UAS and SmallSat Weekly News

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Drones for Wastewater Inspection: Flyability and WinCan Partner [VIDEO] Miriam McNabb February 03, 2022 by DRONELIFE Staff Writer Ian M. Crosby

Indoor drone provider Flyability has formed a partnership with sewer inspection software provider WinCan in order to make sewer inspections safer, quicker, and more cost effective.

Wastewater inspection professionals are increasingly employing Flyability's Elios 2 drone to collect visual data inside sewer pipes. This new partnership will now enable inspectors to import their gathered data directly to WinCan's sewer inspection software, where they can then process it, analyze it, and create detailed, standards-compliant reports.

WinCan's software can be utilized in any wastewater pipe inspection, whether on domestic, commercial, or private properties. As the first company to ever make software for wastewater pipe inspections, WinCan released its software's first version in 1990. Today, the software is on version 12, and is employed throughout the world, supporting over 50 observation standards for wastewater inspections in more than 50 languages.

WinCan's software enables inspectors collecting visual data via Flyability's indoor drones to import POI (Points of Interest) photos and their stationing, receive automatic calculations of observation distances and posture length according to the drone's trajectory, and upload their data to the cloud to collaborate with colleagues and customers.
https://dronelife.com/2022/02/03/drones-for-wastewater-inspection-flyability-and-wincan-partner/

Bell Announces Step Forward for Autonomous Flight Operations Mark Phelps February 2, 2022

Bell Textron announced today its Autonomous Pod Transport (APT) has successfully demonstrated a ground based Detect and Avoid (DAA) flight. The test was part of Bell's NASA Systems Integration and Operationalization project to demonstrate the unmanned aircraft's systems integration with ground radar and its ability to meet requirements for navigating airspace and avoiding

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traffic, “a critical component needed for future Advanced Air Mobility vehicles,” according to Bell’s announcement.

The demonstration hinged on proving capability to complete beyond visual line of sight missions in complex airspace. The APT’s DAA technology is designed to monitor airspace for “natural intruders” and tests included interfacing with a commercial Bell 429 helicopter equipped with Bell’s QuantiFLY communication unit. QuantiFLY is driven by the Truth Data flight data monitoring system, described as a “low-cost, lightweight, and fully automatic flight data monitoring solution.” It was installed on the Bell 429 to record telemetry data.

Tests were flown in “complex” airspace within the AllianceTexas Mobility Innovation Zone, and radar tracked manned and unmanned aircraft systems. The MIZ enables partner organizations to test, scale and commercialize emerging technologies in air and surface mobility, according to Bell. https://www.avweb.com/aviation-news/bell-announces-step-forward-for-autonomous-flight-operations/?MailingID=825&utm_source=ActiveCampaign&utm_medium=email&utm_content=ATP+Adds+New+Center%2C+RAF+Tornadoes+Scrambled&utm_campaign=ATP+Adds+New+Center%2C+RAF+Tornadoes+Scrambled%2C+Friday%2C+February+4%2C+2022

Flytrex CEO forecasts a bust-out 2022 for drone delivery activity Bruce Crumley - Feb. 4th 2022

In recent months, Flytrex has continued to expand its UAV operations that now cover 10,000 potential households in three North Carolina communities – part of its larger ambition to cut the distance between retailers and customers across the US and world beyond.

Both regulation and certification are, rightly, a meticulous process. What otherwise might have been an explosion of drone delivery activity by now has been tempered by legitimate safety concerns. Most companies active in UAV transport services are operating on Federal Aviation Administration certification obtained painstakingly, as full rules and infrastructure are still being worked out..

Flytrex initially obtained the FAA’s approval to operate on-demand drone deliveries to backyards in Fayetteville, NC, before being permitted to extended its footprint to neighboring Raeford and Holly Springs – a flight range of one nautical mile. As part of that authorization, Flytrex craft – operated by local partner Causey Aviation Unmanned – can fly above people and moving cars.

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It has been working closely with the FAA in its BEYOND initiative to help tackle the remaining challenges of safe and efficient drone integration, including beyond visual line of sight operations. Though the company won't be releasing full details on that expanding 2021 activity, Flytrex drones are making "dozens" of on-demand deliveries inside the promised five-minute deadline. https://dronedj.com/2022/02/04/flytrex-ceo-forecasts-a-bust-out-2022-for-drone-delivery-activity-and-his-company-amidst-that/#more-76211

Canadian Coast Guard Conducts Offshore Sea Trials of VTOL UAS February 3, 2022 News

Kongsberg Geospatial announced today they successfully conducted sea trials of the Shield AI V-BAT Unmanned Aerial System (UAS) on behalf of the Canadian Coast Guard, operating from a small cargo vessel far offshore in international waters.

The Canadian Coast Guard is conducting trials of the long-endurance Vertical Take-off and Landing (VTOL) UAS surveillance system for possible deployment on Canadian Coast Guard Vessels under a project funded by Defence Research and Development Canada. The Shield AI V-BAT aircraft was selected due to its unique ability to combine VTOL from the small confines aboard ship with the long endurance of a fixed-wing aircraft while carrying multiple sensors.

