UAS and SmallSat Weekly News

Contents

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21May22

Wingcopter to deploy 12,000 drones in African delivery network Bruce Crumley - May. 20th 2022

German delivery drone specialist Wingcopter has formed a partnership with an African UAV services company to create what is being called the world's largest commercial and medical aerial logistics network, ultimately aiming to cover 49 nations on the continent.

Wingcopter revealed the project Thursday, saying it is partnering with Continental Drones to deploy what is eventually expected to be 12,000 Wingcopter 198 delivery drones across the vast African continent. The time frame for building that network is five years and will rely entirely on Wingcopter fixed wing UAVs that can carry up to 13 lbs. of payload in up to three different, winch-lowered packages over maximum distances of 68 miles.

The delivery network will be overseen by Continental Drones – the subsidiary of Ghana- and Dubai-based based Atlantic Trust Holding – in its new role as a Wingcopter authorized partner. The objective is to rapidly set up and begin operating faster, cheaper, sustainable, and more efficient UAV logistics and transport services than ground-based options can.

It's also hoping to use UAVs to pull off a similar magic that smartphones have worked over the past decade in igniting booming e-commerce business among millions of African consumers who previously had no access to computers or internet accounts and currently have limited or no car, truck, or rail delivery infrastructure serving them.
https://dronedj.com/2022/05/20/wingcopter-to-deploy-12000-drones-in-african-delivery-network/#more-81114

UK's National Grid launches drone trial to fully automate asset inspections

Ishveena Singh - May. 20th 2022

UK's National Grid Electricity Transmission (NGET) is launching trials to fully automate the corrosion inspection of electricity transmission pylons with the help of autonomous drones.The year-long project, which is being conducted through a collaboration with tech startups Keen AI and sees.ai, will leverage BVLOS

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drone flights. The data captured will be processed using artificial intelligence.

NGET owns 21,900 steel lattice pylons that carry overhead transmission conductor wires in England and Wales. Transmission pylon steelwork conditions can deteriorate through corrosion, so periodic assessments are made to understand the health of the network. NGET inspects around 3,650 steel lattice pylons each year, capturing high definition still color images of steelwork using helicopters and manually operated drones. At present, the images captured by the drones are also processed manually by a pool of inspectors.

The trial project will enable a fleet of connected and autonomous drones to be flown BVLOS under license from the Civil Aviation Authority. https://dronedj.com/2022/05/20/uk-national-grid-drone-asset-inspection/#more-81152

Flyability launches Elios 3 indoor inspection drone with LiDAR sensor Ishveena Singh - May. 19th 2022

Flyability, the Switzerland-based maker of the popular Elios range of drones for indoor and confined-space inspections, is ready with its next offering: Elios 3. It's the world's first collision-tolerant drone equipped with a LiDAR sensor for indoor 3D mapping.

Elios 3 is powered by Flyability's new proprietary simultaneous localization and mapping (SLAM) engine called FlyAware. A combination of computer vision, LiDAR technology, and NVidia graphic engine, it acts as a centimeter-accurate indoor GPS for the drone, building real-time 3D maps and enabling the aircraft to sense its surroundings.

Flyability plans to make complex confined-space inspections completely autonomous in the future. But for now, the company is introducing the new Inspector 4.0 software which can be used to visualize Points of Interest found during an inspection in a high-resolution 3D map. Meanwhile, these survey-grade 3D models are being made possible using software from Flyability's new partner, GeoSLAM.

It's also worth highlighting that in addition to carrying a LiDAR sensor, Elios 3 can accommodate a secondary customizable payload. This versatility has prompted Adrien Briod, CTO of Flyability, to call the new drone "the single biggest project" the company has ever undertaken. https://dronedj.com/2022/05/19/flyability-elios-3-indoor-inspection-lidar-drone/

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FAA changes to eVTOL certification spook air taxi developers Bruce Crumley - May. 20th 2022

News that the Federal Aviation Administration (FAA) has changed its thinking on how it will certify electric takeoff and landing (eVTOL) aircraft for air taxi use has rattled developers of those vehicles – many prototypes of which are already well along in the approval process. In response to the jittery nerves that may have created, the regulator is assuring companies the alterations it has made won't send any projects off the certification rails.

The main point of change centers on the perspective from which the FAA will analyze eVTOL craft for certification, not necessarily different criteria it already laid out with makers of air taxis and other urban air mobility vehicles. Under the FAA's recently appointed acting administrator Billy Nolan, the regulator has decided not to apply Part 23 regulations for small fixed-wing aircraft as previously planned. Instead, it will certify eVTOLs as "power-lift" conveyance as stipulated in federal aviation regulation in 21.17(b). That special class is situated somewhere between light passenger planes and helicopters – which, to be fair, is pretty much how next-generation air taxis and UAM craft will be operating.

