UAS and SmallSat Weekly News

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25Feb23

UK county with 1,500 bridges trialing drones to modernize inspections Ishveena Singh - Feb. 24th 2023

Worcestershire County in the UK has started trialing high-tech drones fitted with cameras to carry out bridge inspections. The county is home to around 1,500 bridge structures.

According to the Worcestershire County Council, innovative bridge inspections are being carried out in partnership with contractors Jacobs and Ringway. Using drones is helping the county to thoroughly inspect bridge structures in better, safer, more cost-effective, and recordable ways.

The first bridge inspection of its kind took place earlier this month at Mildenham canal bridge in Claines using a DJI M300 RTK drone. Equipped with a next-gen collision avoidance system and featuring an AI-powered Spot Check feature for long-term change detection, the M300 is considered the gold standard in asset management and inspections.

In Worcestershire County, the drone is operated by a dedicated professional pilot, while the camera payload is controlled by a bridge inspector so they can focus on any areas of interest easily. By using the drone in areas where access would usually be very difficult to reach, such as over water or at height, the risk to inspectors is minimized, and the inspection can be carried out effectively. https://dronedj.com/2023/02/24/uk-bridge-inspection-dji-drone/

Robotican's hybrid drone Rooster helps Spanish Army scan and clear building during drill Ishveena Singh - Feb. 24th 2023

Israeli drone manufacturer Robotican says its hybrid drone Rooster has successfully performed a building scan-and-clear mission for the Spanish Army during a ground drill that simulated a hostile urban environment.

During a recent military exercise in Toledo, the Spanish Armed Forces executed ground drills against enemy positions in a building. The idea was to scan and clear the building as part of a breaching maneuver to penetrate the compound while

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keeping the troops out of harm's way. This is where Roboticon's hybrid drone Rooster came into the picture as a tool for gathering real-time videos for intelligence assessment.

Rooster is a semi-autonomous hybrid system that rolls like a robot and flies like a drone. It has been designed especially for indoor and underground reconnaissance missions.

During the recent exercise, while the military team physically secured the bottom floor, the Rooster drone controlled by a Robotican operator located 2 km away, scanned the upper floors and relayed real-time intelligence to the forces on the ground.

In a second scenario, the team deployed the Rooster through a hole in the building's roof and scanned the building while the company waited for the signal to begin its assault.
https://dronedj.com/2023/02/24/robotican-hybrid-drone-rooster/#more-91168

Draganfly adds Vermeer's AI-enhanced VPS sensor to Commander 3XL drones

Bruce Crumley - Feb. 24th 2023

Canadian high-performance UAV producer Draganfly is moving to make further inroads with defense and security clients by partnering with specialized sensor and artificial intelligence solution provider Vermeer, whose visual positioning system (VPS) will be integrated into Commander 3XL drones.

The objective in the pairing is to provide Draganfly access to NYC-based Vermeer's military and government clients, while offering its own Commander 3XL drone customers the benefit of VPS sensor and software capabilities. Those include using artificial intelligence and artificial reality applications that permit aircraft and robotic ground vehicles to determine their exact location while operating in contested, spoofed, and GPS-denied environments.

The VPS system is used in pre-planning missions. It then takes over once communication links to UAVs have become too weak to function or are jammed or otherwise disrupted by outside actors. Once that happens, the unit provides the craft its own positioning data to navigate with by comparing the video feed from the VPS payload with the 3D map of terrain to be overflown, which were previously loaded onboard.

That entirely synthetic recreation of the flight path entered before the flight allows drones to continue their intelligence, surveillance, or reconnaissance missions on their own until communication links are restored, or they return home safely to operators.