Kongsberg Geospatial teamed with Shield AI to deploy the V-BAT VTOL UAS for a 3-day sea trial in international waters in the Gulf of Mexico. The trials tested the capability of the aircraft to provide rapid launch and recovery, long endurance, and confined space take-off and landing from a moving vessel in a variety of weather conditions – both during the day, and at night.

The V-BAT operators used Kongsberg Geospatial's IRIS UxS software to safely pilot the aircraft at long ranges from the launch vessel. The IRIS software provides a comprehensive situational awareness picture of the operational airspace, data from a variety of sensors and data feeds, and shows the location of other aircraft and surface ships, as well as the launch vessel and the "ownship", or drone being operated. https://uasweekly.com/2022/02/03/canadian-coast-guard-conducts-offshore-sea-trials-of-vtol-uas-with-shield-ai-and-kongsberg-geospatial/?utm_source=rss&utm_medium=rss&utm_campaign=canadian-coast-guard-conducts-offshore-sea-trials-of-vtol-uas-with-shield-ai-and-kongsberg-geospatial&utm_term=2022-02-03

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Sweden is betting on defibrillator-bearing drones to reach heart attack patients quicker By Euronews & AP 03/02/2022

When an alarm sounds at the Everdrone control room on the outskirts of Gothenburg, it means there's a medical emergency and its remote pilots should prepare to send an automated drone buzzing through the skies.

Swedish drone developer Everdrone has been collaborating with researchers at Stockholm's Karolinska Institute and the country's emergency dispatch organization since 2019, exploring the use of drones to deliver automated external defibrillators to cardiac arrest patients, wherever they are.

"An autonomous system that can start instantly and has no issues with traffic will be much faster on site than an ambulance," said Everdrone founder and CTO Maciek Drejak.

"You still need an ambulance to take care of the patient, but if we can deliver the AED only a few minutes earlier, the gain is very large. The probability of surviving drops by approximately 10 per cent points per-minute, so every minute counts, every second counts, actually".

Karolinska Institute associate professor Andreas Claesson says Sweden's emergency medical services receive reports of about 6,000 cardiac arrests a year; only around ten per cent of those patients survive. https://www.euronews.com/next/2022/02/01/sweden-is-betting-on-defibrillator-bearing-drones-to-enhance-their-emergency-response-serv

Navajo Nation tests specialized drone for medical and emergency deliveries

KNAU News Talk - Arizona Public Radio Ryan Heinsius January 31, 2022

On Sat, Jan. 22, 2022 Navajo Nation President Jonathan Nez and other officials were on hand in Window Rock for the first flight of a drone called Healing Eagle Feather. It's capable of delivering medical and other emergency supplies to remote parts of the reservation.

The Navajo Nation has begun testing a specialized drone to deliver medical supplies and other essential items. Officials hope the technology could assist tribal members in remote or inaccessible parts of the reservation.

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On a recent Saturday, President Jonathan Nez and other Navajo leaders gathered in Window Rock for the first flight of the Healing Eagle Feather drone. They simulated four deliveries and officials anticipate using the technology to distribute medical supplies like insulin along with meals, animal medicine, emergency communication devices and anti-venom.

Navajo Nation leaders witnessed the first flight of the Healing Eagle Feather drone in Window Rock on Sat, Jan. 22, 2022.

The drone could also assist communities that are cut off because of washed out or impassable roads after monsoon rain or heavy snowfall.

The solar-powered drone has a maximum capacity of 14 pounds with a 20-mile flight radius. Navajo officials say they could eventually deliver ballots to increase voter turnout on the reservation and use the drone for geological surveying and to improve rural addressing. https://www.knau.org/knau-and-arizona-news/2022-01-31/navajo-nation-tests-specialized-drone-for-medical-and-emergency-deliveries

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FAA announces "one million LAANC airspace authorizations" February 4, 2022 Philip Butterworth-Hayes UAS traffic management news

The US Federal Aviation Administration (FAA) reports it has issued its millionth airspace authorization via the Low Altitude Authorization and Notification Capability (LAANC) for drone pilots to use busy airspace safely.

"This system has allowed drone pilots to gain timely access to busy airspace without sacrificing safety," said Teri L. Bristol, the chief operating officer of the FAA's Air Traffic Organization. "We are grateful to everyone who helped us reach this milestone safely."

In a press release the FAA says: "Since becoming an official program in 2018, LAANC has provided an automated system for drone pilots– both commercial pilots and recreational pilots – requesting to fly below 400 feet in controlled airspace. Drone pilots are able to request airspace authorizations through any of the FAA-Approved LAANC Service Suppliers up to 90 days before they plan to fly. The system now covers 542 air traffic facilities serving approximately 735 airports. LAANC also allows the agency to provide drone pilots with

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information and guidance on where they can and cannot fly a drone.
https://www.unmannedairspace.info/latest-news-and-information/faa-announces-one-million-laanc-airspace-authorisations/

U.S. Senators Take Another Shot at DJI: the "Countering CCP Drones Act" Miriam McNabb February 04, 2022

Yesterday, U.S. Senators Marco Rubio (R-FL), Rick Scott (R-FL), and Tom Cotton (R-AR) took another shot at Chinese-made drone tech and the world's largest drone manufacturer, DJI, while Congress member Elise Stefanik (R-NY) introduced parallel legislation in the House of Representatives. The Senators introduced the *Countering CCP Drones Act,* to add DJI to the Federal Communications Commission's "Covered List" which "identifies telecommunication equipment that poses a threat to America's national security" and bans their use in U.S. communications infrastructure.