So, what will that change for manufacturers working to get their protypes certified? That's still not entirely clear, though it's starting to appear modifications involved will be less disruptive to the process than some UAM officials initially feared. https://dronedj.com/2022/05/20/faa-changes-to-evtol-certification-spook-air-taxi-developers/

Bhutan Flying Labs: Revolutionizing Technology for Good in Bhutan 21st April 2022

In Bhutan, Anuj Pradhan, an aerospace engineer, and Sangay Dorji, Software Developer/UAS pilot, use robotics, data, and AI to help their communities. Launching today as Bhutan Flying Labs, the team aims to launch local and national projects that leverage drones to upskill their peers while executing impactful work.

Inspired by His Majesty's vision on digitizing the nation, Bhutan Flying Labs will focus on leveraging drone technology in every industry and training youth and government officials interested in urban planning, emergency and disaster response, search and rescue, and logistics—areas where job opportunities are ripe and drones and related

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technologies can have an outsized impact.

The Bhutan Flying Labs team will work closely with the government on national cartographic or topographic projects. For example, the team could work with the National Land Commission Secretariat for survey and mapping, Thimphu City corporation for urban planning, or the Ministry of Agriculture & Forestry for precision agriculture.

The team has already conducted a successful project with the Royal Office for Media to measure the volume of the Memhakha (a waste dumping site in Thimphu). The project aimed to forecast how long it would take to fill the landfill and surface ideas to reduce the amount of waste. Bhutan Flying Labs has also worked on a traffic monitoring project to assess the number of vehicles moving through a given area. https://blog.flyinglabs.org/2022/04/21/bhutan-flying-labs-revolutionizing-technology-for-good-in-bhutan/?utm_source=WeRobotics+Updates+%26+Newsletters&utm_campaign=5c88215491-WeR+November+2020+Newsletter_COPY_01&utm_medium=email&utm_term=0_2dc9486912-5c88215491-365792797&mc_cid=5c88215491&mc_eid=26a3bab52b

Marine Corps to Advance Uncrewed VTOL Program May 16, 2022

The U.S. Marine Corps is poised to launch a new uncrewed vertical takeoff and landing (VTOL) program for cargo in the coming year, according to reports. The initiative, which would draw from technology emerging in the commercial sector, would be aimed at supporting logistics for Marines in the western Pacific.

Marines are eyeing hybrid and electric VTOL technology emerging in the commercial sector for the service's new unmanned logistics system-airborne large program it intends to initiate in fiscal 2023 to support distributed operations, Aviation Week reported.

Speaking at last week's Modern Day Marine event in Washington, D.C., Lt. Col. Nicholas Molder, of the Cunningham Group, the Marine Corps' aviation think tank that designs future force initiatives, outlined that the concept aims to turn to a VTOL family of systems as a cost-effective way to continuously evolve capability.
https://www.legendaryleadersininnovation.com/feeds/381/results/db6faf20b7f6013a4c540242ac110002

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22May22

Northern Michigan wildfire 75% contained, drones in use to find hot spots May 16, 2022 Justine Lofton | jlofton@mlive.com

The Blue Lakes Fire in Northern Michigan is 75% contained, and roads are being opened inside the fire zone while officials use drones to identify hot spots. The Michigan Department of Natural Resources has been fighting the fire since Friday afternoon, May 13. It was started by a lightning strike Wednesday night that smoldered for a few days before spreading, resulting in the wildfire.

Containment means that the fire is unlikely to spread beyond the containment lines where firefighters have plowed a line down to bare earth – removing all fire fuels – around that portion of the fire, said Kerry Heckman, DNR fire public information officer. “There may still be hot spots within the contained area.”

The DNR is using a drone and infrared imaging to identify those hot spots that need attention, Heckman said. https://www.mlive.com/news/2022/05/northern-michigan-wildfire-75-contained-drones-in-use-to-find-hot-spots.html

23May22

Will People Pay for Fast Drone Delivery? Smarty Survey Reveals What People Really Think Miriam McNabb May 20, 2022 by DRONELIFE Staff Writer Ian M. Crosby

Online shopping platform Smarty has announced the results of a new consumer survey about Americans’ shopping preferences. Conducted by Propeller Insights in March 2022, the survey of over 1,000 adults found that consumers desire better, faster delivery, with 48% of respondents stating they would pay more money for drone delivery if doing so allowed them to receive their products within an hour. Additionally, 43% of respondents said they were “not concerned” about drone delivery, and 51% said they would be “less concerned” about drone delivery if it enabled them to get products faster.

