UAS and SmallSat Weekly News

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Wing's CEO Testifies Before Congress: Make Drone Regulations "Predictable and Pragmatic"

Miriam McNabb March 30, 2023

News and Commentary. Today, Wing CEO Adam Woodworth testified before Congress on the need for drone regulations that support commercial operations – and American leadership in the industry.

In his testimony, Woodworth laid out 9 points for Congress to consider in the FAA Reauthorization Bill, a vehicle that allows Congress to influence the activities and goals of the agency.

In an Op-Ed previewing his testimony, published in Aviation Week, Woodworth said that in order to maintain U.S. leadership in the drone industry, the FAA must develop a regulatory framework that is "predictable and pragmatic." https://dronelife.com/2023/03/30/wings-ceo-testifies-before-congress-make-drone-regulations-predictable-and-pragmatic/

Observation Without Limits Radar: AeroDefense's Layered Airspace Security System

Miriam McNabb March 30, 2023 by DRONELIFE Staff Writer Ian M. Crosby

Today, drone detection solutions provider AeroDefense announced that its AirWarden™ system will be integrating Observation Without Limits (O.W.L.) radar ground and air detection capability. The integration will support the O.W.L. GroundAware® family of 2D and 3D digital beamforming radar systems employed by critical infrastructure and government sectors worldwide.

Certain critical infrastructure necessitate a multi-layer technology approach to protect against unauthorized drones. The integration O.W.L.'s radar technology with the AeroDefense AirWarden RF spectrum sensing system results in a solution capable of detecting both RF-based and radio-silent, small to large, low speed to high speed drones and their operators as the drone is powered on.

To satisfy drone detection users' requests for maximum data to help in guiding their security teams' responses, AirWarden's user interface clearly displays each detection type and method

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in an easily identifiable manner. https://dronelife.com/2023/03/30/observation-without-limits-o-w-l-radar-aerodefenses-layered-airspace-security-system/

Big Military Sats Look for A Place Amid The Smallsat Trend Brian Everstine Garrett Reim March 30, 2023

Terran Orbital's bus for the SDA's Tranche 0 Transport Layer is many times smaller than a conventional communications satellite.

"Big, fat, juicy targets," an "old approach" and "fragile, undefendable"—these are some of the ways Pentagon leaders have described large, conventional satellites in recent years. As China and Russia field anti-satellite weapons, including missiles and jammers, the U.S. Defense Department worries that its most capable—and expensive—satellites are vulnerable to being easily knocked out in a war.

Instead, Washington is enamored with small, relatively cheap, and distributed satellites, such as SpaceX's Starlink, a constellation of laser-linked communications satellites operating in low Earth orbit that have been vital to orchestrating Ukraine's defense against the Russian invasion. The U.S. Space Force plans to launch hundreds of small satellites to field a variety of roles previously only handled by its biggest spacecraft.

Yet prime defense contractors say: Do not write the death certificate for large satellites. Companies such as Boeing, Northrop Grumman, Airbus and Lockheed Martin—historically the manufacturers of large military satellites—say the type is likely to endure for a while longer, albeit not in the dominant role it once played. https://aviationweek.com/defense-space/budget-policy-operations/big-military-sats-look-place-amid-smallsat-trend

Lilium, Vertical Aerospace Face Precarious Cash Runway Ben Goldstein March 30, 2023

This year is shaping up to be a pivotal one for the host of electric air taxi startups vying to establish their presence in the nascent market for urban air mobility (UAM) vehicles, with attention shifting from concepts and technology demonstrations to building type-conforming aircraft that can be flown for certification credit.

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But whether each company in the advanced air mobility (AAM) race has the necessary capital to see their plans through to certification remains an open question. Financial conditions have tightened considerably over the last year, and interest rates continue to rise around the world, helping to send AAM stocks to new depths each week, with some companies now officially trading in penny-stock territory.

In the case of Lilium, the German startup needs to raise around $540 million to fund operations through to type certification, according to a filing with the U.S. Securities and Exchange commission. The company ended 2022 with around $273 million in cash after raising an additional $119 million from investors. https://aviationweek.com/air-transport/aircraft-propulsion/daily-memo-lilium-vertical-aerospace-face-precarious-cash-runway?utm_rid=CPEN1000003332045&utm_campaign=37327&utm_medium=email&elq2=9483163a314d4198b4edaa1d401bc6dc&utm_emailname=AW_News_Aerospace_20230331&sp_eh=536b822f340988ca12deeaf6a0907ccae63850ee4cf07728d68baa3b8017155d

Vertical reports milestone trifecta for its VX4 eVTOL air taxi Bruce Crumley - Mar. 31st 2023

Advanced air mobility company Vertical Aerospace has announced several significant developments in its work advancing its VX4 aircraft toward air taxi service, including reception of what it says is the first Design Organization Approval issued by UK regulators for a passenger electric vertical takeoff and landing vehicle (eVTOL).

