UAS and SmallSat Weekly News

Contents

2 Snooping Scottish researchers use drones to monitor pregnancies of protected dolphins
2 Skyfire unveils SF2 drone for public safety and critical missions
3 Iris Automation receives FAA waiver to test BVLOS drones in Nevada river rescue missions
4 Airbus launches Remote Carrier 'loyal wingman' from A400M mother ship
4 BlueHalo Awarded Army Contract for the Development of Swarming UAS
5 FAA Approves BVLOS Flights for U.S. Refinery, Marking a First
5 SpaceX makes its case for space sustainability with latest Starlink launch
6 Tel Aviv Marathon Reaches New Heights as Israel Advances Use of Drones in Urban Areas
7 NASA invites collaboration to define future of air travel, two "Sky for All" events in March
8 Ukraine's Defense Ministry asks drone owners to help repel invading Russian troops
8 Researchers create self-morphing land-air drone
9 Zanzibar is using drones to take the fight to malaria mosquitoes
10 Videogrammetry SkyeBrowse Raises $2.3 Million Seed – and Team Grows from 4 to 24
10 Elsight Delivers Communications for Multi-Domain Autonomous Ops
11 Physical & Virtual Avenger UAVs Demonstrate Autonomous Search & Follow
12 NDAA-Compliant Albatross UAV Released
12 Emesent Hovermap ST sets survey grade standard for autonomous LiDAR mapping
13 MissionGO Flight Demonstrations in the Navajo Nation Highlight Essential Use Cases
13 Scottish company invents first hydraulic motor heavy-lift drone
14 Wing Drone Delivery in Australia: One Drone Delivery Every 25 Seconds
15 Combat Mission Flight Test Demonstrates Manned-Unmanned Teaming from BAE Systems
15 Rocket Lab is expanding its Wallops Island presence to launch its Neutron rocket
16 Killing drones with Thor's hammer: Air Force eyes counter-UAS 'Mjölnir' weapon
17 Dufour Aerospace Aims to Compete with Medevac Helicopters
17 Swoop Aero drones deliver ultra-cold Pfizer COVID-19 vaccines in Malawi
18 Cal Poly students learn drone piloting for elephant seal census
19 NORTH CAROLINA DRONE DELIVERY DEAL ENABLES ZIPLINE'S U.S. EXPANSION
19 FAA Grants Censys Technologies and Soaring Eagle Technologies 12-Mile BVLOS Waiver
20 General Atomics Aeronautical Systems announces its newest UAS platform: Gambit
21 RECORD 2021 DRONE INVESTMENT NEARLY TRIPLES 2020'S RECORD-BREAKING FIGURE

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26Feb22

Snooping Scottish researchers use drones to monitor pregnancies of protected dolphins Bruce Crumley - Feb. 25th 2022

The identification process was part of a project between scientists from Scotland's Aberdeen University and Duke University's Marine Robotics and Remote Sensing Laboratory. The Scottish contingent has studied local bottlenose dolphins in the Moray Firth Special Area of Conservation for over three decades, and recently added drones to their mix of tools to identify pregnant females and monitor procreation rates. Use of the aerial tech not only proved less invasive than previous methods, but also were far more precise in determining which individuals were carrying calves – and which of those successfully gave birth later.

Before deployment of drones, Scottish experts had to trail dolphins in boats and make eyeball estimates of which were pregnant, then wait to see which among them turned up several months later with offspring. Flying UAV from skiffs, the researchers could rely on cameras and sensors to distinguish porpoises from one another and get precise measurements to determine which of the females were in the family way. Using that initial identification data in spotting the pods several months later, observers were able to see which expecting mothers turned up with heathy calves in tow. https://dronedj.com/2022/02/25/snooping-scottish-researchers-use-drones-to-monitor-pregnancies-of-protected-dolphins/#more-77135

Skyfire unveils SF2 drone for public safety and critical missions Bruce Crumley - Feb. 25th 2022

Mining the insights and feedback from a decade of work with public safety and first responder clients, Skyfire decided to develop the SF2 as a critical use drone tailored to the needs of services intervening in what are often life-and-death emergencies. Built with aerospace-grade aluminum and carbon fiber

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materials designed to withstand extreme situations, the UAV's payload-agnostic design leaves it adaptable to the widely varying uses and objectives of different mission circumstances.

Skyfire's entry into specialized drone manufacturing with the SF2 was motivated by the understanding, insight, and feedback it gathered in its work with hundreds of US public safety and critical sector clients as they navigated the Federal Aviation's certification of authorization process. The result is the UAV tailor-made to emergency and first responder needs, yet still flexible enough for diversified deployment goals within that category. https://dronedj.com/2022/02/25/skyfire-unveils-sf2-drone-for-public-safety-and-critical-missions/#more-77108

Iris Automation receives FAA waiver to test BVLOS drones in Nevada river rescue missions Ishveena Singh - Feb. 25th 2022

As part of its UAS integration initiative called BEYOND, the FAA has approved Iris Automation to fly a small drone autonomously beyond visual line of sight (BVLOS) in a rural, unpopulated area south of Reno, Nevada. Once flights over unpopulated areas are proven successful, the project will move to urban areas.