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Consumers were found to be willing to pay more for a fast, safe delivery, and were open to new delivery methods to achieve this. Consumers stated they would utilize a one-hour drone delivery service for a range of items, such as food (40%), prescriptions and medications (38%), batteries (30%), a smartphone, if theirs was lost, stolen or broken (30%), clothing (28%), COVID tests (25%), a new credit card, if theirs was lost or stolen (22%), alcohol (21%), their paycheck (20%), and baby and/or children's products (13%). https://dronelife.com/2022/05/20/will-people-pay-for-fast-drone-delivery-smarty-survey-reveals-what-people-really-think/

Zipline details the rollout of its drone delivery operation in Japan Bruce Crumley - May. 23rd 2022

Zipline is launching in Japan through a partnership with Toyota Tsusho Corp., a subsidiary of the eponymous automotive group which has created the Sora-iina subsidiary to manage medical drone deliveries to the Gotō Islands. Serving the approximately 50,000 residents of the archipelago, Zipline UAVs will fly beyond visual line of sight flights up to 40 kilometers roundtrip, and gradually expand to reach even more remote locations.

Zipline's spokesperson in Japan, Okeoma Moronu, described what that launch will entail, and what it represents. Japan marks an incredible development for Zipline. It is our first operation in Asia following 300K+ deliveries and 20M+ autonomous miles in the United States, Rwanda and Ghana. And it is the first time the first Zipline operation in the world to be operated by a partner, in this case Toyota Tsusho subsidiary Sora-iina.

Japan has busy, complex airspace. This operation marks the first time Japan's Civil Aviation Bureau has approved beyond visual line of sight flight of drones without onboard cameras.

Japan also has ambitious renewable energy targets, including reducing emissions by nearly half between 2013 and 2030, with the goal of being carbon neutral by 2050. Zipline's technology is the latest opportunity for greener last-mile delivery. Our electric, autonomous aircraft produce about 30 times fewer emissions than traditional delivery vehicles – providing a delivery method that's not just more sustainable, but also faster and more agile.
https://dronedj.com/2022/05/23/zipline-details-the-rollout-of-its-drone-delivery-operation-in-japan/

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AeroPest positions wasp-culling drone for broader applications Bruce Crumley - May. 23rd 2022

Though Pennsylvania startup AeroPest won't be delivering its specialized wasp extermination drone tech to clients until later this year, the company is already beginning to adapt its patent-pending aerial spraying device to a number of non-lethal uses by other businesses as well.

Backed by Philadelphia's Drexel University, AeroPest is initially marketing its Hummingbird precision aerial spraying invention to extermination companies – especially those that handle the uncomfortable and often dangerous work of eliminating wasp nests. Deployment of the articulated two-foot nozzle on a drone will permit enterprise clients to neutralize scores of the seriously stinging insects while avoiding use of ladders or rooftop climbing usually required to access to those elevated positions.

AeroPest says there are other advantages to using its drone-equipped aerial spraying system against wasps than just removing the risk of injuries during falls in singularly hostile environments. The precision system enables pinpointed targeting of pesticides, thereby needing less of those agents to kill the insects, and minimizing exposure to surrounding areas.

The fast setup and deployment of UAVs in those operations, meanwhile, permits quicker mission completion at each job site, and the potential of operators serving more customers in a workday. https://dronedj.com/2022/05/23/aeropest-positions-wasp-culling-drone-for-broader-applications/

24May22

WALMART DRONE DELIVERIES SET FOR BIG GROWTH THIS YEAR May 21, 2022 Sally French

It hasn't happened yet, but Walmart drone deliveries are set to get a major expansion. Following oodles of announcements around one-off drone delivery partnerships between drone service providers and popular (namely food) companies, here's one popular company that looks like it could make its drone delivery service a bit more permanent.

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Walmart drone deliveries are set to expand to 34 sites by the end of the year, according to an announcement today from David Guggina, SVP of Innovation and Automation at Walmart U.S. Deliveries will span 6 states, which are:

- Arizona
- Arkansas
- Florida
- Texas
- Utah
- Virginia

The retail giant says the expanded network would allow its drone deliveries to reach 4 million households and arrive within as little as 30 minutes of the order being placed, adding that it has a goal to deliver more than 1 million packages by drone in a year. Eligible customers will — during daytime hours between 8 a.m. and 8 p.m. — be able to order tens of thousands of items from a (large) curated list of mostly-grocery items. Walmart says deliveries can total up to 10 pounds, and delivery will be offered at a fixed delivery fee of $3.99.

