UAS and SmallSat Weekly News

Contents

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7May22

Northrop Grumman Releases New Concept Art for Future UAS May 6, 2022 Military

Northrop Grumman has released new concept art of a future unmanned aerial vehicle (UAV), which shows a sleeker design to that previously shown in late 2021.

The artist's rendering, released to Janes on 5 May, shows an unmanned version of the Model 401 manned experimental prototype developed by Northrop Grumman subsidiary, Scaled Composites.

Although the latest concept art shares the same scale and overall dimensions of the manned Model 401 on which it is based, it differs from an earlier concept drawing of the unmanned Model 437 version released by Northrop Grumman in September 2021. This latest rendering reveals a sleeker and more aerodynamic design of the frontal fuselage and swept-back wings, suggesting that speed is to be prioritized as a performance characteristic of the new vehicle. https://uasweekly.com/2022/05/06/northrop-grumman-releases-new-concept-art-for-future-uas/?utm_source=rss&utm_medium=rss&utm_campaign=northrop-grumman-releases-new-concept-art-for-future-uas&utm_term=2022-05-06

Purdue Athletics Collaborates to Pilot First F&B Drone Delivery Service May 6, 2022 News

Purdue Athletics has collaborated with hospitality partner Levy, Levy's innovation studio, DBK Studio, Chicago-based Valqari, and USOG to pilot the first drone-delivered food and beverage service at a sports & entertainment venue. The pilot took place from Wednesday, April 27th through Saturday, April 30th at Alexander Field, home of Purdue Baseball, leading up to and during its recent home series.

The pilot involved a select fan base ordering food and beverage, with orders prepared at another on-campus athletic venue, delivered by drone, and placed in a pick-up locker for guests in an open-air space at Alexander Field. The pilot tested the user experience, food quality and

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delivery accuracy. Throughout the pilot, drones delivered orders of hot dogs, bottles of water, and chips to prepare and pressure-test the delivery experience for higher fan volume at future events.

Valqari worked with its drone partner, USOG, to create the fully autonomous drone delivery service, mapping out facilities, flight paths, menus, and pick-up with Levy's on-site hospitality team. https://uasweekly.com/2022/05/06/purdue-athletics-collaborates-with-levys-dbk-studio-valqari-and-usog-to-pilot-first-fb-drone-delivery-service/?utm_source=rss&utm_medium=rss&utm_campaign=purdue-athletics-collaborates-with-levys-dbk-studio-valqari-and-usog-to-pilot-first-fb-drone-delivery-service&utm_term=2022-05-06

Vertical Aerospace to obtain concurrent UK and EU certification Bruce Crumley - May. 6th 2022

London-based electric takeoff and landing (eVTOL) aircraft developer Vertical Aerospace has negotiated an arrangement with UK and European Union civil aviation authorities to pursue concurrent vehicle validation of its VX4 air taxis.

The company made the announcement amid what it called a series of advances in the long certification process, including recruitment of the former European Union Aviation Safety (EASA) Agency's certification director, Trevor Woods. He will now play a central role in Vertical structuring the standards it adopts to obtain craft validation of its eVTOL air taxis in a way that will satisfy both the UK Civil Aviation Authority's (CAA) and EASA.

What that means, Vertical says, is its certification and validation process will be pursued simultaneously in both regulatory jurisdictions. It's expected the concurrent approach will facilitate the company's plans to begin operating the VX4 eVTOL in air taxi service in both the UK and Europe starting 2025. Brexit made two entirely separate administrative, legal, and regulatory spheres.

The dual UK-EU certification objective represents a widening of a logic that initially voiced last March. That came in an announcement by the CAA and Federal Aviation Administration that they would work together in the goal of supporting nearing services of eVTOL air taxis and other next generation air craft, including coordination of vehicle certification criteria and procedures.

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That news has lifted hopes of companies developing electric aircraft through their operations both the US and UK – including Vertical and Joby – that vehicle approval in one nation will speed, or even coincide with certification in the other. https://dronedj.com/2022/05/06/vertical-aerospace-to-obtain-concurrent-uk-and-eu-certification/#more-80477

DJI in Russia and Ukraine: Company Suspends Business as Military Use of Drones Continues

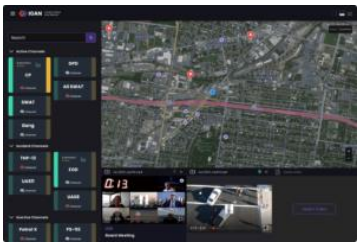
Miriam McNabb April 28, 2022 By Jim Magill

In response to criticism that its drones are being used in the war between Russia and Ukraine, DJI, the world's largest drone manufacturer, said it would temporarily suspend all its business in both countries.

The decision comes after weeks of pressure on the China-based company to cease supplying drones to Russia. It is widely believed that both sides in the war have used DJI products in support of their ongoing battle with one another. DJI has maintained that its drones are designed for civilian use and are not appropriate to be used as weapons.