Vertical said the UK Civil Aviation Authority (CAA) recently granted its first-ever eVTOL Design Organization Approval for the VX4, a requisite for its certification and eventual launch in air taxi activity. The authorization permits the company to analyze and accept various aspects of aircraft design and related component proposals without needing additional approval from the regulator.

The move came just weeks after the CAA confirmed it will be adopting the European Union Aviation Safety Agency's Means of Compliance to SC-VTOL – something it initially indicated it would do in the stormy wake of Brexit.

That harmonization will further facilitate the work Vertical launched last year to seek concurrent type certification of the VX4 eVTOL from UK and EU regulators and begin air taxi

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operations in both airspaces around the same time. https://dronedj.com/2023/03/31/vertical-reports-milestone-trifecta-for-its-vx4-evtol-air-taxi/

Ukraine sends 300 DJI Mavic 3T drones to battle Russians ahead of expected offensive Bruce Crumley - Mar. 31st 2023

In another setback to global drone giant DJI's efforts to keep its consumer and enterprise products from being used in the conflict provoked by Russia's invasion of Ukraine, officials in Kyiv said this week a small army of 300 Mavic 3T UAVs had been procured and sent to the eastern front in the space of just a few days.

DJI has repeatedly made clear its opposition to its powerful aerial tech being repurposed for war or other violent activities. Indeed, in reaction to the status of its UAVs as preferred reconnaissance and attack gear in the hands of Russian and Ukrainian combatants, the company moved in last April to halt sales of its products in both countries.

That, however, hasn't kept Ukraine from getting ahold of 300 Mavic 3T drones for deployment ahead of what many observers believe will be a springtime counter-offensive against Russian troops in the east of the country.

According to a corresponding announcement on his ministry's website, the $1.6 million used to buy the fleet of DJI Mavic 3T drones was raised by a trio of organizers in the space of three days under Ukraine's Army of Drones program. The company's product page lists an entry-level combo package for the craft at $5,780, making the full 300 worth just over $1.7 million.

A ministry press release stated all 300 of the drones have already been dispatched to critical spots in the east, possibly in preparation for a long-rumored spring offensive. https://dronedj.com/2023/03/31/ukraine-sends-300-dji-mavic-3t-drones-to-battle-russians-ahead-of-expected-offensive/#more-92056

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UK drone surveying company creates specialized solution for rail clients Bruce Crumley - Mar. 31st 2023

UK aerial surveying specialist Plowman Craven has produced a drone data collection solution specifically designed for owners and operators of rail networks across the nation and globe – including lines where physical access to infrastructure isn't feasible.

Operating from offices in London and Hertfordshire, Plowman and Craven has built up one of the largest infrastructure surveying and inspection businesses in the UK in its over 50 years of work. The company says its Vogel Freedom drone solution solves a lot of the problems rail operators face in carrying out network surveys, especially the traffic disruptions caused by – and dangers created for – workers needing access to infrastructure to lay ground point sensors.

The Vogel Freeman drone platform not only needs far fewer of those ground points to deliver complete topographical surveys, it can also produce sub-5 mm accurate rail system models using off-track sensor placement – at times entirely removed from a client's restricted infrastructure boundaries.

Plowman Craven says that capability eliminates habitual "boots on ballast" placement of ground points – meaning no human access near rail assets. It says the solution completes aerial surveys 20% faster, 30% cheaper, and with 85% less carbon output than other options – including traditional aircraft overflies – and has been adopted by the UK massive Network Rail company. https://dronedj.com/2023/03/31/uk-drone-surveying-company-creates-specialized-solution-for-rail-clients/#more-92071

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MIT Researchers Develop New Algorithm to Prevent Drone Collisions Miriam McNabb April 02, 2023 by DRONELIFE Staff Writer Ian M. Crosby

In 2020, MIT researchers presented MADDER, a system designed to prevent crashes between drones occupying the same airspace.

The multiagent trajectory-planner enables a group of drones to form trajectories to avoid collision, with each drone broadcasting its trajectory and in turn considering the trajectories of its fellow drones when charting its course.

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MADER is an asynchronous, decentralized, multiagent trajectory-planner. Each drone generates its own trajectory, and although each agent must agree on every new trajectory, they needn't agree simultaneously. This method renders MADER more scalable than alternative solutions, due to the extensive difficulty of getting large quantities of drones to agree on a trajectory at the same time.