The Walmart drone deliveries are being done in partnership with DroneUp, a drone delivery network. Walmart and DroneUp have been working together already for a couple of years now on a smaller scale. Rather than customers ordering emergency items, Walmart said the most popular deliveries were made for its sheer convenience, like a quick fix for a weeknight meal.
https://www.thedronegirl.com/2022/05/24/walmart-drone-deliveries-set-for-big-growth-this-year/

Innovative Drone Technology used in Hurricane Response Sarah Simpson 20 May 2022

The Navmar Applied Sciences Corporation Teros™ UAS and Mobile Operations Center have been used by Florida Power & Light Company in an intensive annual storm drill designed to test response to a simulated hurricane.

It has been 30 years since the unprecedented destruction of Hurricane Andrew and five years since Hurricane Irma, two historic storms that serve as stark reminders of the importance of storm preparation. During the simulated exercise, Hurricane Constantine, a mock Category 3 storm made a simulated landfall near Panama City.

The company's new fixed-wing drone, the NASC Teros™, is expected to begin serving customers later this year. The drone, the size of a small aircraft, can fly up to a thousand miles without needing to refuel, gathering real-time information and identifying the causes of outages.

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The NASC Teros™ is designed to be operated and fully integrated into the National Airspace System.. With short takeoff and landing capability, fast field assembly, rapid servicing, and autonomous flight operation, Teros is a highly versatile and highly capable aerial platform.

Teros can fly the programmed mission autonomously and seamlessly within the air traffic control system and achieves an exceptionally high level of Availability, Reliability, and Maintainability. https://www.unmannedsystemstechnology.com/2022/05/innovative-drone-technology-used-in-hurricane-response/?utm_source=UST+eBrief&utm_campaign=a8401587ea-ust-ebrief_2022-may-24&utm_medium=email&utm_term=0_6fc3c01e8d-a8401587ea-111778317&mc_cid=a8401587ea&mc_eid=acabe18a61

Indoor LiDAR Drone Launched for Industry 4.0 Phoebe Grinter / 19 May 2022

Flyability has unveiled the Elios 3, which the company claims is the world's first collision-tolerant drone equipped with a LiDAR sensor for indoor 3D mapping. A new SLAM engine called FlyAware lets it create 3D models as it flies.

Elios 3 was designed to address the need companies have for reliable confined-space inspection tools.

Elios 3 comes with an Ouster OS0-32 LiDAR sensor, allowing inspectors to collect data for the creation of survey-grade 3D models using software from Flyability's new partner, GeoSLAM. By combining the best of confined space drone data capture and 3D geospatial software technology, Flyability's partnership with GeoSLAM enables professionals to produce survey-grade point clouds of inaccessible places in their workplace.

Flyability's new proprietary SLAM engine FlyAware can turn the drone's LiDAR data into 3D models in real time, while the drone is in flight. FlyAware also gives the Elios 3 groundbreaking stability, combining data from the drone's three optical cameras and its LiDAR sensor to catch the smallest unpredictable movement and instruct the flight controller to compensate for it. This stability and other ease-of-use features make the Elios 3 easy to operate so that new pilots can be trained and perform their first inspection in the same day.
https://www.unmannedsystemstechnology.com/2022/05/flyability-launches-indoor-lidar-drone-for-industry-4-0/?utm_source=UST+eBrief&utm_campaign=a8401587ea-ust-ebrief_2022-may-

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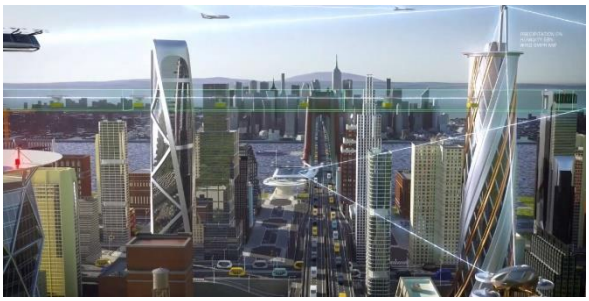
24&utm_medium=email&utm_term=0_6fc3c01e8d-a8401587ea-111778317&mc_cid=a8401587ea&mc_eid=acabe18a61

NASA mulls data ecosystem to help drones, air taxis make critical safety decisions Ishveena Singh - May. 24th 2022



NASA researchers are exploring the creation of a decentralized data and reasoning hub that would help autonomous aircraft make critical safety decisions rapidly.

NASA's Data & Reasoning Fabric (DRF) would work in a manner similar to how people use navigation apps to access different kinds of data – maps, accident reports, traffic conditions, roadwork status, etc. Just like these apps help us decide the best route to take at the time, NASA's DRF would send aircraft information tailored for their missions.

So, when a delivery drone connects to DRF, it would be able to access information from a weather station, a detailed map from city authorities, and the locations of nearby aircraft – all assembled using data from the marketplace.