Earlier this month, DJI had released a statement reiterating its policy against the use of its products in warfare. "We absolutely deplore any use of our products to cause harm. DJI has only ever made products for civilian use; they are not designed for military applications. https://dronelife.com/2022/04/28/dji-in-russia-and-ukraine-company-suspends-business-as-military-use-of-commercial-off-the-shelf-drones-continues/

Police in North Texas Use Drones to Save Lives: Deploying Drone Clear Miriam McNabb April 28, 2022 by Jim Magill



The Dallas Police Department Unmanned Aircraft Systems unit was the first to deploy the Drone Clear program, which utilizes technology developed by video and audio software developer Cytta Corp. Under the program, a single UAS or multiple drones can be flown into a building in which there is a perceived threat, such as an armed suspect.

The drones act as sentries, sending video data to multiple actors, including remotely located incident commanders as well as officers on the scene. The data helps responders map out the

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structure, identifying potential threats before the decision is made to send officers into the building.

The Drone Clear protocol was developed using Cytta's propriety Incident Global Area Network technology, which allows real-time video streaming to be shared by multiple parties, who can also use the platform to communicate with one another.
https://dronelife.com/2022/04/28/police-in-north-texas-us-drones-to-save-lives-deploying-drone-clear/

8May22

NIST Launches Prize Challenge to Improve Unmanned Aircraft in Indoor Search and Rescue April 27, 2022

BOULDER, Colo. — The U.S. Department of Commerce's National Institute of Standards and Technology (NIST) is launching a new prize competition series to advance the use of unmanned aircraft systems (UAS) by first responders for indoor search and rescue operations.

In the First Responder UAS Indoor Challenge, competitors will design, build, and fly a cost-effective, easily flyable drone to help search and rescue teams gain better situational awareness prior to entering a building. Competitors will tackle difficulties in operating UAS indoors where GPS is unavailable, lighting is limited, or structural integrity is compromised. The competition will be accepting entries beginning April 27, 2022, with multiple stages running through June 2023.

Up to $685,000 will be awarded in prizes throughout three stages of the challenge. Prize recipients will be determined by a panel of judges, assisted by a team of subject matter experts, through each stage of the competition. The First Responder UAS Indoor Challenge is hosted by NIST and managed by Capital Consulting Corporation, in partnership with Kansas State University. https://www.nist.gov/news-events/news/2022/04/nist-launches-prize-challenge-improve-unmanned-aircraft-indoor-search-and

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9May22

Drone Tournament 2022: Compete to Solve Critical Drone Industry Obstacles

Miriam McNabb May 06, 2022 by DRONELIFE Staff Writer Ian M. Crosby

Drone Tournament 2022 at Helsinki, June 8-10

This year's Drone Tournament in Helsinki, Finland, is attempting to address obstacles facing the utilization of drones. The tournament will feature three challenges, each relating to equipment landing and precision flight in a range of transforming environments. Participants will have access to an extensive assortment of navigation and sensor technology to work with.

Ultrahack will be in charge of carrying out the challenges alongside Robots Expert. Each of the challenges will be sponsored by tournament partners Septentrio, U-Blox and Telia. The three companies will provide 5G technology for the purpose of providing navigation and transferring video footage to operators, as the flight missions are to be carried out without a direct line of sight to the drone. Stara will be sponsoring the Last-Mile Logistics Challenge, which involves a simulated rapid delivery to a boat on the water, via the use of Stara's proprietary system and subcontracting chain.

Awards for the tournament's winners include monetary prizes and the possibility of negotiating commercial agreements for further development of the solutions, while all event participants will receive satellite technology from U-blox and Septentrio.
https://dronelife.com/2022/05/06/drone-tournament-2022-compete-to-solve-critical-drone-industry-obstacles/

US Army selects BlueHalo's Titan portable counter drone systems in $4m order

May 5, 2022Jenny Beechener Counter-UAS systems and policies

The award is in support of an elite unit within the conventional US Army and will be used to defeat enemy drones on the battlefield abroad and at secure locations in the US, providing fixed-site and mobile force protection.

Titan is a portable, deployable system that creates a secure

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perimeter, provides automated identification, and mitigates threats for major commercial and hobbyist control protocols and frequency bands. Utilizing Artificial Intelligence and Machine Learning, Titan can detect and respond using adaptive, escalating countermeasures that minimize collateral impact to nearby communications. This AI foundation assists Titan in matching or outpacing evolving threats and provides layered C-UAS defense. The system can be mission-capable in under two minutes, requires no signals expertise or extensive training, and represents low operator cognitive load. Additionally, Titan's detection and escalating defeat technology can manage multi-drone or swarm scenarios.
https://www.unmannedairspace.info/counter-uas-systems-and-policies/us-army-selects-bluehalos-titan-portable-counter-drone-systems-in-usd4m-order/

Airbus-led team launches Air Mobility Initiative: aircraft, UTM and vertiport components May 5, 2022 Philip Butterworth-Hayes UAS traffic management news

Airbus is leading a new program, the Air Mobility Initiative, to bring Urban Air Mobility to Bavaria as a blueprint for inter-city transportation in the future. The members of the Air Mobility Initiative include Airbus, City of Ingolstadt, Deutsche Bahn, Deutsche Flugsicherung, Diehl Aerospace, Droniq, Munich Airport, Red Cross and Telekom.

