UAS and SmallSat Weekly News

Contents

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2Apr22

NATO Investigates How Russian and Ukrainian Drones Bypassed Europe's Air Defense System Bojan Pancevski Mar. 31, 2022

The U.S. has installed Patriot air-defense systems near Poland's border with Ukraine, but the system didn't react to a drone incursion in March.

Russian and Ukrainian drones that crashed in bordering European countries, or entered their airspace, have prompted an investigation into how to close a hole in NATO's military air defenses.

In a March 10 incident, a large, explosives-laden drone launched from Ukraine lost contact with its operator, flew over two North Atlantic Treaty Organization countries and crashed in Zagreb, Croatia, next to a student dormitory.

Four days later, a Russian Orlan-10 reconnaissance and electronic warfare drone went down in Romania—another NATO member—about 93 miles from the Ukrainian border after running out of fuel, the Romanian government said. On the same day, another Russian spy drone crossed into Poland from Ukraine before re-entering Ukrainian airspace, where it was shot down, Ukraine's military said.

The drone crash in Croatia, in particular, raises alarms about weaknesses in NATO's air defense system, said Goran Redzepovic, a senior official with Europe's air-traffic control agency Eurocontrol who formerly served in the Croatian air force.

The NATO countries in the drone's path detected but failed to identify the drone, and none of them scrambled jet fighters to intercept the potentially hostile aircraft.
https://www.wsj.com/articles/nato-probes-drone-crashes-that-expose-border-weaknesses-11648724385

FOREST MONITORING DRONE COMPANY TREESWIFT GETS SEED March 28, 2022 Sally French

A seed round for the company that could help grow more forests — it's happened to Philadelphia-based drone company Treeswift. Treeswift is working to use drones to generate

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easily-accessible precision data and analyses, which could them be used by people working in forest management.

The drone startup in March announced a seed funding round of $4.8 million, bringing its total funding to $6.4 million to date.

It is still relatively small means in the drone investment world, which saw a record $7 billion in investments in 2021. But it signals more interest in using drones for forest management, which is a relatively new space in the drone industry. A few other companies working in aspects of forest management include DroneSeed, which uses drones to blast fertilizer and seeds into the ground at 350 feet per second.

It also signals emphasis on investment in companies that provide drones as a service, rather than companies that primarily sell hardware or software. Drone service companies received a combined $1 billion in 2021. https://www.thedronegirl.com/2022/04/01/treeswift-seed/

Terra Inspectioneering's UT drones to aid VTTI April 1, 2022 News

Terra Inspectioneering, a group company of Japan-based Terra Drone Corporation, has completed a series of confined space inspections using latest drone technology at ETT, the Dutch based terminal of the multinational tank storage company

Within this inspection, Terra Inspectioneering provided non-entry visual testing, ultrasonic thickness measurement including the rafters, and deformation analysis services to VTTI using the proprietary collision-proof Terra UT drone.

Traditionally, tank inspections are performed by sending staff into confined spaces. This method not only reduces the productivity of the terminal because of longer downtime but it also exposes inspectors to potentially hazardous conditions.

Maintenance engineer of ETT/VTTI, Ralph van Dijk, says, " It is very important for us to take storage tanks out of service for as short a time as possible. The drones film and take photographs. The software can also make 3D models. In contrast to the photos that rope access workers often take, the photo and video images from the drones are fantastic."
https://uasweekly.com/2022/04/01/terra-inspectioneerings-ut-drones-to-aid-

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vtti/?utm_source=rss&utm_medium=rss&utm_campaign=terra-inspectioneerings-ut-drones-to-aid-vtti&utm_term=2022-04-01

4Apr22

Offshore Drone Deliveries: Wingcopter and German Airways

Miriam McNabb April 02, 2022 Ian M. Crosby

In a joint letter of intent with Wingcopter, logistics and aviation holding company Zeitfracht Group and its subsidiary German Airways have pledged to acquire 17 Wingcopter 198 delivery drones, with the option to order 115 more by the end of 2023. The drones are set to be deployed in the back half of 2024 and will make Zeitfracht Group and its subsidiary some of the first companies in the world to employ drones for logistics.

The delivery drones are intended to be used for offshore drone deliveries and require the ability to land on a moving ship, a feature that German Airways and Wingcopter will collaborate to develop.