Once the drone has all the required information, it can understand using its own software that the weather is acceptable, that it should fly above 200 feet to avoid a building, and that it must allow room for an air taxi flying nearby. However, if the weather is not conducive, decision support tools enabled by DRF could provide the drone with a new flight route that avoids weather and obstacle dangers.

The DRF project is being spearheaded by NASA Ames Research Center in California's Silicon Valley. At present, the vision is to address the needs of an Advanced Air Mobility system, but DRF can prove useful for the broader transportation network as well. You can learn more about DRF here. https://dronedj.com/2022/05/24/drones-air-taxi-safety-nasa-drf/

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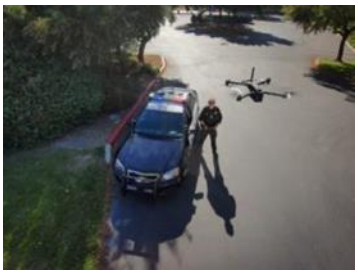
25May22

Skydio and Axon Respond: Drone Live Streams for 911 Operators Miriam McNabb May 24, 2022 Ian M. Crosby



Axon and autonomous flight leader Skydio have announced that public safety agencies utilizing both Skydio drones and Axon's real-time operations platform, Axon Respond, will be able to access drone live-streams for a more thorough perspective of incidents.

This pairing results in a new method for public safety agencies to leverage small unmanned aerial systems (sUAS) for real-time situational awareness and evidence management. Axon Respond will enable command staff and 911 dispatchers to make use of the livestreaming capabilities provided by Axon body-worn and in-car cameras, as well as the Skydio drone's aerial view, within the same network. Footage captured by the Skydio drone will also be sent to Axon's digital evidence management platform, Axon Evidence, where it will be securely stored for access and sharing.
https://dronelife.com/2022/05/24/skydio-and-axon-respond-drone-live-streams-for-911-operators/

WingXpand Debuts Compact Drone Featuring Expandable Wings Jessica Reed | May 24, 2022

The drone model from WingXpand, which debuted at the AUVSI XPONENTIAL event in April, features a 7-foot wingspan. The wings are expandable, so the unmanned aircraft system (UAS) can collapse into a size small enough to fit into a backpack. The drone was also featured at the Special Operations Forces Industry Conference 2022 last week.

The fixed-wing drone was just launched to the public, and the team is currently working with clients on test flights. They plan to start delivery of the UAS in the third quarter of this year.

The drone can fly for over 2 hours, or more than 1,000 acres. Use cases for the UAS range from the oil and gas industry and agriculture sector to public safety and defense operations. "It is the most powerful drone system that can fit in the smallest possible footprint."

In the future, Barbieri envisions that fixed-wing drones will become more commonplace in the market. "We actually believe that for commercial professionals and our defense customers,

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these will be the systems of preference in five years. https://www.aviationtoday.com/2022/05/24/wingxpand/

Latest In Advanced Air Mobility Showcased at EBACE 2022 (European Business Aviation Convention & Exhibition)


PAL-V's Roadable Autogyro The Liberty - WORLD'S FIRST FLYING CAR PRODUCTION MODEL

China's EHang 216 - Product of the Guangzhou EHang Intelligent Technology Co Ltd, founded 2014, China's EHang 216 employs stacked mini-rotors to provide helicopter-like performance

Lilium Jet - Lilium (Booth IZ05) was established in Germany in 2015 and worked initially on a two-seater before uprating the design to a larger regional air taxi. The craft incorporates rows of small, electric-driven, shrouded fans on the wings and foreplanes, which hinge 90 degrees for transition between vertical and horizontal flight.

PAL-V's Autogyro The Liberty - PAL-V formed in the Netherlands in 2000 to develop a roadable autogyro powered by a Rotax piston engine. A considerably revised design, the Liberty, was shown in 2016, but the planned early-2020 deliveries have not taken place. https://aviationweek.com/shownews/ebace/latest-advanced-air-mobility-showcased-ebace-2022?utm_rid=CPEN1000003332045&utm_campaign=33014&utm_medium=email&elq2=536595d72a204863bdd554e85ce21531&utm_emailname=AW_News_Aerospace_20220525&sp_eh=536b822f340988ca12deeaf6a0907ccae63850ee4cf07728d68baa3b8017155d

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Navy Ships Swarmed by Drones, Not UFOs, Defense Officials Confirm ADAM KEHOE

MAY 21, 2022

After intense public speculation, stacks of official documents obtained via the Freedom Of Information Act, ambiguous statements from top officials, and an avalanche of media attention, it has now been made clear that the mysterious swarming of U.S. Navy ships off the Southern California coast in 2019 was caused by drones, not otherworldly UFOs or other mysterious craft. Raising even more questions, a similar drone swarm event has occurred off another coast, as well. These revelations came from top Department of Defense officials during a recent and much-anticipated house hearing on UFOs, which you can read all about here.