The program has three work streams to deliver a common solution.

- Vehicle stream: led by Airbus with participation from Diehl Aerospace, University of Stuttgart and others
- UTM stream: members include Droniq, Airbus, f.u.n.k.e. Avionics, SkyFive, BrigkAir, DFS, Telekom, Universities from Munich and Hamburg
- Vertiport stream: responsibilities for this topic are supported by Munich Airport, Deutsche Bahn, Bauhaus Luftfahrt, Airport Nürnberg, Universities of Ingolstadt and Munich.

The first vertiports would be developed for Munich Airport and the City of Ingolstadt.
https://www.unmannedairspace.info/uncategorized/airbus-led-team-launches-air-mobility-initiative-aircraft-utm-and-vertiport-components/

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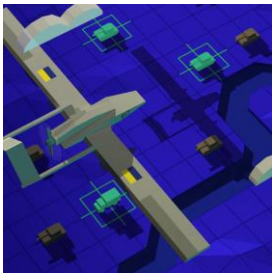
SwissDrones granted European Drone Operator License by Malta Civil Aviation Directorate May 9, 2022 Philip Butterworth-Hayes UAS traffic management news

SwissDrones, the global manufacturer of long-range unmanned helicopter systems, has announced it has obtained its European drone operator license – the EASA Light UAS Operator Certificate, granted by the Transport Malta Civil Aviation Directorate, the country's Civil Aviation Authority.

The company says this certificate allows SwissDrones to "self-authorize flight operations of its SDO50 V2 unmanned helicopters across EASA countries, including beyond visual line of sight operations within the limits of the certificate" and adds "this is the highest authorization achievable under European drone regulations".

"This is the first LUC issued by Transport Malta, and the sixth issued in Europe. SwissDrones plans to perform ongoing BVLOS flight testing campaigns in Malta, given the ideal geographical environment with ample airspace for long-range testing in real-life conditions, including coastal areas and over the ocean. Additionally, the nation is a growing hub for unmanned aviation with a dedicated support infrastructure and a clear governmental commitment to advance this high-growth industry". https://www.unmannedairspace.info/latest-news-and-information/swissdrones-granted-european-drone-operator-license-luc-by-the-malta-civil-aviation-directorate/

The Turkish Drone That Changed the Nature of Warfare Stephen Witt May 9, 2022 May 16, 2022 Issue



The Bayraktar TB2 is a flat, gray unmanned aerial vehicle with angled wings and a rear propeller. It carries laser-guided bombs and is small enough to be carried in a flatbed truck and costs a fraction of similar American and Israeli drones. Its designer, Selçuk Bayraktar, the son of a Turkish auto-parts entrepreneur, is one of the world's leading weapons manufacturers. In the defense of Ukraine, Bayraktar has become a legend, the namesake of a baby lemur at the Kyiv zoo, and the subject of a catchy folk song, which claims that his drone "makes ghosts out of Russian bandits."

In April, 2016, the TB2 scored its first confirmed kill. Since then, it has been sold to at least thirteen countries, bringing the tactic of the precision air strike to the developing world and reversing the course of several wars. In 2020, in the conflict between Azerbaijan and Armenia,

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Azerbaijan's dictatorial leader, Ilham Aliyev, used the TB2 to target vehicles and troops, then displayed footage of the strikes on digital billboards in the capital city of Baku.

The TB2 has now carried out more than eight hundred strikes, in conflicts from North Africa to the Caucasus. The bombs it carries can adjust their trajectories in midair, and are so accurate that they can be delivered into an infantry trench.
https://www.newyorker.com/magazine/2022/05/16/the-turkish-drone-that-changed-the-nature-of-warfare?utm_source=nl&utm_brand=tny&utm_mailing=TNY_Daily_Control_CMUnit_050922&utm_campaign=aud-dev&utm_medium=email&utm_term=tny_daily_digest&bxid=5bd67a0b24c17c10480274c0&cndid=42240258&hasha=f3d322e93016f7ce6835ec0bc3368a5c&hashb=1ff13b82b5a836bf642b1389c36b9e7d53079ff6&hashc=f534297b8d462b5af1ee68589c2f66c61c4db6ece1219023ed7c4a103712ec34&esrc=AUTO_PRINT&mbid=CRMNYR012019

UK sending Ukraine heavy-lift cargo drones in struggle against Russian invasion

Bruce Crumley - May. 9th 2022

In addition to the large influx of both military-grade and consumer UAVs from abroad to Ukraine forces battling Russian troops, Kiev will soon take delivery of specialized UK heavy-lift cargo drones that have been tested by the British Navy in various scenarios.