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https://dronedj.com/2023/02/24/draganfly-adds-vermeers-ai-enhanced-vps-sensor-to-commander-3xl-drones/#more-91160

Iris Automation and VOTIX Join Forces to Offer Safe BVLOS Operations February 23, 2023 News

VOTIX, a drone automation technology leader, has announced a strategic partnership with Iris Automation, a safety avionics technology innovator, to enable safe Beyond Visual Line of Sight (BVLOS) flights. The partnership integrates Iris Automation's Casia G ground-based detect and alert system with VOTIX's cloud-based drone operating system to provide a complete picture of the operational airspace in real-time.

The Casia G system monitors the airspace and provides precise location and classification data of intruder aircraft, enabling automated conflict resolution via the VOTIX platform. VOTIX's drone-agnostic solution enables and tracks effective command and control and live video stream, including the use of cellular connectivity, integrates weather tracking and traffic management, controls operational limitations, automates fail-safe measures to increase safety, performs autonomous flights, enables precision landing, and integrates drone-in-a-box.

The solution creates a stationary perimeter of sanitized, monitored airspace without the need to add additional sensors or payload to the drone. Using patented computer vision technology, Casia G alerts the Remote Pilot in Command if a risk of collision is present and allows the drone to maneuver to safe zones. https://uasweekly.com/2023/02/23/votix-iris-automation-bvlos-drone-management/?utm_source=rss&utm_medium=rss&utm_campaign=votix-iris-automation-bvlos-drone-management&utm_term=2023-02-24

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BRINC in Turkey: Responding in Crisis Miriam McNabb February 26, 2023

BRINC Chief of Staff Andrew Coté had arrived from Turkey only hours earlier when we met at the BRINC facility in Seattle, but the former Marine brought the same calm efficiency to our interview as he had in the previous days amid the post-earthquake devastation he found in the Hatay Province, as he and Chief Pilot Chase Bailey spent four days flying during all available daylight hours to search for survivors and remains.

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BRINC's SWAT drones were created in the aftermath of the 2017 Las Vegas mass shooting – and the company has been committed to responding to emergencies ever since. The BRINC Global Rescue Network, the philanthropic arm of the organization, has donated drones and services around the world. When the news of the earthquakes in Turkey and Syria hit, CEO Blake Resnick and Coté immediately decided the BRINC LEMUR could provide value, and they would do what they could to contribute to the rescue efforts. https://dronelife.com/2023/02/26/brinc-in-turkey-responding-in-crisis/

Europe's First: DELAIR Releases C6 Class Drone, BVLOS Flight Without Specific Authorization

Miriam McNabb February 26, 2023 by DRONELIFE Staff Writer Ian M. Crosby

French drone manufacturer DELAIR has released the C6 class UX11 drone, enabling BVLOS operations across Europe without the need for specific authorization within the framework of the EASA European standard scenario STS-02. The UX11 is the first ever C6 class drone available in Europe.

10 years ago, DELAIR released the DT18, the world's first drone to obtain airworthiness certification for BVLOS flights within civil airspace (DGAC S4 Scenarios in France). The UX11 drone's C6 designation once again positions DELAIR as a pioneer in BVLOS flights and European regulation.

Able to be carried in a backpack and launched by hand, the 1.4 kg UX11 can land nearly anywhere due to its patented BTOL (Bird like Take-Off and Landing) technology. With a deployment time under 5 minutes, UX11 is intuitive and reliable and has already logged several hundred thousand kilometers BVLOS worldwide. Its C6 marking signifies its improved autonomy, with an endurance of 1h20 enabling longer range missions. Current DELAIR customers have the option of upgrading their UX11 via a retrofit to adapt the new requirements and affix the C6 marking. https://dronelife.com/2023/02/26/europes-first-delair-releases-c6-class-drone-bvlos-flight-without-specific-authorization/

"113 cities and regions plan UAM services but just 18 have UTM partners" – new survey

February 27, 2023 Philip Butterworth-Hayes

There are now 113 cities and regions with electric air taxi and advanced air mobility (AAM) services in development around the world, in 55 countries, according to the latest update to the Global Air Mobility Market Map database of programs, but only 18 of these include UAS traffic management (UTM) partners in their developing eco-systems.