Each Wingcopter is capable of carrying up to five kilograms and can fly between 75 and 110 kilometers depending on the weight of its payload. Handpicked by German Airways for their resistance to wind and weather and for their payload-to-range ratio, Wingcopters take off vertically without the need for additional infrastructure and fly horizontally like a normal aircraft. With a fully electric propulsion system, they also produce zero emissions.
https://dronelife.com/2022/04/02/offshore-drone-deliveries-wingcopter-and-german-airways/

TEXAS WING DRONE DELIVERIES SET TO LAND THIS WEEK

April 1, 2022 Sally French

Wing is landing in Texas this week. The drone delivery company, which is a subsidiary of Alphabet (formerly known as Google), announced in October 2021 that it was heading to the Dallas-Fort Worth area. And now we have a clear date — and it's this Thursday, April 7, 2022.

Most of the deliveries are a partnership with Walgreens where drones will deliver health and wellness products. Drones will fly directly from one of the parking lots of a Walgreens store. Walgreens employees will have heavy involvement in the operation

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too. Their team members will process their own orders and load packages onto drones themselves. There will be Wing employees involved to an extent. They'll be able to oversee the delivery from a remote location.

Besides the Walgreens deliveries, Wing also announced today that it has established additional partnerships to deliver ice cream from Blue Bell Creameries, prescription pet medications from easyvet, and first aid kits from Texas Health.

For now, drone deliveries will begin in the city of Frisco, Texas, a suburb of Dallas. Frisco has not just tens of thousands of suburban homes, but also many tech-forward companies including offices of tech-powered real estate company Redfin. Wing will also operate in the nearby town of Little Elm. https://www.thedronegirl.com/2022/04/04/texas-wing-drone-deliveries-walgreens/

World Economic Forum launches UAM coalition of cities March 29, 2022 Philip Butterworth-Hayes Urban air mobility

The World Economic Forum (WEF) today at Amsterdam Drone Week launched a new coalition of cities which will work together to make the possibility of advanced and urban aerial mobility a reality.

According to a WEF press statement:

"By bringing together cities and regions at the forefront of this revolution, the World Economic Forum's Advanced and Urban Aerial Mobility Cities and Regions Coalitions will collaborate and share expertise to develop a range of solutions that other cities and regions can adopt based on their own circumstances.

"Founding city and region members include: – Amsterdam – Massachusetts – Orlando – Los Angeles – Île-de-France (Paris region)- Sao Paulo. The coalition will build on work that has taken place in Europe under the Urban-Air-Mobility Initiative Cities Community (UIC2) of the European Union's Smart Cities Marketplace. UIC2 will also join as a founding member and European arm of the coalition representing 37 cities and regions."
https://www.unmannedairspace.info/latest-news-and-information/adw-2022-world-economic-forum-launches-uam-coalition-of-cities/

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Texas drone restrictions overturned in favor of national press photographers

April 4, 2022 Jenny Beechener UAS traffic management news

The National Press Photographers Association (NPPA) has won a lawsuit brought in 2019 that challenges Texas' stringent drone restrictions. NPPA challenged the law after members experienced problems using drones for newsgathering in the state. When the law was first proposed in 2013, NPPA urged the legislature to reject the bill which amounted to a broad ban on drone use for a wide range of purposes that included journalism. In his ruling, District Judge Robert Pitman enjoined the Texas Department of Public Safety and the Texas Highway Patrol from enforcing Chapter 423 of the Texas Government Code, reports the NPPA.

"Among other incidents, NPPA member Brandon Wade, a Dallas area freelancer, was denied permission to fly his drone to document a publicly funded construction project based on the law, and NPPA member Billy Calzada, a staff photographer at the *San Antonio Express-News*, was threatened with arrest after photographing the aftermath of a fatal fire with his drone. Both incidents were cited as examples of the impact that the law had on journalists. NPPA was joined in the lawsuit by the Texas Press Association and freelance reporter Joe Pappalardo. https://www.unmannedairspace.info/latest-news-and-information/texas-drone-restrictions-overturned-after-judge-rules-in-favour-of-national-press-photographers/

Utah innovator working to get high-tech recon drones to Ukrainian troops Art Raymond March 14, 2022

George Matus, who launched Teal Drones as a teenager in 2014, holds one of his drones outside of the company's offices in Murray on May 13, 2019.

Beside sharing a Monday announcement that Utah-based Teal has just secured a second development contract with the U.S. Army, Matus is trying to get his Golden Eagle drones into the hands of Ukrainian soldiers currently battling Russian invasion.

"The Chinese DJI drones that have monopolized the industry over the last decade just can't be trusted to be used by allies. They have a backdoor that the Russians can use to track any DJI drones in the airspace, which is really dangerous in a situation like this when the Ukrainians use them."