The move comes after an article the Washington Post stated that DJI "obscured its Chinese government funding while claiming that Beijing had not invested in the firm." In the press release, DJI is described as "Chinese Communist Party (CCP) affiliated drone company Da-Jiang Innovations (DJI)."

The move is the latest in a long string of proposed legislation and bans designed to lessen DJI's impact on the U.S. drone industry. Most recently, Representatives petitioned U.S. Commerce Secretary Gina Raimondo to add DJI to the Department of Commerce "Entity List," making it more difficult for U.S.-based companies to provide the company with parts or services.
https://dronelife.com/2022/02/04/u-s-senators-take-another-shot-at-dji-the-countering-ccp-drones-act/

FAA seeks industry proposals for research in eVTOL downwash/outwash effects

February 7, 2022 Philip Butterworth-Hayes UAS traffic management news, Urban air mobility

The Federal Aviation Administration has issued a request for white papers for industry to deliver research proposals for Small-Scale Outwash and Downwash Testing for Vertiports for Advanced Air Mobility. White papers are due March 3, 2022.

According to the FAA research request posted on sam.gov: "A major

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component that can affect the design parameters of a vertiport's landing area is the downwash and outwash created by VTOL aircraft while taking off or landing. Unlike traditional helicopter design, VTOL aircraft have multiple rotors appearing in a variety of different configurations. The effect of downwash and outwash in these novel aircraft configurations can impact the size requirements of the safety area surrounding a vertiport's touchdown and lift off area. https://www.unmannedairspace.info/latest-news-and-information/faa-seeks-industry-proposals-for-research-into-evtol-downwash-outwash-effects/

Tech Xplore: Engineers design quieter future for drones 5 FEB 2022

UC College of Engineering and Applied Science assistant professor Daniel Cuppoletti studies propeller noise in an anechoic chamber in an aerospace engineering lab.

Tech Xplore highlighted research by aerospace engineering students at the University of Cincinnati to reduce the noise of drones and flying cars.

UC College of Engineering and Applied Science assistant professor Daniel Cuppoletti and his students are examining how propellers in different sizes, configurations, number, and rotation can affect noise. Students presented their research at the American Institute of Aeronautics and Astronautics' Science and Technology Forum and Exposition in January.

"I'm looking at noise from a societal impact," Cuppoletti said. "These vehicles have to be imperceptible in the environment they fly in, or someone will have to take the brunt of that impact." Cuppoletti and his students study propeller noise in an anechoic chamber lined with sound-dampening tiles. https://www.miragenews.com/tech-xplore-engineers-design-quieter-future-for-719165/

Autonomous drone inspection solution prevents pilot visits to remote solar farms Ishveena Singh - Feb. 7th 2022

Singapore-based drone technology player H3 Dynamics is joining forces with Sitemark – a specialist AI-analytics company from Belgiu – to launch a new robots-as-a-service solution for autonomous solar farm monitoring and inspection.

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The partnership combines a drone-in-a-box solution from H3 Dynamics with visual and thermal analytics from Sitemark to automate and scale up remote monitoring operations in large solar farm installations. Sitemark brings a ton of experience in the field to the table. Its solutions have been deployed by companies like Total, Bouygues, EDF, Engie, and Orix to inspect over 30,000 ha of solar PV parks in 35 countries.

Meanwhile, H3 Dyanamics has recently launched a new product called DBX G7 – an agnostic drone-in-a-box platform – to automate drones from any manufacturer. Since their combined solution can be deployed permanently at any solar farm location, it can easily be used to track construction progress, identify solar panel degradation, as well as provide on-site security. https://dronedj.com/2022/02/07/autonomous-drone-inspection-solar-farms/

Researchers pair drones, machine-learning against marine litter Bruce Crumley - Feb. 7th 2022

A project in support of the National Oceanic and Atmospheric Administration (NOAA) is pairing sensor-equipped drones with machine-learning applications to automate the identification and mapping of marine waste and create effective methods for its collection and disposal.

NOAA's National Centers for Coastal Ocean Science (NCCOS) and Oregon State University are leading the drive to construct an integrated system to spot and identify large volumes of marine waste. Drones flying with polarimetric cameras capture images that are fed into a machine-learning computer program to identify, classify, and map the marine debris. The campaign will create operationally viable procedures and workflows suitable for implementation by NOAA's Marine Debris Program.

