transportation announced last month that the Federal Aviation Administration had awarded a combined \$2.7 million to researchers, spread across five U.S. universities:

- University of Vermont: \$1,195,000
- University of Alabama Huntsville: \$828,070
- New Mexico State University: \$400,000
- North Carolina State University: \$200,000
- Kansas State University: \$145,000

This specific funding is allocated for research that uses drones in both natural and human-made disasters and how drones can support federal agencies, state and local disaster preparedness groups, and emergency response organizations.



A massive chunk — over \$1 million worth — of the funding is allocated to the University of Vermont's Spatial Analysis Lab, which has long been a leader in using drones for disaster response. The university has been using drones since 2011, and its drone program was born out of necessity when Tropical Storm Irene exposed gaps in Vermont's ability to rapidly acquire detailed and accurate imagery to inform disaster response and recovery. These days, the University of Vermont, which is



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based in Burlington, works with FEMA, state, and local agencies for everything from infrastructure inspection to invasive species mapping. It also claims to be the **first group** in the nation to use drones to respond to a rail accident.



Aerial view of a 2015 train derailment in Vermont captured by a drone.

This latest drone investment comprises the third round of 2022 ASSURE grants, which provides schools with funding through the [Alliance for System Safety of UAS through Research Excellence](#). So far in 2022, ASSURE has granted more than **\$21 million across 20 grants**. That included **\$4.4 million doled out in April** through the second funding round that focused on three areas: electromagnetic compatibility, detect and avoid classifications, and cybersecurity oversight. <https://www.thedronegirl.com/2022/09/20/faa-investment-assure-vermont/>

U.S. Navy Wants Its Carrier Air Wing 60% Uncrewed Brian Everstine September 19, 2022



The U.S. Navy is planning for at least 60% of its carrier air wing to be uncrewed, placing faith in the development of smaller, cheaper Collaborative Combat Aircraft to do a lot of the fighting in the future alongside Lockheed Martin F-35Cs and next-generation F/A-XXs.

- Boeing's Stingray is slated to blaze the trail
- Lockheed's control station is being designed to fly multiple drones
- 1,300 carrier-based combat aircraft under chief of naval operation's plan

The trailblazer for this is **Boeing's MQ-25 Stingray**. In addition to passing fuel, the uncrewed refueler is testing how future collaborative combat drones will work with Navy fighters and operate on a carrier, as well as how its Lockheed Martin-built MD-5 ground control station and its sole operator will control other future uncrewed aircraft for the service.

"With these unmanned aircraft, our plan is to pair them with other unmanned systems as well as our crewed platforms," says Cmdr. Nick Saunders, special programs branch chief in the Office of the Chief of Naval Operations. "What that's going to allow us to do is increase the sensing and striking capability of each individual platform, and therefore the striking and sensing capability of the air wing and the strike group." <https://aviationweek.com/shows-events/afa-air-space-cyber-conference/us-navy-wants-its-carrier-air-wing-60-uncrewed>



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SAIC to build small satellites with startup Rogue Space Sandra Erwin — September 20, 2022



NATIONAL HARBOR, Md. — SAIC is partnering with startup Rogue Space Systems to develop small satellites for in-space services, the companies announced Sept. 20.

Based in Reston, Virginia, SAIC is a \$7.4 billion government services technology contractor. Rogue Space is a two-year-old startup based in Laconia, New Hampshire. The company designed a cubesat known as Orbital Robot for in-orbit services such as inspection and repairs.

According to the agreement announced Tuesday at the Air, Space & Cyber conference, SAIC will integrate two Rogue cubesats for a planned 2023 mission. Going forward, SAIC will help develop Rogue's fleet of Orbital Robots for space situational awareness, in-space services, assembly, and manufacturing.

Part of SAIC's [space business strategy](#) is to partner with smallsat developers that need access to integration and testing facilities. <https://spacenews.com/saic-to-build-small-satellites-with-startup-rogue-space/>

A Plane in a Backpack? WingXpand Joins Techstars Accelerator Program Miriam McNabbon: September 19, 2022 by DRONELIFE Staff Writer Ian M. Crosby



St. Louis based drone startup [WingXpand](#) has been chosen from a pool of over 600 international companies to join [Techstars LA & Space Accelerator](#), a three-month program ending with a demo day for the tech and investor communities in December.