Those drones are part of a range of supplies to Ukraine forces and emergency workers worth over $370 million that UK Prime Minister Boris Johnson pledged earlier this month. Promised tech within that includes "electronic warfare equipment, a counter battery radar system, GPS jamming equipment, heavy-lift supply drones, and thousands of night vision devices," Johnson said. The freight drones are T150 quadcopters made by London-based Malloy Aeronautics.

Though exact details have not been released by UK authorities, reports say dozens of the drones will soon be headed to Ukraine, primarily for getting supplies to forces in the field. They'll also be flown for medical deliveries to emergency services caring for people injured by Russian rocket strikes. https://dronedj.com/2022/05/09/uk-sending-ukraine-heavy-lift-cargo-drones-in-struggle-against-russian-invasion/

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XAG promotes drones in Vietnam to boost rice farming while cutting fertilizer use May 9, 2022 News

Faced with the soaring prices of agricultural inputs, Vietnamese farmers can now employ drones from XAG to grow more rice using fewer resources. From direct seeding, pesticide spraying to fertilizer application, XAG's agricultural drones have seen its increasing popularity among rural youth who are keen to earn a decent salary as drone pilot.

Vietnam is the world's second largest exporter of rice, which is also the staple food consumed by 90% of the total population and the main source of income for millions of small-scale farmers. Drones designed for agricultural use can reduce seeds, pesticides, and fertilizers without affecting crop yields through precise, effortless operation. Agricultural drones can spray crops 4 times faster than manual labor while improving yield by 14%.

During the operation, the young pilot controlled the drone with a smartphone and preset parameters including flight speed, height, lime volume and spreading width to fulfill automation. As the XAG drone carried a 25-liter container and the spreading system RevoCast, the lime powder was spread evenly and accurately on the 1.5-hectare rice paddy. The strong wind force of the drone helped lime in contact with the rice plant from top to bottom, saving 30% lime powder and enabling better absorption by the crops.
https://uasweekly.com/2022/05/09/xag-promotes-drones-in-vietnam-to-boost-rice-farming-while-cutting-fertilizer-use/?utm_source=rss&utm_medium=rss&utm_campaign=xag-promotes-drones-in-vietnam-to-boost-rice-farming-while-cutting-fertilizer-use&utm_term=2022-05-09

10May22

Strix Drones: Drone Agnostic Docking Stations for Advanced Operations Miriam McNabb May 06, 2022 by DRONELIFE Feature Writer Jim Magill

Israeli company Strix Drones plans to begin manufacturing drone agnostic docking stations at its new plant in Dayton, Ohio by the end of this year.

The company had a ribbon-cutting ceremony at the plant, its first U.S.-based manufacturing facility, last month. The factory

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will produce two sizes of docking stations, which can be used to accommodate most commercial drones, as well as a delivery box that can securely handle drone-delivered packages.The company plans to build the machines that will allow it to fabricate the component parts of its stations on its own, within the next year. The Ohio plant will be the site for production of the Strix 1600 docking station

In addition, the plant will manufacture delivery boxes that can work in concert with the docking station to accept and store packaged deliveries from almost any model of commercial drone. The three products are built to accommodate 80% to 90% of the commercial drones currently on the market. https://dronelife.com/2022/05/06/strix-drones-drone-agnostic-docking-stations-for-advanced-operations/

Virginia Natural Gas First in State to Deploy Pipeline Inspection with Drones [VIDEO] Miriam McNabb May 09, 2022 by DRONELIFE Staff Writer Ian M. Crosby

Virginia Natural Gas (VNG) is set to become the first natural gas utility in the state to deploy Unmanned Aerial Vehicles for the inspection of gas pipelines. Self-dispatched Mavic 2 Pro drones will fly across Hampton Roads, northern James and New Kent Counties for the inspection of critical infrastructure and over 5,500 miles of gas pipeline. VNG will also initiate a pilot program for its sister companies in Illinois, Georgia, and Tennessee that all fall under VNG's parent company, Southern Company Gas (SCG). This new project builds on a program established in 2015 by SCG parent Southern Company.

Previous methods of pipeline inspection have been less efficient, and at times caused safety concerns due to the surrounding environment. Despite running underground, natural gas pipelines are accessed from above the surface for maintenance and inspection. Obstacles such as vegetation can often make the pipeline difficult to access for workers. https://dronelife.com/2022/05/09/virginia-natural-gas-first-in-state-to-deploy-pipeline-inspection-with-drones/

SKYTRAC SATCOM Terminal Selected for High-Altitude UAV Phoebe Grinter 09 May 2022

Kea Aerospace has selected SKYTRAC's Iridium Certus Satellite Communications terminal to be installed onboard its High Altitude Long Endurance Unmanned Aerial Vehicle Kea Atmos.

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It is a solar-powered, remotely piloted fixed-wing aircraft designed for continuous flight in the stratosphere to collect high resolution aerial images. After takeoff, Kea Atmos ascends to 65,000 ft where it will operate for several months at a time. The UAV will carry payloads that will acquire data for Kea Aerospace's customers.