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In a Deseret News interview Monday, Matus said he and his team have been speaking with numerous groups in Ukraine, as well as U.S. European allies, to get the U.S.-designed and manufactured Teal Golden Eagle drones into the hands of Ukrainian troops as fast as possible. https://www.deseret.com/utah/2022/3/14/22977652/utah-innovator-working-to-get-high-tech-recon-drones-to-ukrainian-troops-russia-ukraine-invasion

April 4, 2022 Red Cat Holdings, Inc., a hardware-enabled software provider to the drone industry, announces that its subsidiary Teal Drones has secured an order for 15 Golden Eagle drone units, plus spares and training, from a NATO (North Atlantic Treaty Organization) member country that has committed them to deployment in the Ukraine. https://uasweekly.com/2022/04/04/teal-drones-secures-purchase-order-for-golden-eagle-drone-units-from-nato-member-country-for-deployment-in-ukraine/?utm_source=rss&utm_medium=rss&utm_campaign=teal-drones-secures-purchase-order-for-golden-eagle-drone-units-from-nato-member-country-for-deployment-in-ukraine&utm_term=2022-04-04

Flying Forward 2020 Project Starts its Demonstrations of Autonomous Drones in Eindhoven April 4, 2022 News

Flying Forward 2020 (FF2020), a research project focusing on Urban Air Mobility funded by the European Union, will initiate autonomous drone demonstrations on High Tech Campus Eindhoven (HTCE). In the last year, FF2020 has been developing solutions that will be tested in five living labs starting in Eindhoven and continued in Milan, Zaragoza, Tartu and Oulu – enabling an open dialogue with stakeholders, end-users and citizens to improve processes, results and impact.

Demonstrations in Eindhoven will run from the end of March until September. A campus-based ecosystem of over 250 high-tech companies, HTCE is one of twelve FF2020 consortium partners and is considered by many to be the smartest square kilometer in Europe. The organization is home to more than 12,000 innovators, researchers, and engineers who develop new technologies and applications to help solve social problems and challenges and successfully bring them to the market. https://uasweekly.com/2022/04/04/flying-forward-2020-project-to-start-its-first-demonstrations-of-autonomous-drones-on-high-tech-campus-eindhoven/?utm_source=rss&utm_medium=rss&utm_campaign=flying-forward-2020-project-to-start-its-first-demonstrations-of-autonomous-drones-on-high-tech-campus-eindhoven&utm_term=2022-04-04

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Of rolling hills and snow-covered railways: UK drone pilots deliver award-winning shots

Ishveena Singh - Apr. 4th 2022

After reviewing over 800 stunning entries, the UK Civil Aviation Authority has announced four winners for its drone photography competition: #ShotOnMyDrone.

The competition was designed to both highlight the extraordinary shots drones can capture and educate people on how to use drones safely. The overall winner of the competition, and of the urban night category, is Andy Wells, who captures the liveliness of a Poole roundabout (above) illuminated in the darkness by surrounding cars and buildings.

The award for the best countryside shot has been picked up by Glen Cairns, whose photo of the Glenfinnan railway viaduct on the West Highland Line in Scotland captures the area's astounding natural beauty.

For the Christmas image award, Steve Banner's shot of Little Haywood Staffordshire in December captured the town as it was covered by snow, transporting viewers back to the joy of the festive period. Andy Betts took home the urban day category award for his vibrant image taken in Kent, featuring a striking rainbow of trucks.

The photograph of the Menai Strait in North Wales made the cut.

The winning images, all captured from 400 feet or below, are being exhibited at the prestigious London headquarters of the Royal Aeronautical Society.
https://dronedj.com/2022/04/04/uk-drone-photography-competition-winners-2022/#more-78968

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5Apr22

Drones in Forestry: TreeSwift Raises $4.8 M Miriam McNabb April 04, 2022 Ian M. Crosby

Philadelphia-based company Treeswift announced the acquisition of $4.8 million in Seed funding. The funding was led by Pathbreaker Ventures with contributions by Crosslink Capital, TenOneTen Ventures, Contour Venture Partners, Boom Capital Ventures, Yes VC, Susa Ventures, Draft Ventures, Anorak Ventures, S7 Ventures, Awesome People Ventures, Switch Ventures, Convective Capital, and Dorm Room Fund. This brings the total Treeswift has raised to $6.4 million in order to provide forest stakeholders with easily accessible precision data and analyses.