In partnership with the U.S. Space Force and NASA's Jet Propulsion Laboratory, the program is working to build the next frontier of aerospace, defense, and space technologies.

WingXpand was launched this past April by aerospace engineer James Barbieri, who possesses more than 10 years of industry experience, alongside Co-Founder & Chief Customer Officer Michelle Madaras. The company's



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launch followed its debut of the first ever 7-foot expandable plane with a compact frame enabling storage in a backpack. Offering rapid support for real-time observations and pattern recognition, this solution sees use in military and public safety missions in addition to a variety of other use cases, such as the monitoring of plant health and mapping for surveying and inspections. This solution combines the small size and simplicity of a quadcopter drone with the horsepower of airplane wings, enabling it to **fly 5 times longer**, while equipped with 10 times more onboard data collection tools than traditional drones. <https://dronelife.com/2022/09/19/a-plane-in-a-backpack-wingxpan-joints-techstars-accelerator-program/>

Heavy Fuel Engine to be Tested on Tactical UAV Sarah Simpson / 20 Sep 2022

US defense company AeroVironment Inc. has acquired the latest heavy fuel engine by Orbital UAV for testing on its JUMP® 20 tactical UAV.



[Orbital Corporation Ltd](#) has received an order from US defense technology company **AeroVironment Inc.** for the supply of the company's newest heavy fuel engine for assessment.

"We are delighted to confirm this new relationship with one of the most significant players in the US and global tactical UAS markets. The opportunity to work with AeroVironment is yet another demonstration of the diversification of our customer portfolio and the growing reputation of our heavy fuel engine technology," said Todd Alder, CEO and Managing Director of Orbital UAV.

Arcturus UAV, a leading provider of Group 2 and 3 UAS, was acquired by AeroVironment in February 2021, enabling the company to offer customers a complete set of Group 1 through 3 UAS (including the JUMP® 20 and Puma™ platforms), tactical missile systems (including the Switchblade® 600), high altitude pseudo-satellites and unmanned ground vehicle solutions. https://www.unmannedsystemstechnology.com/2022/09/heavy-fuel-engine-to-be-tested-on-tactical-uav/?utm_source=UST+eBrief&utm_campaign=7aae71e098-ust-ebrief_2022-sep-20&utm_medium=email&utm_term=0_6fc3c01e8d-7aae71e098-119747501&mc_cid=7aae71e098&mc_eid=0d642a9d48



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Up High, Down Low: Drones Impact Offshore Energy September 18, 2022 FROM NY TIMES

In the air, on land, and under the sea, drones are helping offshore energy companies improve safety, production, and maintenance. From wind turbines and oil rigs to underwater pipelines, drones are all over the place.



Drones are already being used to:

- Inspect offshore wind turbines
- Make small wind turbine blade repairs
- Inspect and monitor offshore rigs
- Inspect, clean, and repair subsea infrastructure
- Inspect flare stacks
- Deliver supplies to offshore assets

See examples of these projects in [Inside Unmanned Systems](#).

Energy companies are finding big benefits in using drones to conduct inspections of offshore energy facilities, monitor conditions on an ongoing basis, assess damage after an emergency, and map sites and assets. Drones are playing a vital role in the offshore energy industry, and that's why companies are investing in this technology.

Experts expect robots and drones to help improve work human employees do in the field. The machines [aren't expected to "steal jobs,"](#) but are positioned to help keep humans on the job safer and focused on things robots can't do. Whether up high or down low, drones are here to stay in energy. https://innovateenergynow.com/resources/up-high-down-low-drones-impact-offshore-energy-part-1?utm_campaign=InnovateEnergy%20Content&utm_medium=email&_hsmi=226479170&_hsenc=p2ANqtz-7L1DyJygEBBhSSINdbvE7ZOWtDGcnS85IrHiUp_OGW_0GcS1N8yh9FQWuAllggl0xJ85rc7DmM6Jl3jNCAifZ332rg&utm_content=226479170&utm_source=hs_email

Advanced AI Agent Flies MQ-20A With Sensor Payload Steve Trimble September 19, 2022

An uncrewed aircraft system flew for the first time aided by an advanced artificial intelligence (AI) technique developed by General Atomics Aeronautical Systems Inc., a company executive said on Sept. 19.



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The jet-powered MQ-20A Avenger UAS was trained using a Reinforcement Learning (RL) architecture for the company-funded, 30-min. demonstration, Michael Atwood, GA-ASI senior director of Advanced Programs, told Aviation Week on Sept. 19 at the Air, Space and Cyber conference outside Washington.