To remotely pilot their aircraft in the stratosphere, Kea Aerospace has selected SKYTRAC's UAV Data Link System (DLS-100) to enable Beyond Visual Line of Sight Command and Control capability. By utilizing the Iridium satellite network, the DLS-100 will provide Kea Atmos global SATCOM connectivity with 99.9% uptime reliability regardless of weather conditions or the aircraft's distance from the Ground Control Station (GCS). https://www.unmannedsystemstechnology.com/2022/05/skytrac-satcom-terminal-selected-for-high-altitude-uav/?utm_source=UST+eBrief&utm_campaign=ed84361f7d-ust-ebrief_2022-may-10&utm_medium=email&utm_term=0_6fc3c01e8d-ed84361f7d-119747501&mc_cid=ed84361f7d&mc_eid=0d642a9d48

Inmarsat Expands Velaris Partner Network to Support BVLOS Drone Operations

Phoebe Grinter / 06 May 2022

Inmarsat has expanded the Partner Network for its Velaris Unmanned Aerial Vehicle connectivity solution with the addition of software company Dimetor, which facilitates Beyond Visual Line Of Sight operations in cellular networks, and Bellwether Industries, an Urban Air Mobility solutions provider for intra-city travel.

The Partner Network was established in late 2021 to encourage innovative collaborations using Inmarsat's Velaris connectivity solution, which allows commercial UAVs to operate long distance flights and access various applications, such as real-time monitoring, to ensure safe integration with aircraft in commercial airspace. In addition, it allows a single pilot to remotely operate multiple UAVs, making operations more commercially viable.

As the latest additions to the Velaris Partner Network, Dimetor and Bellwether Industries have joined existing members Altitude Angel, an Uncrewed Traffic Management technology provider, and Harvest Technology Group, a specialist in ultra-low bandwidth livestreaming technology. https://www.unmannedsystemstechnology.com/2022/05/inmarsat-expands-velaris-partner-network-to-support-bvlos-drone-

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operations/?utm_source=UST+eBrief&utm_campaign=ed84361f7d-ust-ebrief_2022-may-10&utm_medium=email&utm_term=0_6fc3c01e8d-ed84361f7d-119747501&mc_cid=ed84361f7d&mc_eid=0d642a9d48

2Excel Aviation and Israel Aerospace Industries Demonstrated IAI's Maritime Heron in UK May 9, 2022 News

Israel Aerospace Industries and 2Excel Aviation successfully completed a demonstration of IAI's Maritime Heron UAS in a series of live, Beyond Visual Line of Sight maritime search and ISR scenarios. The demonstration was based out of West Wales Airport in Aberporth. Attending the demonstration were in-person and virtual observers from the UK Ministry of Defence, Government and the Civil sector. Following the demonstration, IAI and 2Excel received positive feedback from the UK Civil Aviation Authority.

The Heron UAS was ready to fly within 36 hours of arriving at West Wales and maintained full serviceability throughout the period of the deployment. It achieved 100% of its planned scenarios, despite the challenging seasonal weather conditions. The system demonstrated that it is capable in missions including search and rescue, border protection, fisheries patrol, safety at sea, small boat detection and surveillance.

In-person attendees were able to make requests of the system, which were relayed live to the Ground Control Station (GCS) during the presentation. Rule-based scenarios were also demonstrated via IAI's Starlight data exploitation tool which received inputs from the Heron UAS' multi-mission radar, EO/IR sensor and AIS. Points of interest were then generated using Starlight's Artificial Intelligence and data processing engine to produce Actionable Intelligence, Insights and Maritime Awareness. Data gathered was simultaneously broadcast to in-person and virtual attendees using IAI's data dissemination tool (Commander's Remote Imagery Situation Picture – CRISP). https://uasweekly.com/2022/05/09/2excel-aviation-and-israel-aerospace-industries-demonstrated-iais-maritime-heron-uas-to-uk-government-and-civil-observers/?utm_source=rss&utm_medium=rss&utm_campaign=2excel-aviation-and-israel-aerospace-industries-demonstrated-iais-maritime-heron-uas-to-uk-government-and-civil-observers&utm_term=2022-05-10

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11May22

U.S. FAA shifts gears on certifying future 'flying taxi' pilots May 10, 2022 David Shepardson

WASHINGTON, May 10 (Reuters) - The Federal Aviation Administration (FAA) said Tuesday it had shifted course on its approach to approving pilots of future electric vertical takeoff and landing aircraft (eVTOL) but does not expect it would delay certification or operational approvals.

The eVTOL aircraft have been touted as air taxis that could be the future of urban air mobility. The low-altitude urban air mobility aircraft have drawn a huge amount of interest around the world as numerous eVTOL companies have gone public.

The FAA said in a statement it would pursue "a predictable framework that will better accommodate the need to train and certify the pilots who will operate these novel aircraft. "The flexibility, the FAA added, "will eliminate the need for special conditions and exemptions.