This new system's algorithm introduces a delay-check step in which a drone waits a specified amount of time before following a new trajectory. Receiving additional trajectory information during the delay period may cause it to abandon its planned trajectory and start over if necessary. According to Kondo, the length of the delay-check period depends on the distance between drones and environmental factors with the potential to obstruct communications.

Robust MADER achieved a 100 percent success rate at creating collision-free trajectories, both in simulations and with real drones. Although this new system resulted in marginally slower travel time, it was the only method that guaranteed safety.
https://dronelife.com/2023/04/02/mit-researchers-develop-new-algorithm-to-prevent-drone-collisions/

Uncrewed Helicopters: Alpha Unmanned Systems Closes First Investment Round

Miriam McNabb: April 02, 2023 by DRONELIFE Staff Writer Ian M. Crosby

Madrid-based unmanned helicopter (UAV) manufacturer, Alpha Unmanned Systems (AUS), has announced the closing of its first seed round of external investment capital. The round was led by UAV Factory co-founder Dr.Joseph Menaker, with participation from former CEO of UAVNavigation and current Director of International Business Development at Alpha, Tobias Webster, and Javier Castaño, co-founder of Agnitio and current CFO of Alpha. This funding will be leveraged to advance Alpha's product development and improve upon its sales and marketing efforts.

The company has completed direct international sales to governments, the Armed Forces and private entities with clientele from Spain, Israel, USA, Greece, Indonesia, Georgia, Turkey, and the European Union. The company's most recent offering, the Alpha 900, is a helicopter specially designed for missions in the marine environment.
https://dronelife.com/2023/04/02/uncrewed-helicopters-alpha-unmanned-systems-closes-first-investment-round/

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U.S. Army Solicits for Small UAS Radar System Steve Trimble March 31, 2023

Industry officials have one last chance to influence the U.S. Army's strategy for acquiring a family of vehicles, payloads, and mission systems for Air-Launched Effects, scheduled to become operational in fiscal 2025.

The U.S. Army has started shopping for a new airborne radar to equip a new class of air-launched, uncrewed aircraft systems expected to operate alongside rotorcraft.

The Multi-Domain Operations Radar for Air-Launched Effects (ALE) has entered the competitive phase of the acquisition process, with a request for project proposals released by Army Contracting Command on March 30. Responses are due via the Sensors Communications and Electronics Consortium on May 1.

The C5ISR Center in U.S. Army Development Command is looking for a "complete, functional prototype of a radar system" for ALEs, according to a special notice released on the System for Award Management website. https://aviationweek.com/defense-space/sensors-electronic-warfare/us-army-solicits-small-uas-radar-system

Vertiport and eVTOL network competition is creating a major urban UTM challenge March 30, 2023 Philip Butterworth-Hayes

Earlier this month Archer Aviation and United Airlines announced plans to launch the first air taxi route in Chicago, between O'Hare International Airport and Vertiport Chicago in 2025. Chicago is one of two major US cities where eVTOL manufacturers and vertiport operators are setting up competing operations – although competition is likely to be muted in Chicago as Archer's eVTOL rival there, Eve Air Mobility, is also a United supplier. In July 2022 United paid a $10 million pre-delivery deposit for 100 eVTOL air taxis from Archer and a month later announced an order for 200 eVTOL air taxis from Eve.

Far more interesting, from a competitive point of view, is Miami, Florida, where Joby, Lilium, Eve, and Archer have all declared the city as a priority UAM hub. The competitors all have slightly different visions of how they will develop their services in the city. Archer wants to provide a mass transport alternative to the road network; Joby has an agreement with real

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estate company Reef Technology in 2021 to develop rooftop take-off and landing sites on car parks; Eve wants to connect the city with the airport and Miami is an integral part of Lilium's wider regional Florida network. Some of these strategies are complementary but others are highly competitive. https://www.unmannedairspace.info/news-first/vertiport-and-evtol-network-competition-is-a-creating-a-major-urban-utm-challenge/

FAA approves new waiver for Northern Plains UAS test site, expands operations

April 3, 2023 Jenny Beechener

The Federal Aviation Administration (FAA) has approved a new waiver allowing the Northern Plains UAS Test Site to support unmanned aerial system (UAS) flights involving aircraft that do not have a public designation. The FAA approval means:

- Companies can fly with the test site to get the experience necessary to prove that their aircraft are safe in preparation for accessing the wider national airspace.
- A larger number of companies will be able to obtain beyond visual line of sight (BVLOS) waivers through the test site in the future.