The project conducted tests last December, overflying beaches near Corpus Christi, Texas, to evaluate UAV performance and refine detection methods. The trials equipped UAVs with polarimetric cameras. Sensors pick up the differences in polarized light reflecting from human-made objects like plastic and metals compared to vegetation, soil, rocks, and sand. The data of the non-natural debris is run through the machine-learning program which, over time, trains itself to identify different kinds of marine liter and place it on maps with indications of volumes involved. https://dronedj.com/2022/02/07/researcher-pair-drones-machine-learning-against-marine-litter/

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Joby Aviation Partners with South Korea's SK Telecom Thom Patterson February 7, 2022

California-based Joby Aviation (NYSE:JOBY) is partnering with telecommunications giant SK Telecom (NYSE:SKM) to bring a zero-emissions air taxi service to South Korea. Both companies have signed a strategic agreement to support South Korea's 2020 urban air mobility plan.

Joby – a developer of electric, vertical takeoff and landing aircraft – will leverage SK's mobility platform and ride-hailing service UT to provide travel across multiple modes of ground and air transportation. Both Joby and UT are backed by Uber (NYSE:UBER).

Joby has been flying full-sized prototype air taxis since 2017 and has logged more than 1,000 test flights. A test article aircraft flew 150 sm on a single charge last year in California and recently achieved a speed of 205 mph (178 kts) and an altitude of more than 11,000 feet.

The company says it's on track to achieve full FAA certification and enter service by 2024. Joby plans to offer air taxi flights in the U.S. through the Uber ride-sharing app. https://www.flyingmag.com/joby-aviation-partners-with-south-koreas-sk-telecom/

AirData and Skydio Announce Technology Partnership Miriam McNabb February 07, 2022 by DRONELIFE Staff Writer Ian M. Crosby

Flight data management leader AirData UAV announced today a new technology partnership with Skydio, the leader in drone manufacturing and autonomous flight. This new partnership will enable the integration of Skydio Cloud into AirData's robust fleet management platform, offering customers a complete fleet management solution.

Skydio sees extensive use in enterprise and public sectors and leads the industry in autonomous drone technology. This new integration with Skydio Cloud will further improve AirData's ability to serve customers and their fleets while also providing Skydio customers with a reliable method of tracking and managing their fleets, managing compliance and maintenance, and minimizing risk.

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AirData automatically retrieves Skydio 2, Skydio X2, and Skydio 2+ flight data via API-driven integration, fulfilling compliance requirements, detecting early indications of problems to prevent surprises while also tracking maintenance and providing users with operational reports.

Additionally, Skydio pilots will soon have the ability to Live Stream footage from their Skydio drone to the AirData platform without any additional hardware. The easy-to-use interface will offer 1-second latency over standard mobile hotspots, providing real-time visibility for remote viewers. https://dronelife.com/2022/02/07/airdata-and-skydio-announce-technology-partnership/

UAS Program to Monitor Burmese Pythons in the Everglades Sarah Simpson / 07 Feb 2022

An academic agreement between Warren County Community College and Embry-Riddle Aeronautical University has facilitated growth in a joint research project that will use unmanned systems to study Burmese pythons in southern Florida.

Warren and Florida-based Embry-Riddle are combining their efforts in researching new methods of detecting and removing pythons in select southern Florida waterways, including the Everglades. The research project, which was enhanced with assistance of the Florida Fish and Wildlife Conservation Commission and the South Florida Water Conservation District, is deemed essential as the pythons have been causing excessive damage to the area's ecosystem for over 10 years.

Warren and Embry-Riddle plan on designing a specially made drone with numerous cameras providing infrared, near infrared, and polarizing capabilities that may be able to better detect the pythons and their habits from the air compared to ground-based commercially off-the-shelf options currently available.

Pete Miller (left) Unmanned Systems Specialist and Dr. Will Austin (right) Chief Pilot from WarrenUAS stand with some of the equipment they provided to the project.

The Burmese pythons, a non-native invasive species of snake to southern Florida, have ravaged every native species from the raccoon, opossum, rabbit, and bird populations to fauna and foliage. Pythons represent a species that reproduces effectively and grows rapidly in the Everglades environment reaching lengths up to 18ft. Many earlier research estimates suggest that native species observed in the

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Everglades since the snakes were first discovered may well have declined by up to 90% in the past decade.

Warren, with its state-of-the-art Unmanned Aircraft Systems program, and Embry-Riddle's reputation as the leading aeronautical university, make a perfect team to delve deep into the python world. https://www.unmannedsystemstechnology.com/2022/02/uas-program-to-monitor-burmese-pythons-in-the-everglades/?utm_source=UST+eBrief&utm_campaign=31e3c8fb4b-ust-ebrief_2022-feb-8&utm_medium=email&utm_term=0_6fc3c01e8d-31e3c8fb4b-119747501&mc_cid=31e3c8fb4b&mc_eid=0d642a9d48

What's happening with Wing drone delivery in Dallas? Ishveena Singh - Feb. 8th 2022

We first reported about Wing prepping for store-prepared orders in what would possibly become its biggest urban market yet in October 2021. Over the past four months, the Alphabet subsidiary has been working with the residents of Frisco and Little Elm to get feedback about its plans, answer questions, and tweak its offerings.

To place an order, customers are expected to use the marketplace within the Wing app to select items, then choose a delivery zone option for their home – could be a yard, driveway, or both – and place the order.