SwiftCruise by Treeswift is a drone-based solution that maneuvers beneath the forest canopy to rapidly gather detailed data within heavily forested areas, obtaining measurements of individual trees through a combination of cameras, sensors, and machine learning algorithms.

Treeswift provides stakeholders in natural resource management with software and data services that are utilized in carbon capture estimation, timber value appraisal, fire mitigation, biomass understory, deforestation monitoring, advanced growth forecasting, and overall forest management. https://dronelife.com/2022/04/04/drones-in-forestry-treeswift-raises-4-8-m/

Millennium works with Boeing to address smallsat demand Debra Werner — April 4, 2022

EL SEGUNDO, Calif. — Millennium Space Systems, a Boeing subsidiary best known for building small satellites for national security applications, is working with its corporate parent to gear up for rapid production of spacecraft for government and commercial constellations.

Millennium is setting up a small satellite factory within the 93,000-square-meter manufacturing plant where Boeing has produced 300 satellites. When Millennium's factory is up and running in the fourth quarter of this year, the company will be able to assemble, integrate and test

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constellations of tens, hundreds or even thousands of satellites, Millennium CEO Jason Kim said during a March 29 press briefing.

In its original plant a mile away, Millennium will continue to build prototypes. Once a prototype is completed and a satellite is designed for manufacturability, "we bring it into the smallsat factory where we can execute at scale," said Michelle Parker, Boeing's Space and Launch vice president and general manager.

Millennium, a 500-employee company founded in 2001, has built satellites for NASA, the National Reconnaissance Office, the Defense Advanced Research Projects Agency, the U.S. Air Force and the U.S. Space Force. https://spacenews.com/millennium-smallsat-factory/

DIU Awards Skydweller Contract to Develop Long-Endurance, Solar-Powered Drone

American-Spanish aerospace company Skydweller Aero announced that its United States subsidiary has been awarded a $14 million contract with the Defense Innovation Unit, in conjunction with the Navy, to advance and integrate technologies in support of the development of its extreme-endurance, solar-powered aircraft. The deal paves the way for the development of military-grade unmanned aerial systems that can operate on significantly extended missions, Skydweller Aero said Monday.

In a statement, the solar-powered drone maker said that the award will finance the development of technology that will increase the operational envelope of its commercial UAS. The effort's primary objective is the development and integration of key hardware and software that leverage clean technology to increase efficiency and performance, the company added. https://potomacofficersclub.com/diu-awards-skydweller-contract-to-develop-long-endurance-solar-powered-drone/

BVLOS Drone Receives FAA Special Class Airworthiness Criteria Mike Ball / 04 Apr 2022

Elsight has confirmed that the US Federal Aviation Administration has issued a special class airworthiness criterion for the Airobotics OPTIMUS1-EX UAS which integrates Elsight's Halo connectivity technology for BVLOS (beyond visual line of sight) operations.

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This pivotal milestone follows Airobotics' application to the FAA for a special class type certificate. According to Elsight, Airobotics is likely to be among the first in the world to receive the highly sought after full FAA TC (Type Certificate).

Elsight's partnership with Airobotics further validates the company's pursuit of the 'Design Win' strategy, with Halo embedded as a critical component in the OPTIMUS 1-EX UAS. Airobotics are focused on automated drone applications for a range of industrial applications and having BVLOS capability enables remote missions such as inspection, surveying & mapping, security & emergency response, stockpile management and haul road optimization. These services have multiple applications across several key industries such as oil and gas, mining, infrastructure and industrial facilities. https://www.unmannedsystemstechnology.com/2022/04/bvlos-drone-receives-faa-special-class-airworthiness-criteria/?utm_source=UST+eBrief&utm_campaign=861d0891cf-ust-ebrief_2022-apr-5&utm_medium=email&utm_term=0_6fc3c01e8d-861d0891cf-119747501&mc_cid=861d0891cf&mc_eid=0d642a9d48

Gray Eagle-Extended Range UAS Upgraded for Multi-Domain Operations April 4, 2022 Military | News

In February, General Atomics-Aeronautical Systems, Inc. began the first installation of factory upgrades to a Gray Eagle-Extended Range (GE-ER) Unmanned Aircraft System to enhance its capabilities to support Multi-Domain Operations (MDO). The U.S. Army-funded program includes two aircraft. Flight test and qualification will start later this year.