Under current FAA rules, a UAS must be designated as a public aircraft to fly, even when operating under the supervision of a UAS test site. This restricts the companies' ability to establish a safe operating record, which is required to fly UAS in the broader national airspace.

"This new waiver will allow companies to work within the airspace governed by North Dakota's test site without needing a public designation, giving the state an even greater competitive edge in the UAS industry," said Senator John Hoeven. "Now, companies will be able to come to North Dakota to establish the safety record necessary to expand their UAS operations." https://www.unmannedairspace.info/latest-news-and-information/faa-approves-new-waiver-for-northern-plains-uas-test-site-expands-operations/

Drone Delivery Canada and Pegasus Imagery sign MOU for detect and avoid technology March 28, 2023 Jenny Beechener

Drone Delivery Canada (DDC) and Pegasus Imagery have signed a memorandum of understanding to work together to develop and implement on board detect and avoid technology (DAA) for DDC's heavy lift Condor remote piloted aircraft (RPA).

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The basis of the development effort will be to integrate Pegasus' proprietary A3S DAA system onto the Condor. A3S is an Autonomous Airspace Awareness System using sensor fusion to merge onboard sensor data with artificial intelligence to detect, track and autonomously avoid other aircraft and obstacles.

This project builds on DDC's efforts to implement DAA technology into all its RPAs to move towards fully automated flights for all operations to be conducted in accordance with the Canadian Aviation Regulations and Transport Canada flight authorizations, while being remotely monitored by DDC through its proprietary FLYTE software from its Operations Control Centre located in Vaughan, Ontario. https://www.unmannedairspace.info/latest-news-and-information/drone-delivery-canada-and-pegasus-imagery-sign-mou-to-develop-of-detect-and-avoid-technology/

Drone Pilots: Get involved in the FAA's annual Drone Safety Day campaign on April 29!

Drone Safety Day is an opportunity for us to connect, educate, and engage with drone pilots all over the country! This campaign reaches people through local and nationwide events that highlight the many safety, societal, and economic benefits of flying safely.

Be sure to check out events happening near you and share your photos/videos on social media using the #DroneSafetyDay hashtag.

This year, we are encouraging current and future drone pilots to "Fly RIGHT":

- **R**egister your drone – Visit the FAA DroneZone
- **I**nteract with others – Join a Community Based Organization
- **G**ain knowledge – Learn the rules at FAA.gov/uas
- **H**ave a safety plan – Use the B4UFLY app
- **T**RUST and train – Take the safety test

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We want everyone to have fun – and fly RIGHT! By flying RIGHT, you are following FAA rules for drone operations. To learn more about Drone Safety Day visit our website or follow us on Facebook, Twitter and Instagram for updates. FAA Office of UAS Integration usafaa@infodot.gov

USMC Use GA-ASI MQ-9A for Training Exercise March 31, 2023

General Atomics Aeronautical Systems, Inc. (GA-ASI) is working with the U.S. Marine Corps on a series of Service-Level Training Exercises (SLTE) using a company-owned MQ-9A Unmanned Aircraft System to support the Marine Air-Ground Task Force Training Command. The SLTE 2-23 is being conducted near Twentynine Palms, Calif. with participation from Joint Forces. The training ensures participants are prepared for the future dynamic environment.

Contracting the use of MQ-9A enabled USMC to begin integrating Group 5 unmanned aircraft into the Marine Air-Ground Task Force for the first time within the various exercises. GA-ASI began flying the MQ-9A on Feb. 3, 2023, with a combination of GA-ASI and VMU-3 pilots and sensor operators. The aircraft flew out of GA-ASI's facility at the Yuma Proving Ground, Ariz., with flights over training ranges in Southwest-Continental United States. The MQ-9A is providing its proven Intelligence, Surveillance and Reconnaissance (ISR) data package – including GA-ASI's Lynx® Multi-mode Radar – to provide the USMC with situational awareness and simulated close air support.
https://www.legendaryleadersininnovation.com/public/topics/19/Autonomous

Successful Testing of BAE Systems' Laser-Guidance Kits by US Counter-Drone Office March 31, 2023 Counter UAS | News

The US Joint Counter-Small Unmanned Aircraft Systems Office has successfully tested BAE Systems' APKWS® laser-guidance kits in a counter-unmanned aircraft systems (C-UAS) mission against Class-2 UAS, paving the way for the deployment of the precision-guided rockets to allied nations worldwide. The laser-guidance kits transform unguided rockets into smart munitions that can accurately strike soft and lightly armored targets. A newly developed proximity fuze for

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the standard M151 warhead permits the laser-guidance kits to target Class 2 and Class 3 drones which typically weigh less than 55 pounds, while retaining the legacy point denotation capability for maximum flexibility of the weapon in the field. The APKWS® system enables rockets to engage and destroy drones at a fraction of the cost of existing C-UAS systems with unprecedented accuracy.