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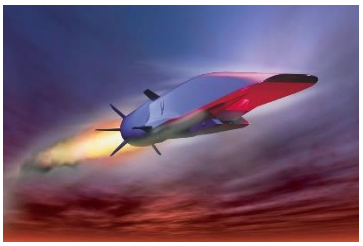
The USA has the greatest number of eVTOL/AAM city/state based programs under development. But numbers alone do not tell the whole story – Brazil (4) and Canada (4), France (3) and South Korea (2) in terms of program maturity are all in the first division of UAM/AAM industry commercialization. Dubai, Osaka and Singapore have the highest concentration of planned vertiports of any cities in the world. Most of these cities and regions plan to launch UAM/AAM services within the next five years.

"But of these, only Rio de Janeiro, Brisbane, Hong Kong, Singapore, Paris, Montreal and Vancouver have fully developed UAM/AAM eco-systems which include UTM partners and ground services," says the Global Air Mobility Market Map editor Philip Butterworth-Hayes, "while a second wave of cities – Milan, Rome, Turin, Venice, Dubai, Osaka and Tokyo have nearly completed the complement of industry partnerships needed for scalable commercial services." https://www.unmannedairspace.info/aam-uam-route-and-programme-news/113-cities-and-regions-plan-uam-services-but-just-18-have-utm-partners-new-market-survey/

UND Research on Hypersonic Vehicles Picks Up Speed



The X-51A Waverider, pictured here in an artist's concept, is an uncrewed U.S. Air Force hypersonic test vehicle.

UND, Purdue collaborate on research to improve safety and tracking of hypersonic vehicles

What are the implications of the interaction between hypersonic vehicles travelling through the atmosphere and the ice crystals that naturally form there? A pair of UND researchers have received a federal grant to study that interaction, and their results could impact the design and improve the safety of hypersonic vehicles.

Hallie Chelmo, assistant professor of Mechanical Engineering, and David Delene, research professor of Atmospheric Sciences, have been awarded $750,000 from the Office of Naval Research to study how ice crystals form in the atmosphere and how they impact hypersonic vehicles. The term "hypersonic" means flight at a speed faster than five times the speed of sound, and such vehicles include certain missiles, military vehicles, and spacecraft reentering earth's atmosphere.

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The UND researchers are joined in the project by Joseph Jewell, an assistant professor in the School of Aeronautics and Astronautics at Purdue University. Chelmo is the Principal Investigator on the project, and Delene and Jewell are working as Co-Principal Investigators.
https://www.legendaryleadersininnovation.com/public/topics/19/Autonomous

Blueflite and Spright Partner to Enhance Medical Logistics Capabilities February 27, 2023 News

Blueflite, a company offering an advanced logistics drone platform, has announced a new long-term partnership with Spright, a leading drone services provider in the United States.

Under the terms of the agreement, Spright has placed options for 40 units of Blueflite's advanced logistics drone platform, with an initial four units to be delivered over the coming months. In addition, Spright will integrate Blueflite's cloud-based drone operations and productivity tool into their fleet, allowing for end-to-end automation, data services, and full integration with existing systems.

Spright, a company that operates across the globe to provide timely access to critical medical resources, will use Blueflite's drones to extend care to those in need.

Blueflite's patented drone platform was designed specifically for logistics missions and offers several advantages for Spright's mission profile. The unique hardware design features vectored thrust, allowing for complex flight mission profiles and operating in challenging environments. Additionally, the platform features an enclosed payload bay with multiple access points to protect sensitive cargo like medicine, specimens, and life-saving medical supplies.
https://uasweekly.com/2023/02/27/blueflite-spright-partner-for-advanced-medical-drone-logistics/?utm_source=rss&utm_medium=rss&utm_campaign=blueflite-spright-partner-for-advanced-medical-drone-logistics&utm_term=2023-02-27

XAG Drones in Vineyards Make Wine Growing Safer and Easier February 27, 2023 News

As wine grapes hit a critical stage in the Southern hemisphere, drones are changing vineyard management to make it safer, easier, and more efficient. XAG P100 Agricultural Drone, with a large payload for spraying, flew over the steep hills and into the

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vineyards of Hawke's Bay, New Zealand. In the face of climate change, it has helped wine growers control fungal diseases with less water and reduce manual labor.