The RL architecture uses software code to define the boundaries of the operating envelope available to the MQ-20A, then trains the AI agent to calculate the best way to maneuver to an objective, Atwood said.

Lockheed Martin also contributed a TacIRST infrared search and track payload for the demonstration. The mission system allowed GA-ASI to operate a surveillance payload using an AI agent RL-based machine learning system. https://aviationweek.com/shows-events/afa-air-space-cyber-conference/advanced-ai-agent-flies-mq-20a-sensor-payload?elq2=dc2f68435b784a49802a00d2edb96acc&sp_eh=536b822f340988ca12deef6a0907ccae63850ee4cf07728d68baa3b8017155d

US Congress considers \$200m funding to boost drone infrastructure inspection

September 15, 2022 Jenny Beechener UAS traffic management news, Urban air mobility



The US House of Representatives has approved a bipartisan [bill](#) to support the investment of up to \$200 million in inspection services provided by Uncrewed Aerial Vehicles (UAS). The House of Representatives bill 5315 calls for the increased use of drones for the inspection of critical infrastructure, according to a report by [Done DJ](#).

The report says the draft legislation was introduced last year as a precursor to the identically named Drone Infrastructure Inspection Grant Act tabled by bipartisan sponsors in the Senate as a companion proposal last month.

Sponsored in the House by Arizona Democrat Greg Stanton, the legislation would free up \$100 million in competitive grants for the deployment of drones in conducting critical infrastructure inspection, maintenance, and construction projects. Both versions stipulate UAVs must be US-made to qualify for inclusion under the initiative.

Both bills additionally earmark another \$100 million for workforce training and education programs of pilots and technicians that will be needed to effectively perform drone



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infrastructure inspection missions and to analyze data collected from them.

<https://www.unmannedairspace.info/latest-news-and-information/us-parliament-considers-usd200m-funding-to-boost-drone-infrastructure-inspection/>

21Sep22

CH-4, WZ-7 drones spotted in PLA patrols near Taiwan island for 1st time Liu

Xuanzun Sep 18, 2022



The defense authority on the island of Taiwan on Saturday spotted a CH-4 armed reconnaissance drone of the Chinese People's Liberation Army (PLA) near the island for the first time, marking the **sixth type of drone** that has appeared in the region in September following the WZ-7 high-altitude reconnaissance drone that made its debut on Thursday.

More PLA drones are expected to join the PLA's routine patrols and exercises around Taiwan island in a move to safeguard national sovereignty and territorial integrity amid provocations by "Taiwan independence" secessionists and external interference forces, Chinese mainland experts said on Sunday.

Among **20 PLA aircraft** detected around island of Taiwan on Saturday, a CH-4 armed reconnaissance drone entered the island's self-proclaimed southwest air defense identification zone, according to a press release by the defense authority on the island published on the day.



WZ-7 high-altitude reconnaissance drone

Following US House Speaker Nancy Pelosi's provocative visit on Taiwan island last month and the PLA large scale exercises in response to that, the PLA has started to deploy drones for patrols around Taiwan, Fu Qianshao, a Chinese mainland military aviation expert, told the Global Times on Sunday.

<https://www.globaltimes.cn/page/202209/1275488.shtml>

A first look at the B-21 Raider bomber is coming soon Stephen Losey Sep 20



An artist's rendering shows a B-21 Raider in a hangar at Ellsworth Air Force Base, S.D., one of the future bases to host the new airframe.

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NATIONAL HARBOR, Md. — The [B-21 Raider](#), the Air Force's next stealth bomber, will be unveiled to the public for the first time in early December, Air Force acquisition chief Andrew Hunter said Tuesday. The [B-21's rollout](#) will take place sometime during the first week of December.

It will be the first time the Air Force has unveiled a new bomber since the B-2 Spirit's November 1988 debut at Air Force Plant 42 in Palmdale, California. The B-2's first flight took place in July 1989.