During a Department of Defense-led exercise at Yuma Proving Ground, Arizona, the 70mm APKWS-guided rockets demonstrated 100% effectiveness when fired against 25-to-50-pound drones traveling at over 100 miles per hour. The APKWS® C-UAS solution is platform agnostic, permitting multiple options to accelerate fielding.

BAE Systems produces the APKWS laser-guidance kits at its advanced manufacturing facility in Hudson, New Hampshire. The kits are available to all US armed forces and allies through Foreign Military Sales. https://uasweekly.com/2023/03/31/successful-testing-of-bae-systems-apkws-laser-guidance-kits-by-us-counter-drone-office/?utm_source=rss&utm_medium=rss&utm_campaign=successful-testing-of-bae-systems-apkws-laser-guidance-kits-by-us-counter-drone-office&utm_term=2023-04-03

Zipline drones to start delivery of Michigan Medical prescriptions in 2024 Bruce Crumley - Apr. 3rd 2023

Healthcare provider Michigan Medicine says it plans to more than double the number of prescriptions its in-house pharmacy fills each year by using the new quick drone delivery system Zipline revealed last month.

Michigan Medicine, which is part of the University of Michigan's large medical school, says it is working with Zipline to prepare the start of prescription drone deliveries next year. The group said the operation will serve hundreds of thousands of patients around Ann Arbor's Washtenaw County, and allow it to more than double the volume of prescriptions its internal pharmacies fill each year by using UAVs capable of making 10-mile flights in just 10 minutes.

Michigan Medicine's existing prescription facilities will integrate the automated drone delivery system Zipline unveiled March 15, as will a new specialty care prescription center set to open later this year.

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The platform involves Zipline's loading portals being installed inside customer work zones, enabling orders to be placed in compact delivery droids as soon as they're ready. Transport drones then lift those smaller craft for flights to patients' homes and from an elevation of 300 feet, winch the self-guiding droids down to delivery spots as small as a patio table or set of stairs.

The new Zipline drones can make round-trip deliveries within a given 10-mile radius, or 24-mile one-way flights where recharging will occur in the network of docking stations the company is currently setting up. https://dronedj.com/2023/04/03/zipline-drones-to-start-delivery-of-michigan-medical-prescriptions-in-2024/#more-92115

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DroneUp Partners with Embry-Riddle Aeronautical University for Career Pathway Program March 20, 2023

Virginia Beach, Va., March 21, 2023 – DroneUp, LLC, a leading autonomous drone delivery platform and drone services provider, today announced a partnership with the Embry-Riddle Aeronautical University, Daytona Beach to develop the DroneUp Talent Pathway Program, aimed at engaging students with degrees related to UAS.

Known as the world's largest, fully accredited university specializing in aviation, aerospace, and security/intelligence, Embry-Riddle offers more than 100 baccalaureate, graduate, and Ph.D. programs in a dynamic learning environment. More than 32,750 full-time students attend Embry-Riddle Aeronautical University's two residential campuses in Daytona Beach, Fla. and Prescott, Ariz., and the university's Worldwide Campus.

With rapid growth over the last few years, DroneUp has identified programs to educate future graduates on career paths in this quickly growing industry. In 2022, DroneUp launched 34 drone delivery Hubs in 6 states that not only require full-time engineers on-site but also a wide variety of other technology-focused roles. DroneUp will collaborate with Embry-Riddle Aeronautical University to create a talent pathway program focused on recruiting operators, flight engineers, computer programmers, and other relevant roles. Students of this talent pathway program will have access to two career expos, mock interviews, and classroom visits from DroneUp employees. https://www.droneup.com/embry-riddle-partnership

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Drones Aren't Green in Green Energy April 03, 2023

No longer brand new, drones and robots are a big piece of the green energy transition.

Both autonomous and piloted drones and robots are helping energy companies with tasks from inspections and offshore data collection to mapping and maintenance.

The industry continues to work toward more cost-effective solutions and being better able to use the vast amounts of data collected with drones and robots.

Many manufacturers and vendors are working to offer streamlined solutions for energy asset owners interested in deploying drone programs. For example, providers are working toward "Drones-in-a-Box" that can be deployed quickly and remotely on energy asset sites like solar farms, wind farms, oil rigs, and more.