Powdery mildew, a typical type of fungal disease spread by spores, is the key challenge of grape cultivation. It can attack both vines and grapes, decreasing yields and affecting the aroma of wines. Fungicides should be sprayed regularly to prevent and control powdery mildew. Warren Gibson, the manager of Bilancia Vineyard in Hawke's Bay, had trouble with how to spray safely and efficiently, and now drones from XAG become his new solution.

Dating back to the 1850s, Hawke's Bay is the oldest and second-largest wine-producing region in New Zealand. It is home to over 200 vineyards covering 4,600 hectares. As one of its boutique vineyards, Bilancia was located in the steep hillside block, where Gibson and his colleagues used to spray with a 4-wheel motorbike. https://uasweekly.com/2023/02/27/xag-drones-in-vineyards-make-wine-growing-safer-and-easier/?utm_source=rss&utm_medium=rss&utm_campaign=xag-drones-in-vineyards-make-wine-growing-safer-and-easier&utm_term=2023-02-27

Drone maker Skydio hits $2.2B valuation with $230M Series E Ishveena Singh - Feb. 27th 2023

Skydio announced Monday that it has raised $230 million in a Series E funding round at a valuation of $2.2 billion. In addition, the largest drone manufacturer in the United States has roped in public safety technology provider Axon as a key partner.

Skydio says it has witnessed 30x growth over the past three years after entering the enterprise and public sector market. The company's drones are being utilized by every branch of the US Department of Defense, over half of all US State Departments of Transportation, more than 200 public safety agencies in 47 states, and across more than 60 energy utilities. Overall, Skydio's enterprise customer base now exceeds 1,200 organizations, fueled by an environment of escalating geo-political tensions with China, the global leader in the civilian drone market.

Skydio, whose core strength is autonomy technology, has raised $562 million to date. Its Series E is led by Linse Capital, with new investors Hercules Capital and Axon also joining in. Existing investors Andreessen Horowitz, Next47, IVP, DoCoMo, NVIDIA, the Walton Family Foundation, and UP.Partners also participated in the round.

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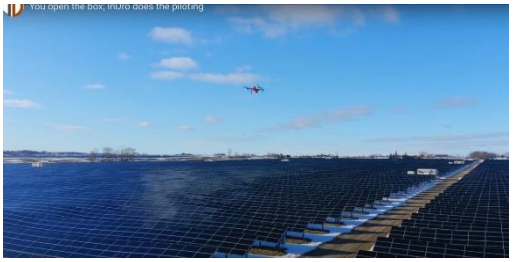
To meet this demand and support its growing customer base, Skydio has already increased its overall headcount by 40%. The drone maker has also set up new manufacturing facilities in Hayward, Calif., to achieve a 10x increase in its capacity. The company now expects to fill over 150 additional vacancies across its locations. https://dronedj.com/2023/02/27/skydio-drones-2-billion-valuation/

InDro earns FAA BVLOS waiver for US drone inspections – 'a Canadian first' Bruce Crumley - Feb. 27th 2023



Drone services and ground robotic vehicle specialist InDro Robotics has received a waiver from the Federal Aviation Administration (FAA) to operate beyond visual line of sight (BVLOS) UAV flights in the US, a first for a Canadian company according to the Toronto-based firm.