The new, Northrop Grumman-made bomber has so far only been glimpsed in concept art. Its first flight is expected to come sometime in 2023, a few months after the rollout. Northrop said in a release after Hunter's announcement that the date of the first flight will be set based on the results of ground tests. <https://www.airforcetimes.com/air/2022/09/20/a-first-look-at-the-b-21-raider-bomber-is-coming-soon/>

Boeing and Wisk Unveil Concept of Operations for Urban Air Mobility September 20, 2022



ARLINGTON, Va. — Boeing and its joint venture partner Wisk today released a roadmap for transitioning to a future where automated and **uncrewed** aircraft can safely carry passengers and cargo in urban and suburban areas. The [concept of operations](#) lays out the technology, regulatory and social recommendations needed to deploy Urban Air Mobility (UAM) in the United States and integrate it into the national airspace system.

The concept of operations begins by proposing bedrock principles for urban air mobility, including that flights should be safe and affordable for everyone. Additionally, the aircraft would be automated to reduce the load on air traffic controllers and pilots, and they would fly day or night under visual or instrument flight rules and be supported by **automated** onboard and ground-based systems.

"The important work we're sharing today provides a stepping stone in the advancement of UAM in the U.S. and the world," said Gary Gysin, CEO of Wisk, which has been working to bring to market the first all-electric, self-flying air taxi in the U.S. <https://wisk.aero/news/press-release/uam-conops/>



UAS and SmallSat Weekly News

Analytics Insight Announces 'World's 10 Best Drone Companies to Watch in 2022' Press SEP 14, 2022



Featuring as the **Cover Story** is **ESBAAR**, a provider of artificial intelligence (AI) and autonomous systems solutions based in Muscat, Oman. Other honorable companies include:

Newmind Robotics: Newmind Robotics creates robotics solutions, from fetching tennis balls, autonomously trimming plants, and automating navigation for large vehicles. It is also creating affordable outdoor autonomous robots.

InnovBest: InnovBest was designed to create differentiated AI applications that automate the decision-making process in its most laborious part, instead of BI analytics or spreadsheets.

Syntiant: Syntiant is enabling customized voice experiences at the edge, across multiple products including command control, and event detection, free from cloud connectivity. Its advanced chip solutions merge deep learning with semiconductor design.

Guavus: Guavus was founded in 2006 with the sole mission to provide real-time streaming analytics for CSPs. In 2017, the company was acquired by Thales and is now a part of the Digital Identity and Security global business unit.

ForwardX Robotics: ForwardX Robotics is an award-winning developer of intelligent robotics focusing on AI and its successful application within robotics. It offers the world's only visual autonomous mobile robot fleet for use in a wide range of business scenarios.

PLEN Robotics: PLEN Robotics utilizes robotics, IT, and artificial intelligence to produce IoT solutions that automatize the hospitality industry.

DJI: DJI is the global leader in manufacturing innovative drone and camera technology for commercial and recreational use.

Parrot: Parrot is a leading European group in the fast-growing industry of drones. The company is a real end-to-end drone group from hardware and software, to services, with the mission to move the industry forward with new standards for drones at work.

Skydio: Skydio is the leading drone manufacturer in the US and the world leader in autonomous flight. Skydio leverages AI to create the world's intelligent flying machines for use by



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consumers, enterprises, and governments. <https://www.suasnews.com/2022/09/analytics-insight-announces-worlds-10-best-drone-companies-to-watch-in-2022/>

AeroVironment Secures \$20.86 Million in Unmanned Aircraft Systems Foreign Military Sales September 21, 2022 Military | News



[AeroVironment, Inc.](#), a global leader in intelligent, multi-domain robotic systems, today announced it received **two** firm-fixed-price US Department of Defense Foreign Military Sales contract awards totaling \$20,868,105 to provide [Puma™ 3 AE](#) small unmanned aircraft system), initial spares packages, training and Contractor Logistics

Support to two allied nations.

AeroVironment's Puma 3 AE delivers mission critical capabilities in all environments. Puma 3 AE has a wingspan of 9.2 feet, weighs 15.4 pounds, and can operate up to 37.2 miles with AeroVironment's [Long-Range Tracking Antenna \(LRTA\)](#). Multi-mission capable, operators can easily swap Puma 3 AE's payloads quickly, selecting between the [Mantis™ i45](#) and the enhanced night variant, [Mantis i45 N](#). Puma 3 AE is launchable by hand, bungee, rail, or vehicle, and is recoverable by deep-stall landing, providing class-leading capabilities in challenging environments around the world. https://uasweekly.com/2022/09/21/aerovironment-secures-20-86-million-in-puma-3-ae-unmanned-aircraft-systems-foreign-military-sales-awards-for-allied-nations/?utm_source=rss&utm_medium=rss&utm_campaign=aerovironment-secures-20-86-million-in-puma-3-ae-unmanned-aircraft-systems-foreign-military-sales-awards-for-allied-nations&utm_term=2022-09-21

New eVTOL breaks the limitations of UAV performance September 21, 2022 News



DeltaQuad has launched the Evo, a fixed wing electric UAV with Vertical Takeoff and Landing capability for mapping, inspection, and surveillance. Designed with the latest insights in aerodynamics, the Evo is breaking old eVTOL flight times and mission limitations in both commercial and military configurations.