The strange series of events in question unfolded around California's Channel Islands in July of 2019. On multiple evenings, swarms of unidentified drones were spotted operating around U.S. Navy vessels. The behavior provoked defensive reactions from the ships, including the deployment of emergency security teams and, in later instances, radio frequency-based counter-drone technology. Early investigations into the incidents by Navy intelligence and the Federal Bureau of Investigation surfaced few answers and appeared to fade away without any firm conclusions.

Shortly after *The War Zone* reported the incidents in-depth last year, leaked footage of some of the incidents surfaced online. National media took an intense interest in the video clips, which depicted a triangular light flying over the ships as seen through night vision scopes. The unusual appearance of the objects and their behavior fueled speculation that the objects were otherworldly UFOs or some type of truly exotic craft.

In our coverage of these incidents, we found increasingly clear evidence that the objects were drones. Numerous ship deck logs from the earliest incidents referred to the objects as UAS, UAV, or plainly as drones. https://www.thedrive.com/the-war-zone/navy-ships-swarmed-by-drones-not-ufos-defense-officials-confirm

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Dronamics obtains first certification for EU-wide drone deliveries Bruce Crumley - May. 25th 2022

Bulgaria's Dronamics has taken a major step toward its goal of launching middle-mile automated drone delivery service later this year by obtaining what it says is the first operational certificate by a UAV airline for activity across the European Union (EU).

Dronamics made the announcement at the European Business Aviation Conference Exhibition on Wednesday, saying the company had obtained the EU's Light UAS Operator Certificate from civil aviation authorities in Malta – the company's main European base. Under EU rules, certification extended by one member state is applicable to all others, opening the way for Dronamics to launch middle-mile drone delivery across the 27-nation bloc planned for later this year.

The LUC permits Dronamics self-authorize flights of its Black Swan aircraft across EU countries, including beyond visual line of sight operation required for the kind of longer distances that – until now – have been considered too remote and costly for drone deliveries. The company's automated UAVs are designed to carry 350 kg over distances of up to 2,500 km.

By extending air transport of goods to middle-mile distances, Dronamics is betting it can stimulate increased business from consumers currently being served by longer ground transport. It also believes that can transform supply chains by using drones to make deliveries more efficient, faster, less expansive, and lower in carbon emissions.
https://dronedj.com/2022/05/25/dronamics-obtains-first-certification-for-eu-wide-drone-deliveries/#more-81345

Skydio's secret sauce for making drones smarter, faster is now public Ishveena Singh - May. 25th 2022

There's no question that the brains inside Skydio drones are rather impressive. These things are masters of AI and autonomy, capable of carrying out tasks that can prove challenging for other drones. And now, it's ready to share its learnings with the wider robotics community by making public

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SymForce – the library that powers the motion planner and computer vision systems used by Skydio drones.

Written in C++, with Python bindings for experimentation, SymForce makes it possible to code a problem once, experiment with it symbolically, generate optimized code, and then run optimization problems based on the original problem definition.

The code generation library is also capable of adding components like 3D geometry types, camera models, noise models, and novel singularity handling techniques that make it possible to model complex robotics problems as symbolic expressions.

Hayk Martiros, Skydio's VP of Autonomy, describes SymForce as an "incredible tool" that allows his team to quickly progress from rapid prototyping to the type of highly optimized runtime code that powers Skydio drones. https://dronedj.com/2022/05/25/skydio-symforce/#more-81340

26May22

Drone Delivery of Ice Cream: Flytrex Partners with Unilever! Miriam McNabb May 25, 2022 by Dronelife Staff Writer Ian M Crosby

Today, Unilever's digital storefront The Ice Cream Shop announced a partnership with drone delivery leader Flytrex for an ice cream drone delivery service available in all of Flytrex's U.S. locations, which include Holly Springs, Fayetteville and Raeford, North Carolina, and Granbury, Texas.

Orders from The Ice Cream Shop, placed through the Flytrex app, will be delivered directly to the yards of local residents, with a flight time of less than three minutes. Customers are provided with real time updates over the course of the delivery process via the app, up until the order arrives and is lowered from the delivery drone by wire.

In collaboration with Flytrex partner Causey Aviation Unmanned, the new service is operating under a Federal Aviation Administration waiver that grants a delivery radius of one nautical mile, allowing the companies to serve thousands of potential homes.
https://dronelife.com/2022/05/25/drone-delivery-of-ice-cream-flytrex-partners-with-unilever/

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Assessing the Options and Opportunities for Drone Pilots in 2022 Scott Howe MAY 25, 2022

Job opportunities for qualified operators are expanding in industries such as construction, energy, package delivery, and public safety. What's more, leading drone companies and UAV-related organizations are offering training programs to ensure that the industry will have the pilots it needs as it continues to grow.