GA-ASI worked with the Army to demonstrate MDO capabilities at Yuma Proving Grounds which included internally mounted long-range sensors, ALEs, and laptop-based and handheld control interfaces. It incorporates open architecture aircraft and ground systems, advanced datalinks, and an upgraded propulsion system, significantly enhancing the ability to add new capabilities, provide resilience to electronic threats and expeditionary employment to austere locations.

The MDO upgrade follows a series of demonstrations that showcased GE-ER's persistent stand-off survivability with stand-in capabilities and up to 40 hours of endurance that commanders can leverage in the MDO environment. https://uasweekly.com/2022/04/04/gray-eagle-extended-

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range-uas-upgraded-for-multi-domain-operations/?utm_source=rss&utm_medium=rss&utm_campaign=gray-eagle-extended-range-uas-upgraded-for-multi-domain-operations&utm_term=2022-04-05

Vigilant Aerospace Wins NASA's Commercial Invention of the Year Award April 4, 2022 News

The winning technology was invented by NASA Senior Research Engineer Ricardo Arteaga working with a team at NASA Armstrong Flight Research Center in Edwards, California. The resulting patents were licensed to Vigilant Aerospace Systems, Inc. of Oklahoma City and Fargo, ND and form the basis for the company's FlightHorizon commercial products.

The invention provides a method for uncrewed aircraft systems (UAS) to automatically detect and avoid other air traffic. FlightHorizon is detect-and-avoid and airspace management software that fuses data from aircraft transponders, radar, drone autopilots and live FAA data to create a single picture of the airspace around a drone. The software displays air traffic, predicts trajectories, and provides avoidance maneuvers to the UAS pilot or autopilot. The system can be used on the ground or onboard the UAS and can be configured for any size of aircraft. It is designed to meet industry technical standards and to help UAS operators fly beyond visual line-of-sight (BVLOS) under waivers or new FAA BVLOS rules.
https://uasweekly.com/2022/04/04/nasa-armstrong-researcher-and-vigilant-aerospace-winnasas-commercial-invention-of-the-year-award/?utm_source=rss&utm_medium=rss&utm_campaign=nasa-armstrong-researcher-and-vigilant-aerospace-winnasas-commercial-invention-of-the-year-award&utm_term=2022-04-05

vHive raises $25M to enable commercial drones to digitize complex field assets with ease Ishveena Singh - Apr. 5th 2022

vHive's drone-agnostic solution enables readily available commercial, off-the-shelf drones to follow flight paths autonomously and inspect field assets, such as cell towers, with uncanny precision to build accurate digital twins.

vHive says it doesn't want users to become dependent on a

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single drone manufacturer. Its customers should be able to replace equipment easily and scale quickly without worrying about the availability of a specific drone model.

vHive is promising consistent, accurate data across enterprise assets, irrespective of the skill level of the individual pilot or the type of asset surveyed. Its drone software platform has been designed for telecommunications, construction, cranes, and insurance.

While planning a mission, the software asks for minimal information about your subject of interest. The data acquisition plan it then churns out consists of various image capture locations, altitudes, and angles – all while considering the specific drones to be used and their sensors. https://dronedj.com/2022/04/05/vhive-autonomous-drone-software/

6Apr22

Wing Drone Delivery in Texas Starts This Week Miriam McNabb April 05, 2022 Ian M. Crosby

Today, Alphabet subsidiary Wing has announced that it will be launching its drone delivery service in the Dallas-Fort Worth Metroplex this Thursday, April 7th. The service – the first of its kind in a major U.S. metropolitan area – will begin by focusing on the City of Frisco and the Town of Little Elm, where it will deliver to thousands of suburban homes.

Wing will be collaborating with Walgreens, with drones staged at a local store in preparation to transport health and wellness products directly to the homes of customers. This undertaking will be the most scalable drone delivery operation in the U.S. so far, seeing Walgreens team members process their own orders and load packages onto drones, with Wing remotely monitoring the delivery.

Wing has also formed additional new partnerships in the Dallas-Fort Worth area and will be carrying out deliveries of ice cream from Blue Bell Creameries, prescription pet medications from easyvet and first aid kits from Texas Health.