InDro says it will initially use the FAA waiver to operate BVLOS drone missions for clients in the US solar energy sector, notably inspecting their often enormous assemblies of photovoltaic panels. During similar work for customers in Canada, the company's UAVs – equipped with cameras and thermal sensors – scan infrastructure for broken, malfunction, or even merely dirty panes requiring intervention, immediately uploading that data to a cloud platform for analysis.

Its use of the FAA waiver will involve InDro shipping a drone to facilities to be inspected, then operating those BVLOS flights remotely. In doing so, the company will dispatch an on-ground collaborator to the site who will power the UAV on and serve as visual observer during the flight. . https://dronedj.com/2023/02/27/indro-earns-faa-bvlos-waiver-for-us-drone-inspections-a-canadian-first/

28Feb23

BAE Systems Designs Fighter Drone That Can Take Off Vertically Mike Cherney Feb. 28, 2023

AVALON, Australia—BAE Systems PLC unveiled a design for a large drone that can take off vertically and fly alongside manned helicopters, the latest bet on autonomous warfare as countries seek to upgrade their militaries.

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A BAE Systems Strix drone on display at the Avalon airshow in Australia.

The new system, called Strix, aims to be affordable and easy to deploy while still offering substantial range and firepower. A video animation played by BAE at the Avalon Airshow in Australia, where it announced the new aircraft and displayed a model, showed Strix taking off from the back of boats. Another video showed the drone, with wings folded, being stored in a shipping container, and then driven away on a truck.

Unmanned aerial systems have become a key focus for militaries worldwide, as a force multiplier and a way to project power over long ranges while minimizing human losses. But many of those drones, such as Turkey's Bayraktar TB2 drone that has been used effectively by Ukraine, and the longer-range MQ-9 Reaper operated by the U.S., require runways to take off and land.

"The unique capability of Strix is that it combines all the benefits of helicopters in terms of vertical takeoff and landing, but with the speed, range and payload characteristics of conventional aircraft," said Ben Hudson, the chief executive of BAE Systems Australia, the BAE unit that designed the drone. https://www.wsj.com/articles/bae-systems-designs-fighter-drone-that-can-take-off-vertically-14806cf4

SpaceX launches new Starlink 'V2 Mini' satellites into orbit Sheri Walsh FEB. 27, 2023

Feb. 27 (UPI) -- SpaceX launched 21 upgraded "V2 Mini" Starlink Internet satellites from Florida's Cape Canaveral on Monday, to boost capacity for the global broadband network.

SpaceX announced "Liftoff!" in a tweet at 6:16 p.m. EST, showing the Falcon 9 rocket lift off from pad 40 against the sunset. Nine minutes later, SpaceX followed with a tweet announcing Falcon's first stage had landed on the drone ship, called *A Shortfall of Gravitas*, stationed in the Atlantic Ocean.

"Deployment of 21 Starlink V2 Mini satellites confirmed," Space X tweeted just one hour after liftoff.

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Starlink's new satellite design, called "V2 Mini," holds "four times the communications capacity of early generations of Starlink satellites, known as Version 1.5," SpaceX said.

"This means Starlink can provide more bandwidth with increased reliability and connect millions of more people around the world with high-speed Internet," SpaceX added. https://www.upi.com/Science_News/2023/02/27/florida-spacex-launches-upgraded-v2-mini-starlink-satellites/5271677543939/

NASA Tests Autonomous Aircraft Decision Tech in Arizona Cities

Kirsten Errick Staff Reporter, Nextgov FEBRUARY 27, 2023

NASA is performing simulated testing of its autonomous aircraft decision technology in cities to improve and address challenges to airborne mobility, particularly in urban settings.

NASA's Data and Reasoning Fabric—or DRF—project "designs technology to help autonomous airborne activities safely meet their full potential for society's benefit. Its intent is to form a connected, interwoven 'fabric' of intelligence that sends aircraft specific, tailored information, wherever they are."