Drone pilot jobs can be challenging, rewarding—and lucrative. A review of opportunities for drone pilots stated that median annual salary in the field is $58,280. However, the report said, some pilots can command as much as "six-figures flying drones commercially."

Where can you find these jobs? A February 2022 Commercial UAV News article asserted that dozens of industries will be looking for talented pilots in the coming years, but demand will be particularly high in the fields of surveying and mapping, delivery, construction, inspection, and security. https://www.commercialuavnews.com/assessing-the-options-and-opportunities-for-drone-pilots-in-2022?mkt_tok=NzU2LUZXSi0wNjEAAAGEoIEh3JnhRnDheGXEIXpyFwPujpbd8Lz4AXwIkREJa4WUcA62bjvmKUtPvp4AhryrTqAFxRLQRVz4zLwwOFGLHJXv3gpeQNXaO_4S4laA9PL9Zw

The Role of Social Media Influencers in Our Industry Juan Plaza MAY 19, 2022

With the introduction and massive adoption of smart phones at the end of the first decade of the 21st century, social media was catapulted from a fringe business to one that completely dominated the internet in just a few years. A new form of entertainment was born, and a new wave of individuals who could identify an audience and discover a need adopted new ways of introducing concepts and products to a young audience that had turned sour on established media such as radio and TV.

These individuals are called "influencers." Not surprisingly, many of these individuals have found their way into unmanned aviation.

Recently, a powerful group of influencers have emerged in our industry as forces to contend with. They analyze new products and have a huge impact in the sales and general acceptance of new technology.

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We reached out to one of these influencers in our industry, Rafa Ocón, also known as DroneGuru. Rafa has over 100K followers in every continent where Spanish is spoken.

"There's an immense need for information regarding what can be done and what's prohibited in the world of drones," Rafa said with enthusiasm. "There's also an appetite for training and formal instructions, so we do both. I see my role as an educator, and nothing gives me more satisfaction than to read that my followers are getting certified and are flying safely." https://www.commercialuavnews.com/international/the-role-of-social-media-influencers-in-our-industry?mkt_tok=NzU2LUZXSi0wNjEAAAGEoIEh2wLOY6mqNTeS2Ek-M6ztZR1P0__4X-NXBiQ6-2EJhAuUU0V2eoQqYX1A1MeI1v04KfKIWgzgFWDJ3qvj9CnH7FoP94HK_kwLCJeaCbfUvA

The FAA Confirms Changes to Regulatory Approach for Powered-Lift Certification Jessica Reed | May 26, 2022

In a statement to *Avionics International* this week, the Federal Aviation Administration confirmed that it will be modifying its regulatory approach for certification of powered-lift operations and the pilots that operate these aircraft. In the short-term, the FAA plans to use its "special class" process in 14 CFR 21.17(b) to type certificate powered-lift aircraft, to address the unique features of emerging powered-lift models.

This type certification will use the performance-based airworthiness standards found in Part 23 of the FAA regulations. The Part 23 rule was revised in 2016 to update airworthiness standards for small airplanes; the agency had stated its intent to use the new Part 23 for "unique airplanes" based on their view that the former Part 23 did not account for airplanes with new technology, such as electric propulsion systems. In the 2016 update to Part 23, the FAA also decided that it did not intend to continue using 21.17(b) for unique category airplanes.

Now, more than five years after the 2016 rewrite, the FAA has elected to use 21.17(b) for the growing category of powered-lift vehicles. "The change is part of the agency's efforts to safely and efficiently integrate new types of aircraft into the nation's aerospace system, while providing a simpler pathway for applicants to obtain the necessary FAA approvals," according to the statement from the agency. https://www.aviationtoday.com/2022/05/26/powered-lift-faa/?oly_enc_id=7021F0632090D7B

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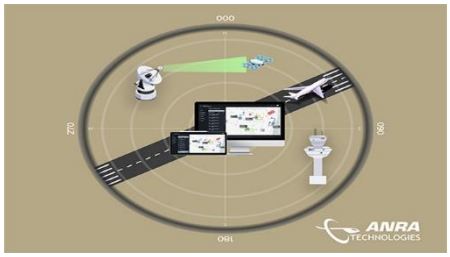
ANRA awarded contract to test BVLOS drone operations May 25, 2022 News



ANRA Technologies was selected by Raytheon Intelligence & Space (RI&S) to provide its SmartSkies suite of technology solutions to support simulation and live drone flight operations at Mid-Atlantic Aviation Partnership UAS test site at Virginia Tech. The testing is part of a larger project to safely integrate Unmanned Aircraft Systems into the National Airspace System and advance Beyond Visual Line of Sight (BVLOS) operations.