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On March 1st, Wing surpassed 200,000 all-time commercial drone deliveries, excluding test flights and test deliveries. After carrying out the first 100,000 deliveries over the course of two and a half years, Wing managed to complete the second 100,000 in a period of only six months. Additionally, the company's Australian market recently saw its busiest week ever, completing over 1,000 deliveries in the span of a single day, with a delivery every 25 seconds. https://dronelife.com/2022/04/05/wing-drone-delivery-in-texas-starts-this-week-walgreens-texas-health-easyvet-and-ice-cream/

Mars Helicopter Wins Collier Trophy Russ Niles April 5, 2022

The National Aeronautic Association has awarded the coveted Collier Trophy to NASA's Jet Propulsion Lab's Ingenuity Mars Helicopter team for "the first powered, controlled flight of an aircraft on another planet, thereby opening the skies of Mars and other worlds for future scientific discovery and exploration." The little drone with counter-rotating rotors has logged a total of 43 minutes of flight time in 24 flights on Mars since it was deployed by the Perseverance rover in 2021. Its first flight was on April 10, 2021, and after a few test flights it began acting as a science scout for the rover, checking out promising scientific targets and finding safe routes of travel. It's also taken plenty of high-res color photos.

"Almost no one thought a helicopter could be flown on Mars," said NAA President Greg Principato. "There were many who thought the project was not worth the effort. It is by overcoming such doubts that great achievements happen and that's what the Ingenuity Team did. https://www.avweb.com/aviation-news/mars-helicopter-wins-collier-trophy/?MailingID=875&utm_source=ActiveCampaign&utm_medium=email&utm_content=GAMI+Reports+FAA+Roadblocks+On+Unleaded+Fuel+Approval%2C+Daher+Introduces+TBM+960&utm_campaign=GAMI+Reports+FAA+Roadblocks+On+Unleaded+Fuel+Approval%2C+Daher+Introduces+TBM+960+-+Wednesday%2C+April+6%2C+2022+SNF

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Pipistrel and Lobo sign leasing partnership and order 15 Nuuva V300 hVTOL aircraft April 5, 2022 News

Pipistrel, the world leader in electric aviation and unmanned flight systems, and Lobo Leasing Limited, a global vertical lift leasing platform, signed a letter of intent with deposits for the acquisition of 15 Nuuva V300 autonomous cargo hVTOL aircraft. The agreement confirms Lobo Leasing and Pipistrel's commitment to the development of new vertical takeoff and landing, environmentally friendly, and sustainable air transportation solutions.

The NUUVA V300 is an optimal hVTOL UAV for middle mile logistics with a 3 cubic meter capacity, and under favorable flight conditions, the vehicle can carry 460kg up to 400km. It is designed to operate 10x more economically than today's helicopters, it requires no runways, and it brings enhanced safety and reliability using Pipistrel's already type-certified electric engines. This aircraft will leverage Pipistrel's solid foundation in the industry, including 15 years of electric aviation experience and 8 years of unmanned flight experience with 10+ UAV operators.

As part of the agreement, Lobo leasing and Pipistrel will collaborate to build and connect a base of operators and investors, and by using Lobo's existing global platform, deliver leasing solutions to deploy the aircraft in different types of missions globally.
https://uasweekly.com/2022/04/05/pipistrel-and-lobo-leasing-sign-partnership-and-place-order-for-15-nuuva-v300-hvtol-aircraft/?utm_source=rss&utm_medium=rss&utm_campaign=pipistrel-and-lobo-leasing-sign-partnership-and-place-order-for-15-nuuva-v300-hvtol-aircraft&utm_term=2022-04-06

7Apr22

Detect and Avoid Drone Safety System Wins NASA's Commercial Invention of the Year Miriam McNabb April 06, 2022 Ian M. Crosby

This week, NASA announced the technology licensed to Vigilant Aerospace and leveraged in its FlightHorizon detect-and-avoid and airspace management product has been recognized with NASA's Commercial Invention of the Year 2021 award.

The winning technology, invented by NASA Senior Research Engineer Ricardo Arteaga alongside a team at NASA Armstrong

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Flight Research Center in Edwards, California, provides uncrewed aircraft systems (UAS) with a means to automatically detect and avoid other air traffic. This capability is crucial for the growth of the UAS industry and the advancement of autonomous aviation. The patents following the technology's invention were licensed to Vigilant Aerospace Systems, Inc. of Oklahoma City and Fargo, ND and serve as the basis for its proprietary FlightHorizon product line.

FlightHorizon is a software solution, bringing together a range of data from aircraft transponders, radar, drone autopilots and live FAA data to form a singular image of the airspace surrounding a drone. Able to display air traffic, predict trajectories and provide avoidance maneuvers to the UAS pilot or autopilot, and configurable to any size of aircraft, the system can be utilized on the ground or onboard the UAS to help operators fly beyond visual line-of-sight (BVLOS) under waivers or new FAA BVLOS rules. https://dronelife.com/2022/04/06/vigilant-aerospace-detect-and-avoid-drone-safety-system-wins-nasas-commercial-invention-of-the-year/

Doosan Mobility Innovation secures $22m funding to grow hydrogen drone business George Heynes Apr 05, 2022

A new agreement unveiled today (April 5) will see IDG Capital, Korea Investment Partners, and DS Asset Management support Doosan Mobility Innovation (DMI) with the growth of its hydrogen business.