On solar farms especially, Drones-in-a-Box can help save time and money as well as improve safety—both in daily operations and after severe weather.

Drones are being deployed on solar farms to inspect for panel damage, component issues, and thermal anomalies. Unpiloted drones can inspect solar farms faster, more frequently and more safely than humans. By allowing solar farms and other energy assets to be inspected more frequently, drones can help improve safety, inform predictive maintenance, save time and money, and help prevent major issues that might lead to downtime. https://innovateenergynow.com/resources/drones-arent-green-in-green-energy

Air taxi developer Plana opens US offices to facilitate AAM activity Bruce Crumley - Apr. 4th 2023

South Korean air taxi and longer-range advanced air mobility (AAM) company Plana has been expanding its business footprint of late, and as part of that is opening offices in the US to facilitate the certification process of its next-generation aircraft.

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Plana said last week that it had opened offices in Irvine, California, and farther north with a Silicon Valley location. One of the main purposes of the initiative, Plana said, was to plan for and eventually launch the certification process of its air taxi with the Federal Aviation Administration (FAA).

Plana is working on a six-rotor aircraft whose hybrid powertrain will have a range of more than 310 miles while flying at speeds of 190 mph and carrying up to six passengers and a pilot. Plana hopes to extend that maximum distance to 500 miles for longer services, and plans to begin flight testing of a subscale eVTOL model this year. https://dronedj.com/2023/04/04/air-taxi-developer-plana-opens-us-offices-to-facilitate-aam-activity/#more-92133

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DARPA Seeks Increased Funding For X-Planes In 2024 Graham Warwick April 04, 2023

Ancillary is an X-plane program to demonstrate a ship-based long-endurance VTOL unmanned aircraft.

DARPA's interest in platforms waxes and wanes but is entering a cycle of renewed focus based on a fiscal 2024 budget request that seeks increased funding for a series of flight demonstration projects.

The Pentagon's advanced research agency is seeking a total of $4.38 billion in fiscal 2024, an increase of 8% from 2023 and greater than the 5% increase in funding provided in 2022.

Some of the increase in fiscal 2024 comes from the initiation of new X-plane programs. DARPA is seeking $22.7 million for conceptual design of a high-speed vertical-takeoff-and-landing aircraft for special operations missions under the Sprint project and $13.2 million for conceptual design of a ship-based long-endurance VTOL uncrewed aircraft system under the Ancillary project. https://aviationweek.com/defense-space/budget-policy-operations/darpa-seeks-increased-funding-x-planes-2024?utm_rid=CPEN1000003332045&utm_campaign=37475&utm_medium=email&elq2=6bf9fe5beacb45228ada239f7f55d32a&utm_emailname=AW_News_Aerospace_20230405&sp_eh=536b822f340988ca12deeaf6a0907ccae63850ee4cf07728d68baa3b8017155d

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Skydio drones, Qii.AI to inspect ships for Royal Canadian Navy Ishveena Singh - Mar. 17th 2023

Drone manufacturer Skydio says its technology partner Qii.AI has won a contract to conduct automated ship inspections and detect corrosion for the Royal Canadian Navy. While the Qii.AI platform will provide AI-based data analytics, the visual data gathering part of the Navy's ship inspection program will be carried out using Skydio drones.

Qii.AI is a Toronto-based software company that uses computer vision and machine learning to detect and quantify issues such as corrosion, cracking, and delamination in steel and concrete infrastructure assets. It recently joined forces with Skydio to make the Skydio 3D Scan drone mapping software more efficient for remote digital inspections.

Last year, the duo demonstrated their collective power to the Canadian Department of National Defense, wherein Skydio drones captured data from two naval ships and created their digital twins using 3D Scan software. These models were then imported into the Qii system for auto-detection, classification, and quantification of visible corrosion, using Skydio Cloud API.

Based on the results from that demo, Canada's Naval Engineering Test Establishment (NETE) has now entered into a license and AI customization agreement with Qii to allow ship inspections to be completed in a fraction of the time taken by traditional methods.
https://dronedj.com/2023/03/17/drone-inspection-royal-canadian-navy/?utm_campaign=Energy%20Drone%20%26%20Robotics%20Coalition%20Content&utm_medium=email&_hsmi=252952278&_hsenc=p2ANqtz-_Up-wyltGrTufZMKyPvvlKV9MKbyaXEzcSXONgOSrW5HFI3-WRmet_qwOjx0rGZbtk10tDA0WQEQeCboyxmneD7FQQ3g&utm_content=252952278&utm_source=hs_email

Chinese Startup Vertaxi Completes eVTOL Prototype Graham Warwick April 04, 2023

Chinese startup Vertaxi has unveiled the first full-scale prototype of its Matrix 1 (M1) electric-vertical-takeoff-and-landing (eVTOL) aircraft and detailed plans to enter the market first with an uncrewed cargo version.