These orders will then be fulfilled by Walgreens employees, not Wing, under a new partnership model. In this model, instead of one main Wing nest for delivery aircraft and operations, the company plans to engage several smaller nestlets co-located at local businesses, starting with Walgreens. These nestlets would take as little space as a few parking spaces and allow for partners to directly fulfill orders placed with their store.

In addition to setting up the nestlet model and the technical aspects of the operations, Wing explains it is also working with regulators, aviation stakeholders, city officials, and, most importantly, its new neighbors. https://dronedj.com/2022/02/08/wing-drone-delivery-dallas/#more-76310

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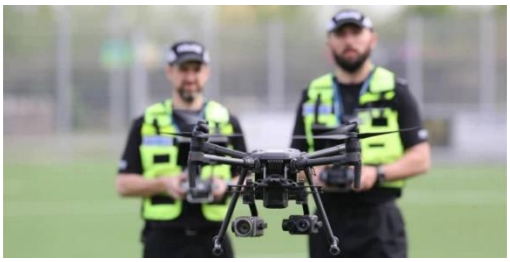
UK units to test BVLOS deployment of police drones Bruce Crumley - Feb. 8th 2022



Tl Police Air Service (NPAS) has selected four drone-equipped law enforcement divisions to help gauge the "capabilities (BVOLS) may provide to police aviation in the future." Leading that charge is the Norfolk constabulary, along with those of West Midlands, Thames Valley, and London's Met. All those participants have experienced UAV units and will presumably get a crack at flights well beyond visual contact once the trials pick up speed.

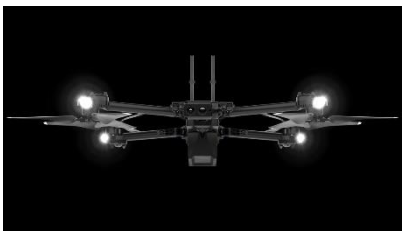
The NPAS statement reads. "(Testing) is predominantly in area searches for missing and vulnerable people, suspects, vehicles, and property. The project will not only consider drone types but also command and control and hazard detection systems to ensure compliance with Civil Aviation Authority regulatory policies and procedures."

As the process advances, many eyes will be on Norfolk. The unit currently boasts 22 trained UAV pilots and 20 vehicles – a fleet that has expanded quickly in the past year and will soon add indoor and fixed-wing craft.

Its annual report released late last year said the Norfolk constabulary deployed its drones on police missions or in support of fire services 1,484 times, versus 657 the previous year – the first it possessed those aerial assets. Flights included 329 previously scheduled outings and 1,226 responding to reports of various crimes underway. https://dronedj.com/2022/02/08/uk-units-to-test-bvlos-deployment-of-police-drones/

Skydio poised to supply first tranche of short-range recon drones to US Army

Jen Judson Feb 9, 2021



WASHINGTON — The U.S. Army has chosen California-based drone manufacturer Skydio to continue in a final prototyping phase, which should lead to the company supplying the service's first tranche of short-range reconnaissance unmanned aircraft systems. If approved for production, the Army will begin fielding within 90 days.

Skydio's X2D comes with AI-driven flight autonomy software. It is a foldable and portable system "that leverages composites to withstand the most demanding environments," the

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statement adds. The UAS comes with a color FLIR thermal sensor and a GPS-based night flight capability and strobe lighting. It can also fly for up to 35 minutes on a single battery.

In August 2020, the Pentagon's Defense Innovation Unit chose five American-manufactured drone companies as trusted small UAS. Those manufacturers are Altavian, Parrot, Skydio, Teal and Vantage Robotics. The drones available to the Pentagon through the program are required to be assembled in two minutes or less and have an operational range of more than 3 kilometers, flight endurance greater than 30 minutes and can fly through dust and rain and other degraded environments. https://www.defensenews.com/land/2021/02/09/skydio-poised-to-supply-first-tranche-of-short-range-recon-drones/

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Honeywell Drone-Mounted Radar: Helping Unmanned Systems Avoid Mid-Air Collisions

Miriam McNabb February 08, 2022 by DRONELIFE Staff Writer Ian M. Crosby

Honeywell's IntuVue RDR-84K radar system, a part of Honeywell's Beyond-Visual-Line-of-Sight suite of technologies, has successfully piloted a drone in a high-stakes game of dodgeball, continually avoiding intruder aircraft in a series of tests that are crucial to the future of autonomous aviation. These tests showcased the ability of the radar to not only detect airborne traffic but also decide autonomously on a course of action by taking over navigation and piloting the aircraft to safety using its onboard processor.

While the RDR-84K, weighing in at just under 2 pounds and the size of a paperback book, has previously demonstrated its ability to detect noncooperating traffic during extensive testing, the new tests marked the first time it has performed the avoidance function without human intervention.