It is expected the funds will primarily will be invested in developing hydrogen fuel cell powered logistics cargo drones which have the potential to revolutionize the industry.

DMI plans to spend the funds on strengthening its product line-ups, enhancing global capabilities, attracting top talent, and developing the next generation water-cooled fuel cells crucial for larger and heavier mobility such as logistics drones.

DMI is also participating in a national project to develop the logistics and cargo drone with 10 to 50kg payload. The project aims to complete commercialization after 2025, which is the period when logistics drones are expected to be on full-scale. https://www.h2-view.com/story/doosan-mobility-innovation-secures-22m-funding-to-grow-hydrogen-drone-business/

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New Chinese small sat manufacturing capacity could have international ramifications Andrew Jones — April 6, 2022

Inside the CAST smallsat manufacturing factory in Tianjin, north China

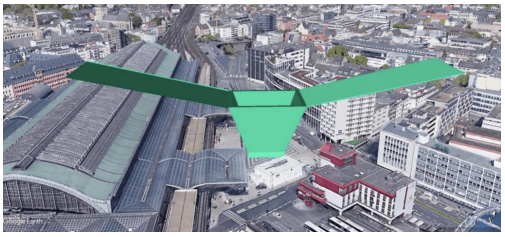
HELSINKI — Two new Chinese factories capable of producing hundreds of small satellites per year could help China achieve space objectives and impact the international market.

Production trials are now underway at a new facility belonging to the China Academy of Space Technology (CAST). The plant, situated within CAST's aerospace industrial base in Tianjin, north China, will be capable of producing more than 200 satellites per year according to the company.

This adds to capacity developed by the China Aerospace Science and Industry Corporation, a giant missile maker and defense contractor, which last year completed its own factory in Wuhan and will eventually be capable of manufacturing 240 small satellites each year.

The new capacity could be relevant for national plans to establish a low Earth orbit communications mega constellation named Guowang. Initial plans suggest China wants to build a 13,000-satellite constellation to rival Western projects including SpaceX's Starlink.
https://spacenews.com/new-chinese-small-sat-manufacturing-capacity-could-have-international-ramifications/

EASA Publishes Guidance for Vertiport Design Jessica Reed | April 6, 2022



The illustration depicts a potential vertiport design in a congested urban area based on standard parameters calculated from the area required for a VTOL to perform take-offs and landings.

The European Union Aviation Safety Agency (EASA) recently published the world's first vertiport design specifications. The document, titled "Prototype Technical Design Specifications for Vertiports," provides technical guidance and best practices regarding the necessary ground infrastructure for future urban air mobility operations in Europe.

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In developing these recommendations, EASA coordinated with leading vertiport companies and manufacturers of vertical take-off and landing aircraft. Two vertiport operators that were consulted are the Spanish multinational company Ferrovial and Skyports, provider of infrastructure solutions for UAM and cargo drone deliveries. EASA also consulted manufacturers including Airbus, ASD Group, Lilium, and Volocopter.

EASA's next objective is to "develop a full regulatory framework for vertiport design and certification, operations, and oversight of vertiport operators in the context of a rulemaking task. This RMT will create a foundation for the global vertiport market that considers the broad range of stakeholders that play a part in urban air mobility (UAM). A Notice of Proposed Amendment for the new regulatory framework will be published during the second half of 2023. https://www.aviationtoday.com/2022/04/06/easa-publishes-guidance-vertiport-design/

Second FAA BVLOS drone operations waiver for Iris Automation Ishveena Singh - Apr. 6th 2022

The FAA has granted Iris Automation a second waiver for Beyond Visual Line of Sight autonomous drone operations on behalf of the City of Reno. But while the previous waiver required the use of Iris Automation's advanced detect and avoid solution Casia X, this one utilizes the company's Casia G ground-based solution (*pictured above*). The City of Reno is a participant in the FAA's BEYOND program that seeks to advance more complex drone integration in the National Airspace System.