Iris applied for this waiver on behalf of the City of Reno and the Reno Fire Department (RFD) – a seemingly long-term collaboration that Reno Mayor, Hillary Schieve, hails as a "unique teaming of public and private interests."

BVLOS drones are of particular interest to RFD. The department conducts about 40 rescues every year where first responders are required to enter the waters of the Truckee River. Almost 10% of these missions occur in the dark.

With a single mission lasting about an hour on average and requiring 12-20 first responders, water exposure – especially in moving water incidents – becomes extremely dangerous for both victims and emergency crews. As such, RFD has high hopes from BVLOS drones that could both help save lives and reduce the resources required for rescue operations, hence putting fewer fire department personnel at risk. https://dronedj.com/2022/02/25/iris-automation-faa-bvlos-drones-river-rescue-nevada/

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27Feb22

Airbus launches Remote Carrier 'loyal wingman' from A400M mother ship

February 23, 2022 News

During a recent test, an Airbus A400M deployed a drone from its opened rear cargo ramp door whilst airborne, validating its ability to air-launch drones. In the future, such unmanned aircraft, called Remote Carriers, can serve as force multipliers for various missions while keeping the pilots out of harm's way. Manned-unmanned teaming will allow the Remote Carriers to operate in concert with manned aircraft, opening new fields of tactics to surprise, deceive, deter, saturate and strike opponents.

During the flight test, an Airbus-built Do-DT25 drone, acting as a surrogate Remote Carrier, was released over a test range in Northern Germany. Shortly after the launch, the drone's parachute opened, delivering it safely to the ground. Throughout the test, the drone was connected and transmitting data to the A400M "mother aircraft". This data transfer illustrates how Remote Carriers can be connected to a combat cloud network, providing vital information by serving the role of "eyes and ears" over the battlefield, while also enabling them to be tasked by the manned aircraft's operators during their missions.
https://uasweekly.com/2022/02/23/airbus-launches-remote-carrier-loyal-wingman-from-a400m-mother-ship/?utm_source=rss&utm_medium=rss&utm_campaign=airbus-launches-remote-carrier-loyal-wingman-from-a400m-mother-ship&utm_term=2022-02-27

BlueHalo Awarded Army Contract for the Development of Swarming UAS February 24, 2022 Military | News

BlueHalo was recently awarded an initial $14M contract for the development of a small Unmanned Aircraft System (sUAS) architecture by the US Army Rapid Capabilities and Critical Technologies Office.

BlueHalo will provide the Army with an sUAS autonomous swarming capability not currently available to the warfighter. BlueHalo will deliver Artificial Intelligence/Machine Learning swarm logic capabilities, communications systems, and evolving technologies within a system-of-systems framework. This integrated "HIVE" of proprietary, U.S.-made and manufactured sUAS platforms will provide the warfighter with improved mission efficiency, sensor performance, and a reduction in cognitive workload.

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https://uasweekly.com/2022/02/24/bluehalo-recently-awarded-army-rccto-hive-contract-for-the-development-of-offensive-swarming-uas/?utm_source=rss&utm_medium=rss&utm_campaign=bluehalo-recently-awarded-army-rccto-hive-contract-for-the-development-of-offensive-swarming-uas&utm_term=2022-02-27

28Feb22

FAA Approves BVLOS Flights for U.S. Refinery, Marking a First RENEE KNIGHT

FEBRUARY 10, 2022

Delek, a downstream energy company, began deploying Percepto UAS about three years ago to monitor various assets, a job that's typically done manually, said Ariel Avitan, Percepto's chief commercial officer. They saw the value of the drone flights right away, with collected data quicky being converted into actionable reports. But the deployments still required people on the ground to watch and operate the drone, limiting the technology's full potential.

With the approval, an operator can manage and monitor the autonomous drone from a control room. The drone-in-a-box solution can now "provide value on the full site" once it takes off, Avitan said, which leads to more assets being monitored and more data being converted into actionable insights. https://insideunmannedsystems.com/faa-approves-bvlos-flights-for-u-s-refinery-marking-a-first/

SpaceX makes its case for space sustainability with latest Starlink launch Jeff Foust — February 25, 2022

WASHINGTON — SpaceX launched another set of Starlink satellites Feb. 25 as the company argues its satellite constellation is consistent with the safe and sustainable use of low Earth orbit.

A Falcon 9 lifted off at 12:12 p.m. Eastern from Space Launch Complex 4E at Vandenberg Space Force Base in California. The rocket deployed its payload of 50 Starlink satellites into an orbit at an altitude of about 315 kilometers a little more than an hour later. SpaceX noted in its webcast of the launch that it is now offering services in 29 countries, most recently Brazil and Bulgaria. The company also worked with the government of

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Tonga to provide connectivity after a volcanic eruption in January broke submarine cables providing internet connectivity for the Pacific Island nation.