Honeywell engineers flew two quadcopter drones, both on autopilot, directly towards each other. In multiple flights, the drone equipped with the RDR-84K detected the noncooperating "intruder" drone and examined its flight path before calculating an avoidance maneuver and taking over navigation — flying in a new direction or stopping midair, depending on winds and other factors. Once there was no longer danger of collision, the radar released control of the drone, and the autopilot guided it back to its original course.
https://dronelife.com/2022/02/08/honeywell-drone-mounted-radar-helping-unmanned-systems-avoid-mid-air-collisions/

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DARPA flies Black Hawk autonomously, no pilots on board Garrett Reim 8 February 2022

The US Defense Advanced Research Projects Agency flew a UH-60A Black Hawk, retrofitted with Sikorsky's Matrix technology, autonomously, without pilots on board for the first time.

The first flight of the "optionally piloted vehicle" was over the US Army's Fort Campbell in Kentucky on 5 February. During the first flight, the helicopter started up autonomously, went through pre-flight checks, took off, performed simple forward flight and pedal turn maneuvers, landed, and powered down.

The second flight, on 7 February, which lasted 30 minutes, took place at about 4,000ft altitude and at a 110kt cruise speed. The flight simulated the UH-60A flying between buildings in downtown Manhattan. To simulate New York City's skyline, the Matrix computer was fed fake LiDAR data. Sensors, such as LiDAR, in actual flight would be used to help the helicopter avoid obstacles, such as buildings or terrain.

DARPA sees two general uses for Matrix: freeing pilots from flying to think about other tasks, such as mission management; and creating safety protections, such as automatic obstacle avoidance. When it comes to emergency situations, the quick reaction time of the Matrix system performs better than human pilots. https://www.flightglobal.com/helicopters/darpa-flies-black-hawk-autonomously-no-pilots-on-board/147424.article

Destinus raises $29 million for hypersonic plane Debra Werner — February 9, 2022

Destinus flew Jungfrau, its car-sized prototype subsonic vehicle, in November at an airport near Munich.

SAN FRANCISCO – Destinus SA, the Swiss startup founded by serial entrepreneur Mikhail Kokorich, has raised 26.8 million Swiss francs ($29 million) for its campaign to offer hydrogen-powered supersonic flight.

Investors include Conny & Co, a Swiss investment company founded by angel investor Cornelius Boersch, Quiet Capital and Liquid2 Ventures of San Francisco, Boston-based One Way Ventures, Cathexis Ventures of Houston and Geneva-based Ace & Company.

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Destinus is developing a vehicle that takes off and lands horizontally under the power of airbreathing jet engines. Once out of controlled airspace, Destinus' hyperplane is designed to accelerate to hypersonic speeds with the help of a cryogenic hydrogen-fueled rocket engine, according to the company's Feb. 8 news release.

Destinus has been testing airbreathing engines during flight tests of an unpiloted prototype. By the end of the year, the company aims to show its prototype can break the sound barrier.

Destinus' hyperplanes initially will serve the rapidly growing air cargo market. "We see a market for ultra-fast freight that can reduce express delivery times anywhere globally from the current 48-72 hours to 6-12 hours or less," Kokorich said. Destinus could begin offering cargo service with "a relatively small vehicle that can carry on the order of a ton to anywhere," he added. https://spacenews.com/destinus-seed-round/

France's Defense Ministry developing bird-like stealth drone Bruce Crumley - Feb. 9th 2022

Researchers supported by France's Defense Ministry are working to develop a more effective surveillance drone that's also less prone to detection by its imitation of birds or insects.

L'Agence de l'innovation de défense (AID), a section of France's Defense Ministry that encourages and finances development of new, military-applicable technologies, is backing the project. It has thrown its weight behind the stealth drone known as Biofly, which has already produced craft that resemble a bird and dragonfly-ish insect.

First to arise from that effort was a drone dubbed Bionic Bird. That *Oiseau Bionique* is made of a polymer body outfitted with flapping carbon fiber wings. The motion was not only designed to allow the craft to pass easier as a bird while it spies from the sky but also to increase its performance efficiency.

Recent improvements have given rise to an updated version of the UAV, as well as the insect-like variant. Though still a work in progress, officials at France's Defense Ministry have been encouraged by the promising efficiencies of flight the drone has already attained, as well as the continued on-loading of tech that will include high-resolution cameras and effective body

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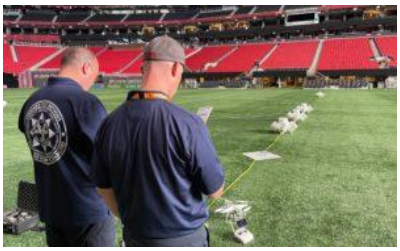
stabilizers to offset the flapping motion of the wings. https://dronedj.com/2022/02/09/frances-defense-ministry-developing-bird-like-stealth-drone/

10Feb22

Standardizing Public Safety Drone Operations with NIST Testing Miriam McNabb February 09, 2022 by DRONELIFE Staff Writer Ian M. Crosby



Non-profit organizations the Airborne Public Safety Association (APSA) and the Airborne International Response Team (AIRT) have entered into an agreement of cooperation to support the implementation of the National Institute for Standards and Technology (NIST) Test Methods for Small Unmanned Aircraft Systems (sUAS) to improve the safety and proficiency surrounding public safety drone operations.