"About two years ago, we saw a rapidly growing demand for increased flight times and flexible payload options, with a lower total cost of ownership," says Douwe Zeeman, CEO of DeltaQuad.



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The company went back to the drawing board to incorporate these demands into a new design. Its innovative wing shape brings aerodynamic efficiency, improved wind resistance and the possibility to operate two sensor payloads simultaneously in a single flight.

The two universal payload bays, with a total carrying capacity of 3 kg, can house a vast range of sensors for surveillance, mapping, multispectral imagery, and LiDAR. The robust fiberglass, carbon and Kevlar airframe makes the Evo suitable for intensive use. With Auterion Skynode onboard, the Evo system can connect to [Auterion Suite](#), delivering data in real-time, while the drone is performing its mission.

DeltaQuad has successfully manufactured their current DeltaQuad Pro model since 2017 for a variety of markets worldwide, from agricultural to defense and geospatial to mining.

https://uasweekly.com/2022/09/21/new-evtol-breaks-the-limitations-of-uav-performance/?utm_source=rss&utm_medium=rss&utm_campaign=new-evtol-breaks-the-limitations-of-uav-performance&utm_term=2022-09-21

DeltaQuad's Evo eVTOL drone enables 4.5 hours of diversified aerial missions

Bruce Crumley - Sep. 21st 2022



Badhoevedorp-based DeltaQuad said this week its fixed-wing Evo eVTOL drone has entered the public beta phase of testing involving a select number of clients and other UAV operators. The company is part of [Vertical Technologies](#), a developer of long-range enterprise craft for [mapping, inspection](#), and [surveillance](#) applications. Improved

aerodynamic efficiencies from Evo's design, says DeltaQuada, provides enhanced flight performance enabling up to **4.5 hours** of operation on a single charge.

"About two years ago, we noticed requirements for eVTOL drones were changing," says Douwe Zeeman, DeltaQuad CEO. "We saw a rapidly growing demand for increased flight times and flexible payload options, with a lower total cost of ownership."

Its delta form creates room for two separate payloads bays with a total 3-kilo capacity. Those permit two different kinds of sensors to be carried and used in the same flight for mixed surveillance, [mapping](#), multispectral imagery, and LiDAR missions.



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In building Evo's airframe, DeltaQuad uses fiberglass, carbon, and Kevlar materials, which – along with the eVTOL's delta shape – increase aerodynamic efficiency. The resulting performance, the company says, permits **4.5 hours** of operation with only one payload bay used, and three hours when both are loaded. <https://dronedj.com/2022/09/21/deltaquad-evo-evtol-drone/>

22Sep22

Senate Subcommittee Looks at Airspace Integration Russ Niles September 22, 2022



A Senate subcommittee hearing scheduled for Sept. 28 will help lay the groundwork for integration of advanced air mobility (AAM) aircraft, drones and other new technology into the National Airspace System. [The Subcommittee on Aviation Safety, Operations and Innovation](#) will hear from five aviation industry witnesses, four from drone and AAM organizations and Ed Bolen, president of the National Business Aviation Association. It's the **first of a series of hearings** leading up to the 2023 reauthorization of the FAA.