This launch came four days after another Falcon 9 launched 46 Starlink satellites from Cape Canaveral, Florida. The company now has 1,970 Starlink satellites in orbit, a constellation far larger than any other satellite system today. SpaceX is seeking permission from the Federal Communications Commission to place as many as 30,000 next-generation Starlink satellites into orbit. https://spacenews.com/spacex-makes-its-case-for-space-sustainability-with-latest-starlink-launch/

Tel Aviv Marathon Reaches New Heights as Israel Advances Use of Drones in Urban Areas February 24, 2022 News

Unmanned Traffic Management specialist,Airwayz Drones has announced the Israeli police will be using a network of drones as part of security efforts to monitor the 2022 Tel Aviv Samsung Marathon tomorrow, managed by Airwayz' AI-based Dynamic UTM. The drone network allows police greater coverage of the area, while intelligent software identifies events requiring police attention.

With an expected 40,000 marathon runners and equivalent crowds, the event is being coordinated and supervised by Ayalon Highways from its Command Centre in Tel Aviv. Drone fleet operators will be running patrols along the route, while tethered drones will monitor the concentration areas, as well as the start and finish lines.

Dr. Ami Appelbaum, Chairman of the Israel Innovation Authority, comments, "The Israel National Drone Initiative – a joint venture between the Israel Innovation Authority, Ayalon Highways, and the Israel Commercial Aviation Authority – has been working to demonstrate the viability of multiple drone operators in the same urban airspace, which we're now able to put into practice, supporting the police in keeping this mega-event secure."

Drones will patrol along the marathon course, staying airborne as long as possible to provide maximum support for the police. Individual operators will be responsible for the assigned routes of the patrolling drones while an analytical system will examine the images in real-time, flagging behavior patterns that suggest police attention is necessary.
https://uasweekly.com/2022/02/24/tel-aviv-marathon-reaches-new-heights-as-israel-advances-use-of-

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drones-in-urban-areas/?utm_source=rss&utm_medium=rss&utm_campaign=tel-aviv-marathon-reaches-new-heights-as-israel-advances-use-of-drones-in-urban-areas&utm_term=2022-02-28

NASA invites collaboration to define future of air travel, two "Sky for All" events in March February 25, 2022

US National Aeronautics and Space Agency invites input to help define what a "Sky for All" might look like by 2050. NASA has released briefing that asks:

- What additional research and development will be required to fully realize those selected dreams?
- How soon do we need to begin that work and what technology still needs to be perfected?

Two upcoming online gatherings will provide more information about "Sky for All" to anyone who might want to offer input and contribute to the future vision for aviation that will guide NASA's research during the next three decades or so.

The first is imaginAviation, a free three-day virtual event that will be held March 1-3, 2022. Many of NASA's aeronautical innovators will present updates on the programs and projects they are working on. "Sky for All" will be featured as well. For more information and to register, click here.

The second is a free webinar dedicated to the "Sky for All" vision. The online event will be held March 28, 2022. For more information about the webinar and to register, click here.

The idea is that information compiled for "Sky for All" will be able to guide decisions on where NASA should invest its research resources during the coming years. This information also will help the Federal Aviation Administration make its research investment decisions as it pursues a similar effort known as "Charting Aviation's Future: Operations in an Info-Centric National Airspace System (NAS). https://www.unmannedairspace.info/latest-news-and-information/nasa-invites-collaboration-to-define-future-of-air-travel-hosts-two-sky-for-all-events-in-march/

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Ukraine's Defense Ministry asks drone owners to help repel invading Russian troops Bruce Crumley - Feb. 26th 2022

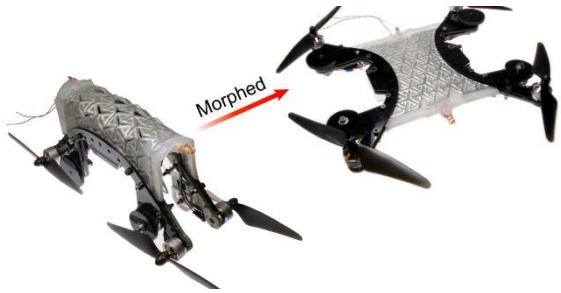
Ukraine's Defense Ministry has called upon citizens who own drones to use them in support of the country's armed forces in their battle to prevent the invading Russian Army from capturing the capital, Kyiv.

The Ukrainian Defense Ministry made the appeal in a Facebook post as the Russian military entered Kyiv and battered other cities around the country. Throughout Friday, President Volodymyr Zelensky vowed to repel the invading forces and urged people to help in the defense of their cities and nation. In the same spirit, owners of consumer drones in the capital were called upon to use their craft in the fight against advancing Russians or hand them over to Ukraine troops who could.

"Do you own a drone? Give it to experienced pilots to use!" the post read, according to a translation in a *Gizmodo* report. "Do you know how to (fly) a drone? Join the joint patrol with units 112 of the separate brigade of the city of Kyiv!

"Kyiv is our home, defending it is a common task #STOPRUSSIA," it continued. "You and your drone need Kyiv in this fierce moment!" https://dronedj.com/2022/02/26/ukraines-defense-ministry-asks-drone-owners-to-help-repel-invading-russian-troops/#more-77142

Researchers create self-morphing land-air drone Bruce Crumley - Feb. 28, 2022



A team of researchers at Virginia Tech has developed pliable materials that can morph from ground traveling drones into aerial craft – and back – in a matter of seconds.