The agreement will see APSA and AIRT – the official home of the DRONERESPONDERS program – collaborate to promote validation and dissemination of the NIST test methods for sUAS. The two organizations will work together in developing best practices for using the tests to support training with standard measures of remote pilot proficiency for public safety and emergency services organization operating drones for life safety missions.
https://dronelife.com/2022/02/09/apsa-and-airt-collaborate-standardizing-public-safety-drone-operations-with-nist-testing/

Singapore Mobility Provider Yugo Signs for Electra eSTOLs Graham Warwick February 10, 2022

Singapore-based private aviation charter company Yugo has partnered with U.S. startup Electra.aero to develop an air mobility network in the Asia-Pacific region.

The memorandum of understanding envisages Yugo acquiring up to 12 of Electra's electric short-takeoff-and-landing (eSTOL) aircraft.

Yugo provides on-demand charter flights in helicopters and business jets ranging from Cessna Citations to the Gulfstream G650ER. Electra is developing a hybrid-electric aircraft designed to carry nine passengers up to 500 mi. with the ability to take off and land in spaces as small as 300 X 100 ft.

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Under the agreement, the companies will jointly pursue urban and regional passenger and cargo markets that can be served by Yugo's network using the aircraft's ultra-STOL capability. Yugo will also provide input on performance, economics and passenger experience to design of Electra's aircraft. https://aviationweek.com/shownews/singapore-airshow/singapore-mobility-provider-yugo-signs-electra-estols?utm_rid=CPEN1000003332045&utm_campaign=31562&utm_medium=email&elq2=7d5f3205383340f598e5ec00c854f4b0&utm_emailname=AW_News_Aerospace_20220210

U.S. Air Force funding helps Electra.aero demonstrate Hybrid Electric Short Takeoff Aircraft Staff and Wire Reports Feb. 8, 2022

The U.S. Air Force has awarded a research contract to an aerospace firm developing a hybrid-electric ultra-short takeoff and landing (eSTOL) aircraft.

The USAF's Phase III Small Business Innovation Research contract supports Electra-.aero Inc's work on eSTOL technology. This funding will accelerate Electra's plan to begin flight testing a full-scale hybrid electric eSTOL demonstrator aircraft later this year.

Electra was awarded an Agility Prime SBIR Direct-to-Phase II contract earlier last year, which accelerated the development of Electra's hybrid-electric propulsion system technology.

ESTOL aircraft could fly with a single pilot and up to 7 passengers onboard. Electra, which formed in 2020, says its model could lower operating costs 70 percent below vertical takeoff alternatives. https://www.energytech.com/emobility/article/21216282/us-air-force-funding-helps-startup-demonstate-hybrid-electric-shoft-takeoff-aircraft

Steadicopter Debuts Black Eagle 50H Hybrid VTOL UAS Chen Chuanren February 09, 2022

Israel's Steadicopter has unveiled its Black Eagle 50H hybrid vertical takeoff and landing unmanned aircraft system (VTOL UAS), which it says is the first in its class and combines the best of both its electric and petrol-power. It can achieve maximum speeds of 70 kt. and a range of 150 km (93 mi.) with data link. Lidor says operators can toggle between either power source.

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The Black Eagle continues to have the "man-in-the-loop" function, depending on customer and regulation requirements, although Lidor says it is fully capable of being completely autonomous. The ground control system also can handle and separate two or more Black Eagles in more complex missions.

Noam Lidor, Steadicopter vice president, did not say how many customers Steadicopter has, but confirmed it is flying with both security and civilian customers "inside and outside of Israel." He also indicated that Steadicopter is developing a new product and will be ready to unveil it in "the coming months."

The Black Eagle 50H will make its public debut at the Singapore Airshow Feb. 15-18.
https://aviationweek.com/shownews/singapore-airshow/steadicopter-debuts-black-eagle-50h-hybrid-vtol-uas

Logistics provider Flexport interested in self-flying cargo jets

Eric Kulisch, Air Cargo Editor February 9, 2022

Natilus says it has $6B in commitments for family of autonomous freighters

Third-party logistics provider Flexport, flush with fresh investor funding, has tentatively ordered two large autonomous cargo jets with a 100-ton payload from startup aircraft manufacturer Natilus.

San Diego-based Natilus on Wednesday announced $6 billion in advance purchase commitments of more than 440 aircraft from Flexport plus Kenyan all-cargo airline Astral Aviation; Volatus Aerospace, a drone services provider; Dymond Group, a management services and consulting company with an aerospace division based in Ottawa, Ontario; and Aurora International, an aerospace company developing autonomous aircraft products and services in the Kingdom of Eswatini, formerly Swaziland.

Natilus is developing a family of pilotless cargo jets, starting with a 3.8-ton twin-engine turboprop able to carry the equivalent of seven LD3-45 small shipping containers for short-haul feeder service. The N3.8T is in prototype production, with its first test flight scheduled for 2023.

Other variants will include a 60-ton medium-haul aircraft and a 130-ton payload long-haul jet. The 100-ton type will have a maximum range of 5,400 nautical miles.
https://www.freightwaves.com/news/logistics-provider-flexport-orders-self-flying-cargo-jets

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The aircraft that will never fly on Earth Mark Piesing 8 February 2022

If you could fly a drone in the skies of Mars, you could cover a lot more territory far more quickly than with a rover. But designing one is an enormous challenge.