The FAA said it was modifying its regulatory approach because regulations designed for traditional airplanes and helicopters "did not anticipate the need to train pilots to operate powered-lift, which take off in helicopter mode, transition into airplane mode for flying, and then transition back to helicopter mode for landing."
https://www.reuters.com/business/aerospace-defense/us-faa-shifts-gears-certifying-future-flying-taxi-pilots-2022-05-10/

Joby: NASA Test Flights Prove eVTOL's Low Noise Levels Charles Alcock May 10, 2022

Results from recent NASA-backed flight tests with Joby's eVTOL prototype demonstrate that noise from the four-passenger air taxi vehicle would be barely audible from city streets below. On

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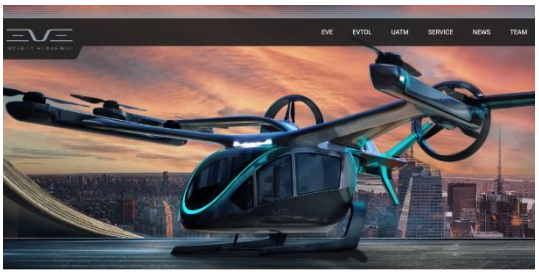
May 10, Joby published findings from a two-week trial as part of NASA's Advanced Air Mobility National Campaign.

During the flights, the Joby aircraft registered the equivalent of 45.2 dBA while cruising at an altitude of 1,640 feet at a speed of 115 mph. Recordings made by NASA engineers also demonstrated an acoustic profile for the aircraft while taking off and landing that was below 65 dBA, which Joby said represented a noise level comparable to a normal conversation at 330 feet from the flight path. The measurements were conducted using NASA's Mobile Acoustics Facility, which has more than 50 pressure ground-plate microphones. These were positioned in a grid array at the facility Joby calls its Electric Flight Base near Big Sur, California.

Joby is working to certify the all-electric aircraft, which has expected range of 150 miles and speeds of up to 200 mph, in time to start commercial air taxi operations in 2024.
https://www.ainonline.com/aviation-news/business-aviation/2022-05-10/joby-nasa-test-flights-prove-evtols-low-noise-levels

Embraer's UAM unit, Eve Mobility, begins trading on Wall Street Bruce Crumley - May. 11th 2022



Embraer's urban air mobility (UAM) operation, Eve, has joined a growing number of next-generation aircraft companies going public using a relatively recent kind of stock market floatation procedure.

Shares of Eve began trading yesterday following an issue on the New York Stock Exchange that raised a total of $377 million. The introduction was made possible by Eve's merger with Zanite, a special purpose acquisition company (SPAC) created specifically to enable an expedited process of going public. Other UAM sector firms that have gone the same route include Lilium, Joby, Archer, and Vertical.

With the SPAC created as the vehicle through which shares are issued, all that's required is approval by the startup's relatively small pool of backers, after which tech-enamored funds and individual speculators can either take a stake in it, or pass. In some cases that involves backing a firm with futuristic vehicles or gadgets already nearing production, while others represent a bet on a promising sounding idea still taking shape.

Eve's case is somewhere in between those. The electric takeoff and landing planes it plans to fly have not yet been created as prototypes. But their development isn't in doubt either, given

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aircraft giant Embraer's support of and enthusiasm with next-generation travel. Yesterday's floatation represented both companies moving to let other believers get in on that future.
https://dronedj.com/2022/05/11/embraers-uam-unit-eve-mobility-begins-trading-on-wall-street/

Wingcoper 198 delivery drone passes FAA Special Class Airworthiness milestone

Bruce Crumley - May. 11th 2022

The Weiterstadt-based company revealed the development Wednesday, hailing it as critical to its efforts to obtain type certification of its flagship Wingcopter 198 delivery drone. Though the road to full FAA approval is still long, passing the hurdle of airworthiness recognition is considered by many aeronautic companies to be a major milestone in the process.

The FAA's Airworthiness Criteria defines technological requirements that must be met to have an aircraft type certified for regular commercial operations in the U.S. Application of the Wingcopter 198 was submitted in March 2020, after which time the company worked closely with the FAA toward both obtaining the airworthiness status, and mapping out the means and timing through which it may attain type certification.

If it obtains full type certification, the Wingcopter 198 can operate commercial drone deliveries and other suitable missions in US airspace above populated zones. Wingcopter says it has operated its 198 delivery drones under stricter pre-certification rules in missions spanning the Arctics and Middle East and from remote islands in the South Pacific to San Diego Bay. The craft can carry a maximum 6 kg payload up to 100 km at a default cruise speed of 100 km/h.
https://dronedj.com/2022/05/11/wingcoper-198-delivery-drone-passes-faa-special-class-airworthiness-milestone/

12May22

American Robotics and Railway Inspection: Automated Drones and Advanced Analytics Miriam McNabb May 11, 2022 Jim Magill