The fresh waiver allows an operator to fly without the need for visual observers or the Remote Pilot in Command to maintain visual contact with the drone. Casia G uses Iris Automation's patented detect and avoid technology to create a stationary perimeter of sanitized, monitored airspace, enabling drones to complete missions safely. The system also provides awareness of intruder-piloted aircraft to maneuver drones to safe zones.

Since Casia G does not require integration onto the aircraft, the payload stays preserved for sensors or packages. Its ground-based placement comes with the flexibility of establishing sanitized air space permanently. And by providing a sanitized "bubble" of airspace, it could even support an operator flying multiple drones in times to come.
https://dronedj.com/2022/04/06/iris-automation-bvlos-drone-waiver/#more-79060

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Percepto earns first BVLOS waiver in Europe for autonomous drone inspections

Ishveena Singh - Apr. 7th 2022

After achieving similar feats in the United States, Australia, and Israel, drone-in-a-box solutions provider Percepto has received its first Beyond Visual Line of Sight (BVLOS) waiver under the new European drone regulations. This comes from the Dutch civil aviation authority while Germany and Belgium are expected to follow suit.

The approval will enable Percepto's partner Falcker to conduct BVLOS drone flights with drone-in-a-box system AIM, which was named one of 100 Best Inventions of 2021 by *Time* magazine. The first industrial inspection missions that would leverage the waiver are planned for later this month at a tank terminal.

The new drone regulations by European Aviation Safety Association (EASA) came into effect in January 2022; they harmonize drone rules throughout the continent, while also providing a framework for companies to perform complex operations. Under these new rules, the approvals granted by one member state can be used in similar conditions throughout all EASA member states. This means Percepto can hope to gain BVLOS waivers throughout Europe soon.

Percepto's AIM comes with a software solution, too. Drones take off autonomously from a docking station and then fly routine inspection missions with imagery processed by Percepto AIM. Drones can also perform flights as needed in the event of disasters, such as a fire or security breach. At the end of each flight, the drone returns to the box to be charged for future deployment. https://dronedj.com/2022/04/07/percepto-bvlos-drone-waiver-europe/#more-79066

Doosan Mobility Innovation's 27B Won investment in the logistics drone market

April 7, 2022 News

Doosan Mobility Innovation (DMI) has announced on March 29th that it had secured approximately 27 billion won worth of investment from IDG Capital, Korea Investment Partners, and DS Asset Management in recognition of its growth potential in the hydrogen mobility business. The funds will be mainly invested in developing logistics cargo drones with hydrogen fuel cell technology.

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DMI has issued 260,383 shares of Redeemable Convertible Preferred Stock at 103,693 won per share. After the increase in capital, Doosan Corporation-the parent company's stake in DMI is expected to decrease from 100% to about 86.96%. In the end, DMI will be recognized for its market value of about 210 million assuming a 100% stake.

DMI plans to spend the acquired funds on strengthening its product line-ups, enhancing global capabilities, attracting top talent, and developing the next generation water-cooled fuel cells crucial for larger and heavier mobility such as logistics drone.
https://uasweekly.com/2022/04/07/doosan-mobility-innovation-takes-its-first-step-into-the-logistics-drone-market-by-attracting-27-bil-won-investment/?utm_source=rss&utm_medium=rss&utm_campaign=doosan-mobility-innovation-takes-its-first-step-into-the-logistics-drone-market-by-attracting-27-bil-won-investment&utm_term=2022-04-07

8Apr22

MEET GHOST BAT: BOEING'S AI-CONTROLLED COMBAT DRONE CHRISTOPHER PLAIN·MARCH 25, 2022

Boeing and the Royal Australian Air Force (RAAF) have officially announced the naming of their latest AI-controlled air combat drone, the MQ-28A Ghost Bat designed under the RAAF's "Loyal Wingman" program and built in Australia.

In the U.K., the Ministry of Defence is developing the Loyal Wingman program, an effort to team uncrewed aerial drones with piloted craft. A similar effort by the U.S. Air Force known as Skyborg launched an AI-controlled drone from a cargo plane in a successful test last year.

"The introduction of the new popular name is a rare and special moment in aviation history for our RAAF partners and industry team of over 35 Australian suppliers," said Boeing's Glen Ferguson, director of Airpower Teaming System Australia & International, in a statement.

"Selecting the Ghost Bat, an Australian native mammal known for teaming together in a pack to detect and hunt, reflects the unique characteristics of the aircraft's sensors and Intelligence, Surveillance and Reconnaissance abilities," said Ferguson, "and is a fitting name for this pioneering capability." https://thedebrief.org/meet-ghost-bat-boeings-ai-controlled-combat-drone/

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