On 19 April 2021, a tiny experimental helicopter named Ingenuity lifted off the Martian ground and into the history books. The autonomous machine's rotors spun furiously in the thin atmosphere to produce enough lift, propelling the craft to the height of a single-story building. Ingenuity hovered and then landed safely, delivering humanity's first controlled flight on another planet.

In the mid-2030s, a rotorcraft the size of a small car, called Dragonfly, is scheduled to take the next step. It will land on Saturn's largest moon, Titan, to begin humanity's first mission to explore it. In one hour, Dragonfly will fly further than any surface-based rover has ever travelled on another planet. The multi-rotor drone-like vehicle will fly across the surface of Titan, landing for one Titan-day (16 Earth days) to carry out experiments before flying on to its next destination. https://www.bbc.com/future/article/20220207-the-drones-that-will-fly-in-alien-skies

11Feb22

FAA grants BVLOS drone waiver for a 12-mile distance, its longest ever Ishveena Singh - Feb. 10th 2022

Drone solution providers Censys Technologies and Soaring Eagle Technologies have secured a fresh beyond visual line of sight (BVLOS) waiver from the Federal Aviation Administration. This waiver covers a 12-mile distance, which the companies stress is the longest distance ever approved by the FAA.

Over the past three years, both companies have worked with the FAA to build a safety case for Iris Automation's advanced detect-and-avoid system. They have completed thousands of flights in the process and secured two other BVLOS waivers previously.

The new waiver will be utilized specifically for inspecting transmission power lines. Per the FAA's Part 107.31/33 waiver provisions, the Soaring Eagle team will be able to fly three miles down range for a total of six miles of data.

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Will Paden, president of Soaring Eagle, says: Soaring Eagle, Censys, and Iris Automation are on a mission to help surveyors, engineers, and asset managers – including those responsible for utilities, bridges, and other critical infrastructure – bridge the gap in cost-effectiveness in applications of unmanned aviation.

It's safe to say this waiver is one of Censys' most expansive yet. The company, which helped its customers secure five FAA BVLOS waivers in 2021 alone, credits its success to the team's industry expertise and ability to get clients' aircraft in the sky quickly and efficiently. https://dronedj.com/2022/02/10/faa-bvlos-waiver-longest/#more-76434

SKYDIO LANDS $20.2 MILLION U.S. ARMY CONTRACT (WORTH UP TO $99.8 MILLION) February 8, 2022 Sally French

California-based Skydio's technology was selected by the U.S. Army for what's called its Short Range Reconnaissance Program of Record. With it comes a contract managed by the Program Executive Office for Aviation's Unmanned Aircraft Systems Project Management Office with a base year value of $20.2 million. In it, Skydio will supply U.S. Army solders with its autonomous drone tech. More specifically, solders will be equipped with a rapidly deployable small drone solution designed to be used for Reconnaissance and Surveillance activities.

The contract was set up as a Firm-Fixed-Price Five Year Production Other Transaction agreement, which means it could be worth up to $99.8 million across the duration of the period.

Skydio was selected from a set of more than 30 other vendor proposals that were whittled down to five finalists which were tested in partnership with the Army's Defense Innovation Unit. After all that, the Army chose Skydio based on factors including soldier feedback, product performance, quality, and production readiness. https://www.thedronegirl.com/2022/02/11/skydio-army-contract/

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Advanced Aircraft Company Secures AFWERX Contract for Next-Generation Tactical UAS February 10, 2022 News

Advanced Aircraft Company, a developer of long-endurance hybrid-electric unmanned aircraft systems designed for commercial, defense and public safety applications, has been selected by the United States Air Force AFWERX program for the development of Small Unmanned Aerial Systems as part of the Small Business Innovation Research program.

AFWERX, in partnership with the Air Force Research Lab and the National Security Innovation Network, developed SBIR Open Topics to increase the efficiency, effectiveness, and transition rate of the SBIR program.

The HAMR UAS can be optimized for a wide range of defense applications and mission profiles including long-endurance tactical ISR, perimeter security, search and rescue, and medical supply delivery missions.

“We are thrilled to be part of the SBIR program Open Topics Cohort and look forward to a successful collaboration,” said Bill Fredericks, Founder of AAC. “Our HAMR UAVs propulsion system, rugged aerodynamic airframe, and ease of serviceability in the field make it ideally suited for military operations in the most inhospitable environments.”

The HAMR utilizes a series hybrid fuel-electric propulsion system that incorporates an electronic fuel injected and computer-controlled single-cylinder piston engine driving an integrated generator producing up to 2000W to power six independent brushless DC electric motors and a backup battery. https://uasweekly.com/2022/02/10/advanced-aircraft-company-secures-afwerx-contract-to-develop-next-generation-tactical-uas/?utm_source=rss&utm_medium=rss&utm_campaign=advanced-aircraft-company-secures-afwerx-contract-to-develop-next-generation-tactical-uas&utm_term=2022-02-11

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