Under the contract, RI&S will establish a ground-based surveillance supplemental data service provider (SDSP) test program consisting of local radar services using the company's Skyler active electronically scanned array, AESA, UAS weather product services and UAS service suppliers.

ANRA Technologies will partner with RI&S and other program participants, including Virginia Tech, SkyGrid and Tomorrow.io, to test technologies that will support scalable, safe and compliant BVLOS drone operations at low altitudes.

For this project, ANRA SmartSkies FUSION will consume data feeds from the Skyler AESA and data transmitted from cooperative aircraft flying within the USS network to develop a well-defined and known airspace environment. https://uasweekly.com/2022/05/25/anra-awarded-contract-to-test-bvlos-drone-operations/?utm_source=rss&utm_medium=rss&utm_campaign=anra-awarded-contract-to-test-bvlos-drone-operations&utm_term=2022-05-26

US is developing drones with 'unhackable' quantum communication technology

Ishveena Singh - May. 26th 2022

US researchers are building a drone-based communication network that would leverage the laws of quantum physics to make information exchange ultra-secure. While this system can prove beneficial in several scenarios, one prominent use case is warfare wherein quantum drones could provide one-time crypto keys to relay critical messages that spies and enemies would not be able to intercept.

Similar efforts have been made by China before, but this is the first time such a project is being undertaken in the US at the behest of the Office of the Secretary of Defense. Florida Atlantic

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University's Warner A. Miller is leading the project in concert with quantum tech specialist Qubitekk and defense technology innovator L3Harris.

The phenomenon involves a pair of particles of light or photons that are generated in such a way that while the individual quantum states of each are indefinite, they are still correlated. As such, the act of measuring one instantaneously determines the result of measuring the other, even when they are at a great distance from one another.

This phenomenon was referred to by Albert Einstein as "Spooky Action at a Distance." Einstein noted that quantum mechanics should allow two objects to affect each other's behavior instantly across vast distances as if the two are connected by a mysterious communication channel.

A. Matthew Smith, a senior research physicist at the Air Force Research Laboratory Information Directorate, points out that the potential of secure communication from a portable quantum communication drone in contested environments can have important future capabilities for the Air Force. https://dronedj.com/2022/05/26/quantum-drones/

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Joby Receives Part 135 Certificate Kate O'Connor May 26, 2022

Joby Aviation announced on Thursday that it has received its Part 135 air carrier certificate from the FAA, allowing the company to operate aircraft commercially. Joby reported that the certification process included the submission of more than 850 pages of manuals and required its pilots to "demonstrate mastery of the Company's procedures and training under FAA observation."

Before launching eVTOL operations, which it is targeting for 2024, Joby noted that it still needs type and production certificates for its aircraft. The company's five-seat, piloted eVTOL is expected to travel at speeds of up to 200 MPH and have a maximum single-charge range of 150 miles. Joby faces challenges including a recent change in the FAA's approach to eVTOL certification and the crash of one of its uncrewed eVTOL prototypes during a flight test earlier this year. https://www.avweb.com/recent-updates/evtols-urban-mobility/joby-receives-part-135-certificate/?MailingID=935&utm_source=ActiveCampaign&utm_medium=email&utm_content=Joby+Receives+Part+135+Certificate%2C+Sonaca+Halts+Production+Of+Sonaca+200&utm_campaign=Joby+Rece

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ives+Part+135+Certificate%2C+Sonaca+Halts+Production+Of+Sonaca+200+-+Friday%2C+May+27%2C+2022

Blue sUAS Manufacturer Inspired Flight Introduces New Heavy Lift Drone Miriam McNabb May 26, 2022

The latest offering from U.S. drone manufacturer Inspired Flight ticks all of the boxes for enterprise drone projects. Inspired Flight's heavy lift hexacopter was originally designed for U.S. Department of Defense clients and is NDAA-compliant, engineered and manufactured entirely in the U.S., offering a platform that meets government and enterprise security requirements.

Most importantly, the IF1200A offers category-leading functionality: payload flexibility, impressive flight endurance, and a rugged airframe. Put together, these capabilities make the IF1200A an industrial workhorse in the under 55-pound (appropriate for Part 107 pilots) category.

Flight endurance is directly influenced by weight – so for heavy lift drones, flight time is a significant issue to overcome. The IF1200A has been engineered to achieve a major upgrade in flight time: up to about 45 minutes with a smaller payload, and 25 minutes carrying a full 20 pounds. https://dronelife.com/2022/05/26/blue-suas-manufacturer-inspired-flight-introduces-new-heavy-lift-drone-the-new-if1200a/

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