Led by Assistant Professor Michael Bartlett, the Virginia Tech squad took inspiration for their self-morphing, dual-functionality drones from living organisms capable of changing shape to enable different kinds of activity. Octopi do that as they move, eat, and interact with changing surroundings. Even human muscles alter form when flexed to lift loads and generate movement.

The team used the Japanese paper cutting art of kirigami to decern which kinds of shapes were inherently stronger and applied those to rubber and composite materials. Into those skins were

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embedded an endoskeleton made of a low melting point alloy (LMPA). That allowed the outer-coated rubber ensemble to hold its shape when desired, then alter its form when the LMPA mesh was heated by soft wires near it.

The Virginia Tech unit came up with a stable structure of a car-like drone that could be morphed into a shape to facilitate flight using attached rotors. The trick was developing the exoskeleton LMPA to permit bending from one form to another, then be melted back to assume its original position when re-heated and cooled again.

The Virginia Tech experiment produced a drone capable of morphing from ground to aerial travel in just seconds, then return to original shape once back on ground.
https://dronedj.com/2022/02/28/researchers-create-self-morphing-land-air-drone/#more-77162

Zanzibar is using drones to take the fight to malaria mosquitoes Ishveena Singh - Feb. 28th 2022

The project is being spearheaded by an international team comprising of the UK's Aberystwyth University, Liverpool School of Tropical Medicine, London School of Hygiene and Tropical Medicine, Zanzibar Malaria Elimination Program, Tanzanian Flying Labs, Mosquito Consulting, and Zzapp Malaria. Funding is being provided by the Innovative Vector Control Consortium, which was established in 2005 with an initial grant of $50 million from the Bill & Melinda Gates Foundation.

One of the main challenges to disease managers is finding small water bodies that mosquitoes use to breed. This is where drones come in. For the first time, drone imagery can be routinely captured by the malaria elimination program in Zanzibar to create precise and accurate maps of potential breeding sites. A single drone is able to survey a 30-hectare rice paddy in just 20 minutes.

The approach has proven to be so accurate and efficient; Dr Silas Majambere from Pan-African Mosquito Control Association wants drone mapping to be adopted in other national malaria campaigns in Africa as well, including those in Rwanda, Tanzania, Uganda, and Ghana.

The international team is now incorporating drone imagery and smartphone technology into a spatial intelligence system to help guide efforts to eradicate the disease which kills more than 400,000 people each year. https://dronedj.com/2022/02/28/drone-malaria-zanzibar/

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1Mar22

Videogrammetry SkyeBrowse Raises $2.3 Million Seed – and Team Grows from 4 to 24 Miriam McNabb February 28, 2022 by Staff Writer Ian M. Crosby

In 2016, Bobby Ouyang was a junior at Rutgers University, where he started working with Dr. Peter Jin, a tenured professor at the Rutgers Center for Advanced Infrastructure and Transportation, on a research project that would eventually evolve into the advent of SkyeBrowse, a video-based 3D modeling platform using drone technology.

It was his involvement in a motorcycle accident in 2017 that made Bobby decide to develop SkyeBrowse full time, realizing the inefficiencies of accident reconstruction when it was still being performed by first responders hours after the accident, causing additional traffic on scene.

SkyeBrowse distinguishes itself from other 3D mapping technologies with its use of patented videogrammetry technology that layers thousands of high-resolution video frames to create a clearer, more accurate model than is provided by traditional photogrammetry, which relies on only still images. SkyeBrowse's video capture means the drone does not need to slow down to take pictures, resulting in significantly quicker capture time – 50 acres can be mapped in only 5 minutes. SkyeBrowse models also finish processing in only 10 minutes, rather than the hours required by traditional photogrammetry. https://dronelife.com/2022/02/28/videogrammetry-startup-skyebrowse-raises-2-3-million-seed-round-and-team-grows-from-4-to-24/

Elsight Delivers Communications for Multi-Domain Autonomous Ops Miriam McNabb February 28, 2022 By: Dawn Zoldi

Elsight, an Israeli-based company that provides artificial intelligence-enabled communications connectivity solutions is best known for its enablement of beyond visual line of sight drone operations. Its seminal product, Halo, enables much more: one-to-many drone operations, multi-domain autonomous vehicle operations and even non-vehicle related bi-directional remote operations The company continues to refine its "connection confidence" solution and has big plans for 2022.

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Here's how it works: Halo encapsulates the incoming traffic into an encrypted VPN tunnel, which is then broken into pieces. Each piece is sent through a different link, based on capacity and quality, to the Elsight cloud-service, together with redundancy. All the encrypted parts are received in the cloud service where they are re-puzzled, re-sequenced and de-duplicated, and the restored stream is forwarded to the Elsight VPN service. Any ground station in the world can then securely connect to the VPN service and communicate with all connected drones. https://dronelife.com/2022/02/28/drone-connectivity-solutions/

Physical & Virtual Avenger UAVs Demonstrate Autonomous Search & Follow

Phoebe Grinter / 28 Feb 2022

As part of the company's commitment to develop advanced unmanned autonomy, General Atomics Aeronautical Systems, Inc. (GA-ASI) used a company-owned Avenger Unmanned Aerial Vehicle and five hardware-in-the-loop synthetic Avengers to autonomously search and follow an artificially-generated adversary.