The prototype was assembled at the Jinshan uncrewed aircraft test site on the outskirts of Shanghai.

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The M1 is a 4,400-lb. gross-weight lift-plus-cruise eVTOL aircraft with a wingspan of 49 ft. The vehicle has four wing booms carrying 16 lift rotors for vertical flight and four propellers for wing-borne cruise flight. The tail connects the booms to the rear fuselage. The aircraft has a maximum payload of 500 kg and a 124 ft^3 flat-floor cabin that can accommodate 32 standard postal boxes, Vertaxi says.

The M1 prototype will now enter several months of ground testing at the Jinshan UAV base. Vertaxi's goal is to type certify the M1 first for the cargo market and then select suitable rural and remote locations such as islands and mountainous regions to begin trial operations and start accumulating operational experience and data.
https://aviationweek.com/aerospace/advanced-air-mobility/chinese-startup-vertaxi-completes-evtol-prototype

NY UAS Test Site Receives Civil Flight Authority for 50-Mile Drone Corridor Miriam McNabb April 04, 2023

The FAA has granted the New York Uncrewed Aircraft Systems (UAS) Test Site at Griffiss International Airport a new civil authority to advance the research, development, and commercialization of drone operations which will make it easier for the test site to accommodate larger drones testing commercial operations.

As a result of the NY test site Civil Flight Authority, the site "can now operate drones weighing under 300 pounds throughout New York's 50-mile drone corridor and be compensated for operations," says the announcement.

"This new FAA designation removes some previous restrictions making it easier to test larger drones," Picente said. "Our test site is already the global leader for UAS research and development, and now, we will be able to test more advanced operations and be financially compensated for it. This is great news for Oneida County, our partners at the Test Site and for the businesses and agencies who use our facility to advance the industry."

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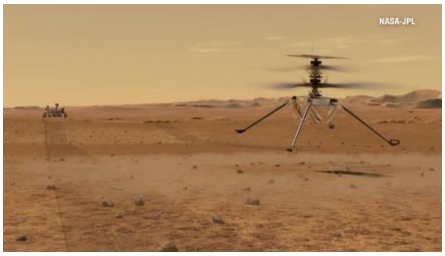
The new NY test civil flight authority covers New York's 50-mile beyond visual line of sight UAS corridor connecting Griffiss and Syracuse Hancock International airports, "opening the door for scalable, commercial operations." https://dronelife.com/2023/04/04/commercial-ops-with-large-drones-ny-uas-test-site-receives-civil-flight-authority-for-50-mile-drone-corridor/

Helicopter breaks record for speed and altitude on Mars Kerry Breen • April 5, 2023 CBS News

After more than two years on the red planet, the Mars helicopter Ingenuity has broken two new records, NASA said.

The helicopter on Sunday flew 14.5 miles per hour, beating its previous record of 13.4 miles per hour, and hit an altitude of 52.5 feet, outperforming its previous top height of 46 feet. The data from Ingenuity, which has flown 49 flights and been on Mars since February 2021, was shared online by NASA in a flight log.



Ingenuity has set records in the past: In April 2021, it became the first powered, controlled flight in Mars' extremely thin atmosphere, NASA said. In a video released Tuesday, Ingenuity Team Lead Teddy Tzanetos spoke from NASA's Jet Propulsion Laboratory and said that the records that Ingenuity had set were allowing developers to advance future helicopter design. https://www.msn.com/en-us/news/technology/helicopter-breaks-record-for-speed-and-altitude-on-mars/ar-AA19vhAa?ocid=msedgdhp&pc=U531&cvid=5f52d8b6bf0742d9a709afe188f61268&ei=105

PAU wins nation-wide FAA drone infrastructure inspection waiver Bruce Crumley - Apr. 5th 2023 1

Drone data-gathering company Phoenix Air Unmanned (PAU) has received a nation-wide waiver from the Federal Aviation Administration to use FlyFree Systems' Alta X UAVs during beyond visual line of sight (BVLOS) powerline infrastructure inspection missions for clients.

PAU said the FAA waiver allows it to perform BVLOS infrastructure inspections with FlyFree Alta X drones anywhere in the US, including operations over people and moving vehicles. The company secured the authorization following submission of what it called a robust safety case

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outlining use of electronic airspace surveillance, establishment of clear and defined operating areas, and performance criteria justifying the safety of its BVLOS track record.