The CEO of American Robotics said a recent acquisition by its parent company, Ondas Holdings, will allow the developer of industrial drone solutions to add artificial-intelligence and machine-learning components to its existing drone-related software to offer track

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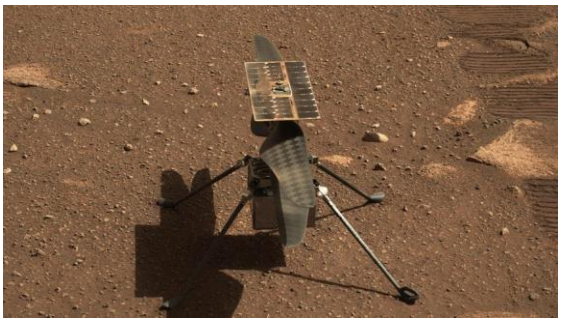
inspections to the railway industry.

Last month, Ondas Holdings announced it had completed the acquisition of Ardenna, a provider of image processing and machine-learning software used for rail infrastructure monitoring and inspections. The merger will enable American Robotics to leverage its automated drone platform with Ardenna's Rail-Inspector advanced analytics software. Ondas Networks currently serves several rail industry companies, including two of the largest, BNSF and CSX.

BNSF Railway maintains its our own inhouse UAS program, which started in 2015. The railroad company currently has around 230 certified pilots with 250 active units in its program, which uses a wide range of drones for both visual and beyond line of sight.
https://dronelife.com/2022/05/11/american-robotics-and-railway-inspection-leveraging-their-automated-drone-platform-and-advanced-analytics-software/

NASA Mars Helicopter Back in Touch with Rover Buddy After Going Silent Amanda Kooser May 11, 2022



The remarkable flying machine has exceeded expectations and flown 28 times since arriving with the rover in early 2021. It communicates with Earth by using Perseverance as a relay.

Ingenuity experienced a communications dropout with the rover on May 3, but reestablished contact on May 5. In a statement on Friday, NASA JPL said the helicopter entered a low-power state, likely triggered by a seasonal increase in dust combined with lower temperatures from the oncoming Martian winter.

Ingenuity relies on its solar-charged batteries to function, communicate and make it through the brutally cold nights. It seems the helicopter missed its scheduled rover communications session when a key component called the field-programmable gate array lost power during the night. The rotorcraft's clock reset. "Essentially, when Ingenuity thought it was time to contact Perseverance, the rover's base station wasn't listening," NASA said.

As any concerned rover would do, Perseverance began to listen for Ingenuity (thanks to commands from Earth) over a longer stretch of time and finally reestablished contact. The helicopter reported in as healthy. https://www.cnet.com/science/space/nasa-mars-helicopter-back-in-touch-with-rover-buddy-after-going-silent/

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China launches eight more Earth-imaging microsats May 10, 2022 Stephen Clark

China launched eight more microsatellites for the Jilin 1 high-resolution Earth observation constellation May 4, five days after a separate mission deployed five similar Jilin 1 payloads into orbit.

The launches signal an uptick in the pace of satellite deployments for the Jilin 1 constellation, a fleet of small remote sensing satellites developed by Chang Guang Satellite Technology Co. Ltd., a commercial remote sensing company based in China's Jilin province.

The Jilin 1 fleet is aimed at serving commercial users of Earth imaging data, including urban planners and infrastructure developers and the mining, agriculture, forestry, and maritime industries.

Eight satellites for Chang Guang launched May 4 at 10:38 p.m. EDT aboard a Long March 2D rocket, according to the China Aerospace Science and Technology Corp., the largest state-owned enterprise overseeing China's space industry.

The payloads included the Jilin 1 Kuanfu 01C optical wide-area imaging spacecraft, plus seven Jilin 1 Gaofen 03D-class high-resolution optical observation satellites. More than 50 Earth-imaging satellites, typically about the size of a microwave oven or a mini-refrigerator, have launched in the Jilin 1 constellation since 2015. Sixteen Jilin 1 satellites have launched this year.
https://spaceflightnow.com/2022/05/10/china-launches-eight-more-earth-imaging-microsats/

A small satellite built by the Space Dynamics Laboratory exceeds expectations

Lisa Jennings 2022-05-11

Utah State University's Space Dynamics Laboratory created and managed a small satellite to provide NASA with climatic data that completed its mission and performed for more than 22 months longer than expected. The Hyper-Angular Rainbow Polarimeter payload was created by the University of Maryland, Baltimore County, under the guidance of Principal Investigator J. Vanderlei Martins, and SDL built the HARP CubeSat to carry it.

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The HARP CubeSat was launched into low Earth orbit from the International Space Station on February 19, 2020, for a NASA mission of 90 days. After two years of operations, the spacecraft was just deorbited, delivering data on the microphysical characteristics of cloud water and ice particles.

HARP represents the first attempt to fly a polarimeter on a CubeSat. CubeSats and other small satellites' size limits the volume and mass of science payloads that can be deployed on them. Although the HARP spacecraft measures only 10 centimeters wide, 10 centimeters high, and 30 centimeters long—about the size of a loaf of bread—with a mass of 6 kilograms. Measurements from HARP help scientists better understand how aerosol particles affect weather, climate, and air quality.