The live-virtual swarm utilized a simulated Infrared Search and Track sensor network in addition to the government-furnished CODE autonomy engine to accomplish the mission.

The live Avenger was commanded into a search mission with the five simulated Avengers during the two-hour flight over the high desert of southern California. Once the simulated adversary entered the designated search area, the team of Avengers would decide, utilizing an Artificial Intelligence / Machine Learning algorithm, which aircraft would autonomously break from the search-loiter and perform complex behaviors to show closed loop, air-to-air tactics. https://www.unmannedsystemstechnology.com/2022/02/physical-virtual-avenger-uavs-demonstrate-autonomous-search-follow/?utm_source=UST+eBrief&utm_campaign=36c4f698c5-ust-ebrief_2022-mar-1&utm_medium=email&utm_term=0_6fc3c01e8d-36c4f698c5-119747501&mc_cid=36c4f698c5&mc_eid=0d642a9d48

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NDAA-Compliant Albatross UAV Released Mike Ball / 01 Mar 2022

Applied Aeronautics has confirmed that the company's flagship Albatross UAV (unmanned aerial vehicle) is now available in an NDAA (National Defense Authorization Act)-compliant variant. Applied Aeronautics has released this latest upgrade for their long-range platform with four hours of flight time in response to a growing demand for robust, low-cost solutions from the defense community. The Albatross-US variant's critical onboard avionics, including autopilot, GPS, C2 equipment, and payloads, have all been replaced with NDAA-compliant technology.

The Albatross platform is rapidly becoming a platform of choice for a wide range of military applications, including training, simulated warfare, surveillance, asset inspection, and research and development. Applied Aeronautics has recently been awarded multiple contracts from the United States Navy and several other branches of the United States Government. The company looks to expand its footprint with this and other soon-to-be-released defense-centric offerings in the near future. https://www.unmannedsystemstechnology.com/2022/03/ndaa-compliant-variant-of-albatross-uav-released/?utm_source=UST+eBrief&utm_campaign=36c4f698c5-ust-ebrief_2022-mar-1&utm_medium=email&utm_term=0_6fc3c01e8d-36c4f698c5-119747501&mc_cid=36c4f698c5&mc_eid=0d642a9d48

Emesent Hovermap ST sets survey grade standard for autonomous LiDAR mapping March 1, 2022 Mapping and Surveying | News

Emesent today announced the launch of Hovermap ST with Emesent's new Automated Ground Control feature. Simultaneous localization and mapping (SLAM) systems have proved their value for rapid mapping of complex environments, but achieving survey grade accuracy and repeatability has been a challenge in some environments. Surveyors were faced with a compromise between fast data capture and data accuracy, depending on the job requirements.

This is no longer the case with Hovermap ST and the Automated Ground Control feature, as the feature enhances the SLAM solution to remove SLAM drift and produce survey grade,

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georeferenced point clouds. https://uasweekly.com/2022/03/01/emesent-hovermap-st-sets-survey-grade-standard-for-autonomous-lidar-mapping%EF%BF%BC/?utm_source=rss&utm_medium=rss&utm_campaign=emesent-hovermap-st-sets-survey-grade-standard-for-autonomous-lidar-mapping%25ef%25bf%25bc&utm_term=2022-03-01

MissionGO Flight Demonstrations in the Navajo Nation Highlight Essential Use Cases March 1, 2022 News

MissionGO, a leader in unmanned aircraft systems production and operations, was invited by the Navajo Nation Office of the President and Vice President, and mobile healthcare company ZappCare, to showcase how MissionGO's unmanned aircraft delivery service can be used to transport medical supplies and other essential items to people living in the most remote areas of the Navajo Nation.

The four flight demonstrations, named by the Navajo Nation as "Healing Eagle Feather", took place in Window Rock, Az. on Saturday, Jan. 22, 2022. Each flight made a unique cargo delivery to highlight broad customer use cases: 1) pharmaceutical medical cargo which might be delivered by Navajo healthcare providers of insulin, an inhaler, vitamins and hypertension medication; 2) healthy, fresh produce including carrots, zucchini, bananas and apples, and a locally prepared meal; 3) an emergency kit which might be delivered by Navajo first responders with water, a flashlight and batteries, emergency blanket, MRE and a satellite phone; and 4) medication for livestock. https://uasweekly.com/2022/03/01/missiongo-flight-demonstrations-in-the-navajo-nation-highlight-essential-use-cases-for-deliveries-via-unmanned-aircraft/?utm_source=rss&utm_medium=rss&utm_campaign=missiongo-flight-demonstrations-in-the-navajo-nation-highlight-essential-use-cases-for-deliveries-via-unmanned-aircraft&utm_term=2022-03-01

2Mar22

Scottish company invents first hydraulic motor heavy-lift drone Bruce Crumley - Mar. 1st 2022

Edinburgh company Flowcopter's innovation using hydraulic motors to regulate rotor spin has produced a drone it says

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can fly up to six hours over distances of 560 miles carrying payloads of up to 330 pounds on a single, quickly refilled tank of gas.

It says it has solved the problem of gas motors being unable to react to satisfy the frequent and rapidly changing speed spinning rotors need to keep UAVs stable and aloft. The company has paired certified combustion engines with Digital Displacement pumps, which feed into the drone's hydraulic motors that adjust propeller rotation as needed.