Cartersville, GA-based PAU says it previously conducted thousands of miles of BVLOS transmission line drone inspections using more limited FAA waivers. Under those, the company last August reported it had passed the 13,000 mark for BVLOS missions, following a phase in its long-running aerial inspections of Xcel Energy infrastructure.
https://dronedj.com/2023/04/05/pau-wins-nation-wide-faa-drone-infrastructure-inspection-waiver/#more-92201

6Apr23

DroneShield Launches a Portable, Pistol-Shaped Drone Jammer: DroneGun Mk4 Miriam McNabb April 05, 2023 by DRONELIFE Staff Writer Ian M. Crosby

DroneShield has announced the release of its new DroneGun Mk4, after undergoing extensive development in response to end-user feedback. A portable pistol-shaped drone jammer weighing 3.2kg, DroneGun Mk4 is currently available for purchase for qualified end-users. DroneShield believes that the combination of the product's size and effectiveness render it without equal.

The new model is intended to serve as an addition to the DroneGun line of products, rather than as a replacement for the established long range DroneGun Tactical and ultra-lightweight DroneGun Mk3. The DroneGun Mk4 attains an ideal balance between size and capability.
https://dronelife.com/2023/04/05/droneshield-launches-a-portable-pistol-shaped-drone-jammer-dronegun-mk4/

New Zealand Spaceplane Performs First Rocket-Powered Flight, Achieving Major Milestone Kevin Hurler April 5, 2023

Dawn Aerospace performed previous tests of Mk-II with a jet engine, but the latest test with a rocket engine sets the company on a path towards space.

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New Zealand-based private space company Dawn Aerospace says it has completed three successful tests of its prototype Mk-II Aurora spaceplane using rocket engines. A scaled-up version of the suborbital vehicle could eventually perform multiple flights each day, sending payloads on journeys to low Earth orbit.

Dawn Aerospace received approval from the Civil Aviation Authority of New Zealand in late March for rocket-powered flights of the Mk-II Aurora. The company completed three successful flights—one per day—between March 29 and March 31 at Glentanner Aerodrome in Glentanner, New Zealand, using the spaceplane's rocket engine.

During these tests, the Mk-II Aurora reached speeds of up to 195 miles per and altitudes of 6,000 feet. Dawn Aerospace says the attained heights and speeds are on par with previous tests of the plane under the power of a jet engine. The recent tests also demonstrated the vehicle's integration with air traffic and potential for rapid reusability with two of the three tests occurring less than 24 hours apart.

The Mk-II Aurora is a remotely piloted spaceplane that could eventually take multiple trips into suborbital space every day, taking off and landing on runways much the same way a traditional jet would. https://gizmodo.com/new-zealand-spaceplane-first-rocket-powered-flight-1850299870

7Apr23

Phoenix Air Unmanned Granted Nationwide BVLOS Waiver for Powerline Inspections April 5, 2023 News

Phoenix Air Unmanned, LLC (PAU), a leading provider of unmanned aircraft system solutions, has received a broad area waiver from the Federal Aviation Administration authorizing powerline inspection flights beyond the visual line of sight (BVLOS) of the remote pilot in command. The waiver covers powerline infrastructure across the United States and builds upon thousands of miles of BVLOS transmission line inspection flight experience.

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The waiver grants operations beyond the visual line of sight of the remote pilot in command and visual observers, operations over people, and operations over moving vehicles.

PAU selected key partners with a track record of reliability and aviation experience to build the operation, including Freefly Systems Alta X, a reliable aerial platform with adaptable payload mounting that allows for high-resolution inspection imagery. The IRIS Terminal, developed by Kongsberg Geospatial, provides UAS operators with real-time BVLOS airspace visibility, showing own ship tracks and cooperative and non-cooperative aircraft tracks all on the same pane of glass, located inside mobile monitoring stations.

Phoenix Air Unmanned flight crews operate the Freefly Alta X over the centerline of the transmission line, flying from structure to structure and capturing multiple datasets, including high-resolution inspection imagery. The scalability of BVLOS transmission line inspection flights with UAS has been proven, as a single PAU flight team captured 134.4 miles of transmission line inspection imagery in a single day under an identical BVLOS waiver in June of 2021. https://uasweekly.com/2023/04/05/phoenix-air-unmanned-granted-nationwide-bvlos-waiver-for-powerline-inspections/?utm_source=rss&utm_medium=rss&utm_campaign=phoenix-air-unmanned-granted-nationwide-bvlos-waiver-for-powerline-inspections&utm_term=2023-04-06

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