In August 2020, HARP was named the Small Satellite Mission of the Year by the American Institute of Aeronautics and Astronautics, which presents the award to the mission that has demonstrated significant improvement in small satellite capability.
https://www.bollyinside.com/news/a-small-satellite-built-by-the-space-dynamics-laboratory-exceeds-expectations

JERSEY MIKE'S KICKS OFF DRONE DELIVERY TO RESIDENTS OF ONE LUCKY AMERICAN CITY May 11, 2022 Sally French

The New Jersey-based sandwich chain announced today that it would be launching drone deliveries, shipping sandwiches to select residents of Holly Springs, North Carolina. The drone deliveries are being conducted by Flytrex and Causey Aviation Unmanned, which is one of the major players in food deliveries via drone.

Here's how it'll work:

1. Eligible residents must place a Jersey Mike's order through the Flytrex app (you must live in the one nautical mile-radius within Holly Springs).
2. Once the order goes through, customers can use the app to track their order status.
3. The drone will arrive to front or backyards, depending on the home, and then lower the package via a wire.

For now, the flights are only being held in Holly Springs, North

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Carolina, given the operators hold a Federal Aviation Administration waiver to conduct delivers across a radius of one nautical mile. Flytrex has been operating in North Carolina for more than a couple years at this point, under a partnership with the North Carolina Department of Transportation, which is a part of the FAA's BEYOND program.
https://www.thedronegirl.com/2022/05/12/jersey-mikes-drone-delivery/

Watch a swarm of drones navigate a forest without crashing TECHNOLOGY 4 May 2022 Chris Stokel-Walker

A new navigation system enables a swarm of 10 lightweight drones to fly together without crashing into one another or obstacles, even in challenging places such as forests.

Xin Zhou at Zhejiang University in China and his colleagues have developed a new method that reduces the size and hardware requirements of a drone. The palm-sized, 300-gram drone uses off-the-shelf computer components powered by a 100-gram battery that can keep it aloft for up to 11 minutes. The drone has a camera that feeds real-time footage to its processing unit. A localization algorithm creates a 3D image of the scene and regularly sets the drone targets to reach within that scene. It looks out for obstacles – and other drones – and readjusts the flight pattern in real time. It then plans the most computationally efficient route through the area.

The algorithm doesn't require GPS signals to locate itself, meaning it can be used in a broader range of places where such signals are low. https://www.newscientist.com/article/2318637-watch-a-swarm-of-drones-navigate-a-forest-without-crashing/

13May22

Michigan's SkySpecs gets $80M funding to expand drone software offerings

Ishveena Singh - May. 12th 2022

SkySpecs, a Michigan-based company whose drone software is used to monitor about 45% of all wind turbine blades in North America, has scooped up a cool $80 million in strategic funding to grow its product portfolio as well as its geographic

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footprint. The funding round was led by Goldman Sachs with participation from NextEra Energy Resources and existing investors.

SkySpecs provides wind farms with valuable data on the health of their wind turbine blades through autonomous drone inspections. In addition, the company leverages AI-based fault detection technology and diagnostic solutions to enable early fault detection so customers can maximize uptime and asset lifetime. Overall, SkySpecs manages approximately 118 gigawatts of renewable energy assets across 30 countries.

Danny Ellis, CEO of SkySpecs, says: the new funding will help SkySpecs accelerate the expansion of its software offerings as well as grow its geographic footprint to advance its mission to optimize renewable performance and help displace fossil fuel generation.
https://dronedj.com/2022/05/12/skyspecs-drone-inspection-software-funding/#more-80787

GENIUS NY Applications are Open: Drone Startups, Apply Now for the $1 Million Grand Prize Miriam McNabb May 12, 2022

The GENIUS NY program – an in-residence accelerator operated out of Syracuse, NY – is offering $3 million in investment in 5 finalist companies, including a $1 million grand prize.

GENIUS NY is the world's largest business accelerator focused on uncrewed aircraft systems, and it has an impressive success record. "Since 2017 GENIUS NY has invested more than $15 million in 26 startup companies who have gone on to raise more than $90 million in follow-on funding and scale and grow operations.

New York state has successfully generated a high tech ecosystem, including emerging drone technologies and the supporting systems like 5G, AI, and autonomy. In addition, the New York UAS Test Site (NUAIR) at Griffiss International Airport is one of seven FAA designated test sites in the country.

Genius NY applications will be open until May 31, and there is still time to put your application together. Semi-finalists will be selected to present demos and pitches this summer, and five companies will advance to participate in the competition – itself a unique programmed incubator and accelerator experience.

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"Applicants should be prepared to relocate to Syracuse to participate in the program starting in August," says the organizer. https://dronelife.com/2022/05/12/genius-ny-applications-are-open-drone-startups-apply-now-for-the-1-million-grand-prize/

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