"We take the proven benefits Digital Displacement® transmission offers; significantly lighter, more robust, and lower cost than an equivalent pure electric transmission," the company says. "We combine this with a light aircraft certified engine. Our solution is a platform that offers significantly more capability than any large drone on the market today, or in the near future."

Flowcopter says it came up with the idea from the UK Royal National Lifeboat Institution's call to developers to design drones capable of accompanying boats on search and rescue missions. https://dronedj.com/2022/03/01/scottish-company-invents-first-hydraulic-motor-heavy-lift-drone/#more-77202

Wing Drone Delivery in Australia: One Drone Delivery Every 25 Seconds Miriam McNabb March 01, 2022 by DRONELIFE Staff Writer Ian M. Crosby

Beginning in Canberra, Wing customers are now able to order up to 250 items from Coles, one of Australia's largest supermarket chains, including everything from bread, fresh produce, snacks, meals, health care items, kitchen essentials, and even toilet paper, all available to be delivered by drone in minutes. Customers can simply select what they need when they need it and have it delivered to their front door by drone.

Drone delivery has become increasingly integrated into the lives of Australians over the last several years. Wing completed more than 100,000 drone deliveries in Australia last year, and has already surpassed 30,000 in just the first two months of 2022. This momentum seems to be increasing, with the company recently having its busiest week ever, making more than 1,000 deliveries in a single day (that's a delivery every 25 seconds). Wing has now surpassed 200,000 commercial deliveries across its global markets. https://dronelife.com/2022/03/01/wing-drone-delivery-in-australia/

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Combat Mission Flight Test Demonstrates Manned-Unmanned Teaming from BAE Systems Jessica Reed | March 1, 2022

In conjunction with the Office of the Deputy Secretary of Defense's Strategic Capabilities Office, defense and aerospace company BAE Systems performed a successful flight test demonstrating advanced manned-unmanned teaming technology. The test took place at a Department of Defense flight test range and involved real mission sensors on a manned military fighter aircraft and multiple unmanned aerial vehicles (UAVs). Together, the UAVs autonomously executed tactics to complete a combat mission, and BAE Systems' Human Machine Interface was utilized by the aviator to monitor the progress of the mission.

The main objective of this flight test was to demonstrate "collaborative mission execution in an operationally representative environment," according to the company's announcement. Vice President and General Manager of Controls and Avionics Solutions at BAE Systems, Ehtisham Siddiqui, stated: "The development of autonomous technology is crucial to protect our warfighters against emerging threats. This flight test demonstrates our team's commitment to accelerate the deployment of reliable and innovative manned-unmanned teaming solutions for mission success." https://www.aviationtoday.com/2022/03/01/combat-mission-flight-test-demonstrates-manned-unmanned-teaming-technology-bae-systems/

Rocket Lab is expanding its Wallops Island presence to launch its Neutron rocket

Christian Davenport 1 March 2022

Rocket Lab, the fast-growing rocket company, has chosen to build a second launch site at the Wallops Flight Facility on Virginia's Eastern Shore, where it would launch its Neutron rocket, a fully reusable vehicle that's designed to land back at its launch site.

Under a deal announced Monday with the state of Virginia, the company would build a 250,000-square-foot manufacturing and operations facility, which would include a launch control center, on the site. The move is another attempt to expand the facility and make it a hub for space exploration — a sort of miniature version of Florida's Cape Canaveral.

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Rocket Lab has already constructed a launchpad for its Electron rocket, a relatively diminutive vehicle at 59 feet tall that's designed to launch small satellites. The Neutron rocket is more than twice as large, 131 feet tall, and capable of hoisting batches of satellites to orbit.

Virginia Space, which operates what's called the Mid-Atlantic Regional Spaceport, would kick $30 million into the deal, and the state's Major Employment and Investment Project Approval Commission would make another $15 million available for the project.

Currently, Rocket Lab launches its Electron rocket from its facility in New Zealand. It has been waiting for approval from NASA to launch the small rocket from Wallops and hopes to get that approval soon. https://www.washingtonpost.com/technology/2022/03/01/wallops-neutron-virginia-rocket-lab/

Killing drones with Thor's hammer: Air Force eyes counter-UAS 'Mjölnir' weapon Stephen Losey Feb 28, 03:37 PM

An artist's rendering of the Air Force Research Laboratory's THOR counter-drone system, which uses bursts of intense microwaves to take down multiple small drones.

WASHINGTON — In Norse mythology, the thunder god Thor used his legendary hammer Mjölnir to slay giants. In the "Avengers" films, it was wielded by superheroes to battle the evil Thanos.

But the U.S. Air Force is now working on its own Mjölnir, one it hopes will prove to be a revolutionary drone killer.

The Air Force Research Laboratory said Friday it has awarded a $26 million contract to Leidos to build a prototype system by that name that will zap small unmanned aerial systems with high-power microwaves and disable them. Mjölnir will be built on technology demonstrated in recent years by its Tactical High Power Operational Responder, or THOR, program.