An announcement from the subcommittee, which is chaired by Sen. Kyrsten Sinema, D-Ariz., makes it clear that figuring out how to share the airspace among all flying machines is a priority. The announcement said it "will examine issues relating to the integration into the National Airspace System (NAS) of new entrants, such as advanced air mobility and unmanned aerial systems (UAS) operators. Topics such as the certification of emerging aircraft technologies, airspace management, workforce, and infrastructure needed to support the deployment of AAM and UAS into the NAS will be considered." https://www.avweb.com/aviation-news/senate-subcommittee-looks-at-airspace-integration/?MailingID=1076&utm_source=ActiveCampaign&utm_medium=email&utm_content=Airspace+Integration+Hearing%2C+Goshawk+Ingests+Vulture&utm_campaign=Airspace+Integration+Hearing%2C+Goshawk+Ingests+Vulture-Thursday%2C+September+22%2C+2022

Global Drone Market Report 2022-2030

DRONE
INDUSTRY INSIGHTS

New insights on the commercial drone market and an updated model for the drone market report



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- Global drone market size is forecast to reach \$55.8 billion by 2026 at 7.8% CAGR, with the commercial market growing at 8.3%.
- Drone services will remain the biggest segment, but Hardware will grow the fastest.
- Energy remains the industry with the highest adoption of drones, while Cargo, Courier Services, Intralogistics and Warehousing has the highest CAGR.
- Mapping & Surveying is and will remain the top drone application, followed by Inspection as well as Photography & Filming.
- The commercial drone market today is led regionally by Asia thanks to China and Japan, while South America and India are growing fastest at the regional and country levels respectively.
- Extensive 230-page drone market report with in-depth analysis, industry definitions, & new EXTENDED 8-year forecast. https://droneii.com/product/drone-market-report?utm_source=email&utm_medium=newsletter&utm_campaign=release-dmr-2022&utm_content=report-section&utm_term=report-cta&goal=0_8e282c8de0-3dbf2002d6-261886717&mc_cid=3dbf2002d6&mc_eid=857447fe29

US Army Awards AeroVironment \$20.6 Million Switchblade Tactical Missile Systems Contract

September 22, 2022 Military



[AeroVironment, Inc.](#), a global leader in intelligent, multi-domain robotic systems, today announced it received a \$20,602,464 firm-fixed-price contract award on Aug. 18, 2022 from the U.S. Army Tactical Aviation and Ground Munitions project office for the procurement of [Switchblade® 300](#) tactical missile systems (TMS). The contract will be managed by the U.S. Army Contracting Command, Redstone Arsenal and is scheduled to be delivered by July 2023.

“Deployed by the U.S. Army for more than a decade, Switchblade 300 remains a critical force protection and soldier lethality solution for our customers, including Ukraine,” said Brett Hush, AeroVironment vice president and product line general manager for TMS. “It closes the gap between observation and action, giving soldiers the ability to identify threats and engage hostile beyond-line-of-sight targets from a greater distance with minimal collateral damage.”



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AeroVironment's combat-proven Switchblade 300 is back-packable and rapidly deployable from ground platforms, including a multipack launcher, providing warfighters with rapid-response force protection and precision strike capabilities up to six miles from its launch location.

https://uasweekly.com/2022/09/22/united-states-army-awards-aerovironment-20-6-million-switchblade-300-tactical-missile-systems-contract/?utm_source=rss&utm_medium=rss&utm_campaign=united-states-army-awards-aerovironment-20-6-million-switchblade-300-tactical-missile-systems-contract&utm_term=2022-09-22

23Sep22

What's an Ion Propulsion Drone? Undefined Technologies Demonstrates Silent Drone

Miriam McNabb September 22, 2022 by DRONELIFE Staff Writer Ian M. Crosby



The aircraft met its projected flight time and lifting power and showcased its flight performance over the course of the 4-1/2 minute flight, demonstrating higher efficiency power delivery systems and noise levels under 75 dB.

"We've been on this upward trajectory for nearly a whole year, working hard on overcoming many technical challenges related to craft's cooling systems, battery lifetime, avionics, and noise-abatement technologies," said Undefined Technologies Founder and CEO Tomas Pribanic. "This milestone secures our vision of making ion propulsion technology viable for use in atmospheric conditions."

By the end of 2023, Undefined Technologies intends to reach 15-minute flight times with sub-70 dB noise levels, in accordance with noise restrictions for the last-mile cargo delivery sector. The company has continuously adhered to a strict vertical integration model, designing, and manufacturing its in-house components to accelerate development, safeguard its intellectual property, and reduce supply chain disruptions.

Silent Ventus's "Ion Booster" creates an ion cloud, resulting in levels of thrust with a 150% increase in comparison to current ion thruster technologies. The thrust generated by the Ion Booster opens the door for this technology to serve as a viable option for electric propulsion.

<https://dronelife.com/2022/09/22/whats-an-ion-propulsion-drone-undefined-technologies-demonstrates-viability-of-silent-drone-tech/>