Work on the project will begin at Leidos' Albuquerque facilities this spring, and AFRL wants to have a prototype delivered in 2023. https://www.airforcetimes.com/air/2022/02/28/killing-drones-with-thors-hammer-air-force-eyes-counter-uas-mjolnir-weapon/

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Dufour Aerospace Aims to Compete with Medevac Helicopters Thom Patterson

March 1, 2022

Medevac helicopter pilots are all too aware of the challenges involved in their missions. They often must land and take off from areas not intended for use as heliports, including parking lots, farmland, and empty side streets.

They also must fly very low—maintaining altitudes under 1,000 feet, where dangerous infrastructure, such as power lines, light poles, antenna towers, and trees can get in the way.

Driven by increasing demand for air ambulance services, Dufour Aerospace is developing an electric vertical takeoff and landing (eVTOL) aircraft specifically for medevac and emergency medical services to treat, evacuate, or rescue critically ill or injured patients.

Dufour's eVTOL—dubbed Aero3—will not have traditional tail rotors, nor helicopter blades. Its six smaller proprotors will be attached to wings that tilt upward to provide vertical lift during takeoff and landing. Aero3 is designed to take off and land in unorthodox areas such as city streets and highways—and is less expensive to operate than helicopters, according to Dufour. https://www.flyingmag.com/dufour-aerospace-aims-to-compete-with-medevac-helicopters/

Swoop Aero drones deliver ultra-cold Pfizer COVID-19 vaccines in Malawi Bruce Crumley - Mar. 2nd 2022

Australian air logistics and drone delivery specialist Swoop Aero has been involved in drone deliveries in Malawi since November 2019, and its success in handling Pfizer vaccines representing an additional level of sophistication in its network. Although those shots have been transported in similar medical transport structures elsewhere in Africa, respect of the ultra-cold requisites was a first in Malawi, one of the poorest and underserved nations on the planet.

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Use of UAVs in medical transport in Malawi has brought care to remote places and people who previously had limited or no access to it. In its nearly 2.5 years of healthcare drone deliveries in Malawi, Aero Swoop has operated over 4,500, including over 95,100 doses of antibiotics and 24,400 of vaccines, in addition to the new Pfizer jabs.

Assuring it can maintain the ultra-cold supply chain requirements means Aero Swoop can increase its service to isolated locales in southern Malawi, which have already received 17,280 COVID-19 vaccine doses by companies like AstraZeneca and Johnson and Johnson. Swoop Aero had previously mastered cold chain logistics in transporting Ebola vaccines in the Democratic Republic of Congo, where it has also been active in healthcare drone deliveries. https://dronedj.com/2022/03/02/swoop-aero-drones-deliver-ultra-cold-pfizer-covid-19-vaccines-in-malawi/#more-77218

Cal Poly students learn drone piloting for elephant seal census Bruce Crumley - Mar. 2nd 2022

The group of professors, graduate, and undergrad students at Central California's Cal Poly are deploying their drones above seven different regional beaches to take an improved gander at residing elephant seals. A main objective in the Vertebrate Integrative Physiology's Lab and Field effort will be to get an accurate count of the pinnipeds, which can amass in preferred spots from anywhere from 200 to over 1,000 individuals. Those census missions will be flown while the creatures are ashore for their mating season, which will wind up later this month.

Though the annual counting project has existed since 2017, this is the first time the Cal Poly students will be turning to UAVs to facilitate the task. In addition to producing more precise numbers than previous eyeballing methods, the aerial technique is also less intrusive, and therefore less likely to provoke reaction from the mammals that human presence can.

Because the flights are part of a formal venture, students had to study and pass Federal Aviation Administration Part 107 certification. They then had to demonstrate to State Park authorities that both they and their drones were safe and reliable to fly above unsuspecting elephant seals. https://dronedj.com/2022/03/02/cal-poly-students-learn-drone-piloting-for-elephant-seal-census/#more-77262

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3Mar22

NORTH CAROLINA DRONE DELIVERY DEAL ENABLES ZIPLINE'S U.S. EXPANSION

February 21, 2022 Sally French

Magellan Rx Management, which is the full-service pharmacy benefits management division of Magellan Health, Inc., and drone delivery company Zipline in February announced a partnership to deliver prescription medications to patients' homes in select areas around North Carolina via drone. For now, flights are set to originate out of Zipline's distribution center in Kannapolis, North Carolina and will be able to deliver items within a 50-mile radius from the launch point.

Deliveries are likely set to begin sometime in 2022; Zipline is mostly just waiting on approvals from the Federal Aviation Administration (most drone deliveries need Part 107 exemption waivers for operations such as flying beyond visual line of sight).

And given the nature of the items being delivered, that will make Magellan Rx the first pharmacy benefits manager to deliver specialty and traditional medications through Zipline, as opposed to more generic medical supplies, as we've largely seen being delivered by drone to date.

The news is set to grow the ever-expanding Zipline drone delivery empire, which to date has flown more than 16 million miles, completed over 235,000 commercial deliveries, and will soon operate in five countries. https://www.thedronegirl.com/2022/03/03/north-carolina-zipline/

FAA Grants Censys Technologies and Soaring Eagle Technologies 12-Mile BVLOS Waiver Scott Howe

Earlier this month, the Federal Aviation Administration (FAA) awarded Censys Technologies and Soaring Eagle Technologies a Beyond Visual Line of Sight (BVLOS) waiver that covers a 12-mile commercial distance, the longest distance approved by the FAA for such inspection missions.

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Will Paden, president of Soaring Eagle Technologies, told Commercial UAV News that the waiver will be used to inspect transmission power lines. The extended distance will help lower the cost of these data acquisition operations.

In addition, Paden asserted, the waiver will lead to reductions in the impact of these operations on the environment. “Not only is the data more comprehensive, but the unmanned vehicles are also greener technologies because they do not leave the carbon footprint of helicopters. The UAS are also safer—because the pilots operating the drones are certified experts.”

Over the past three years, Censys and Soaring Eagle have worked with the FAA to build a reputable safety case using Iris Automation’s advanced detect-and-avoid technology system. The firms have completed thousands of flights. “Some of those operations included more than 50 miles of transmission patrol in a day with a single aircraft.
https://www.commercialuavnews.com/faa-grants-censys-technologies-and-soaring-eagle-technologies-12-mile-bvlos-waiver?mkt_tok=NzU2LUZXSi0wNjEAAAGC8CO26gmZjAi5shaLOF1VZDfM9nI0V28nT3Wb3dShDfp2iGiHZ_YWMKh0fVM251UTRoDYCLonKyenqkzG2PfRekZG7jV2ZSZJgb_WrKzxJspYRA

General Atomics Aeronautical Systems announces its newest UAS platform: Gambit March 3, 2022 Military

Gambit is an Autonomous Collaborative Platform designed through digital engineering to speed time to market and lower acquisition cost, and it will deliver an extended and enhanced sensing capability. The jet-powered platform is being built for air dominance and will heavily leverage advances in artificial intelligence and autonomous systems. Working alongside human-piloted aircraft, Gambit will enable pilots to see deeper into hostile airspace, detect threats first, and provide time and space for critical decisions and actions.

Designed as an advanced concept aircraft, Gambit will use AI and autonomy to complete a variety of tasks without being prompted by an operator. GA-ASI’s software and integration systems will support detection and analysis, and provide users with the highest quality intelligence, surveillance, and reconnaissance ever possible from an unmanned aircraft.
https://uasweekly.com/2022/03/03/general-atomics-aeronautical-systems-announces-its-newest-uas-platform-gambit/?utm_source=rss&utm_medium=rss&utm_campaign=general-atomics-aeronautical-systems-announces-its-newest-uas-platform-gambit&utm_term=2022-03-03

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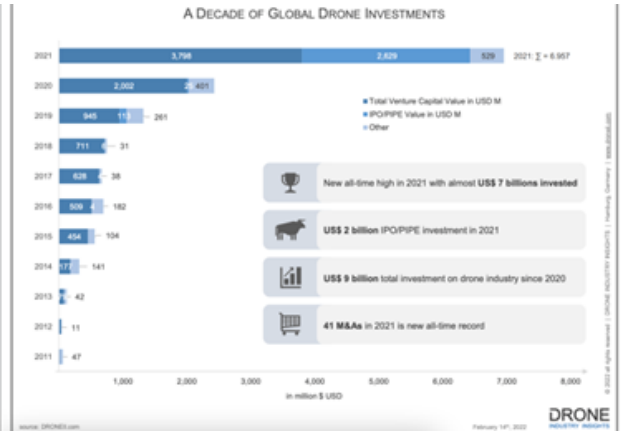
4Mar22

RECORD 2021 DRONE INVESTMENT NEARLY TRIPLES 2020'S RECORD-BREAKING FIGURE February 27, 2022 Sally French



2021 was a record-breaking year for the drone industry, and it follows a history of records being broken in terms of drone industry investment every year since 2013. Yet perhaps what's most impressive about the 2021 drone investment figures: they nearly tripled the investment dollars that came out of an already record-breaking 2020.

That's according to the annual Drone Investments Database German-based drone analytics and research group Drone Industry Insights. Their data tracked 199 investment deals involving a drone company in 2021, amounting to nearly $7 billion in combined value. In contrast, 2020 saw a then-record of $2.4 billion in drone investment deals.

Most of the 2021 drone investment dollars went to hardware. Hardware-focused drone companies took in a combined $5 billion in investor dollars, which is double last year's figure. Drone service companies received $1 billion in 2021, a massive increase from the $160 million they brought in 2020. Software-focused drone companies took in $639 million. While a relatively small piece of the investment puzzle as UTM companies took in just $38 million, that's a nearly 3x increase (up from $13 million in 2020).

Beta Technologies raised the highest amount of money in terms of venture capital investments in 2021, taking in more than $511 million over the year. The 300-person privately held company headquartered in Burlington, Vermont is developing electric vertical take-off and landing aircraft for the cargo and logistics industry.

The highest-grossing single Private Investment in Public Equity (PIPE) deal belongs to Archer, which took in $857.6 million as part of its business combination SPAC deal with Atlas Crest Investment Corp. Archer is a Palo Alto-based company working on sustainable air mobility to transport people around cities via an electric vertical takeoff and landing aircraft.
https://www.thedronegirl.com/2022/03/04/record-2021-drone-investment-nearly-triples-2020s-record-breaking-figure/

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