The technology is being tested for the first time in February and March in a simulated urban area modeled after Phoenix, Arizona. The project is intended to reduce airspace congestion and increase safety in cities, while helping to bring needed services to people. The project will help address the challenges of tall buildings, local microclimates, and high winds in a city. The DRF technology will put together data from various providers and apply artificial intelligence "to make sense of the complex and dynamic airspace."

NASA partnered with Autonomy Association International, academia, industry, government, communities, tribal nations and more than 22 cities in Maricopa, Penal, Pima and Yuma counties in Arizona. https://www.nextgov.com/emerging-tech/2023/02/nasa-tests-autonomous-aircraft-decision-tech-arizona-cities/383366/

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Skydio Funding: $230 Million to Expand U.S. Manufacturing, Hiring Miriam McNabb February 27, 2023

US drone manufacturer Skydio funding soars by $230 million for a total of over $562 million. From the Skydio funding announcement:

The $230 million Series E round brings Skydio's total funding raised to $562 million with a current valuation of over $2.2 billion. Linse Capital led the round, joined by existing investors Andreessen Horowitz, Next47, IVP, DoCoMo, NVIDIA, the Walton Family Foundation and UP.Partners. Skydio also welcomed new investors Hercules Capital and Axon, a technology leader in global public safety and a key Skydio technology partner.

Skydio has grown by 30x since it entered the market 3 years ago, based upon its US manufacturing and a groundbreaking autonomy platform. As demand in both civil and military markets increase, Skydio unveils a new 36,000 square feet manufacturing facility and expects to add 150 manufacturing jobs to the Hayward, CA site and other US locations.
https://dronelife.com/2023/02/27/skydio-funding-230-million-to-expand-u-s-manufacturing-hiring/

HENSOLDT South Africa Unveils Lightweight Airborne Surveillance and Targeting System February 28, 2023 News

HENSOLDT South Africa Launches New ARGOS-8 Airborne Electro-Optical System and Announces Collaboration with Threod Systems at IDEX 2023

HENSOLDT South Africa has announced the launch of its latest ARGOS-8 airborne electro-optical system (EOS) at the International Defence Exhibition and Conference (IDEX) in Abu Dhabi, United Arab Emirates. The ARGOS-8, a lightweight 8-inch-class EOS with a mass below 6 kg, is equipped with niche laser products and offers day and night operation for intelligence, surveillance, and reconnaissance (ISR), as well as intelligence, surveillance, target acquisition, and reconnaissance (ISTAR) missions.

HENSOLDT South Africa has collaborated with Threod Systems to develop and co-produce the ARGOS-8, which is designed to enhance the capabilities of smaller tactical unmanned aerial vehicle systems. The two companies leveraged complementary technologies to bring the

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ARGOS-8 to market quickly and efficiently. https://uasweekly.com/2023/02/28/hensoldt-south-africa-launches-new-argos-8-airborne-electro-optical-system-and-announces-collaboration-with-threod-systems-at-idex-2023/?utm_source=rss&utm_medium=rss&utm_campaign=hensoldt-south-africa-launches-new-argos-8-airborne-electro-optical-system-and-announces-collaboration-with-threod-systems-at-idex-2023&utm_term=2023-02-28

How Hampton Virginia is leading developments in unmanned and autonomous flight

WEB TEAM ON 8TH FEBRUARY 2023 by Dave Hughes

Research agencies and companies in the region include NASA's Langley Research Center, the Longbow Group and Raytheon, all of which are working to prove how civil eVTOL aircraft and autonomous drones can operate safely in complex airspace.

NASA's Langley Research Center in Hampton does more drone flight testing than the rest of the research agency combined. The Longbow Group is an aviation consultancy which has set up a UAS (unmanned aerial system) R&D Technology Centre at nearby Fort Monroe. The city of Hampton also funds a technology business accelerator called Reaktor for UAS startups that works with local universities in the non-profit National Institute of Aerospace.

The area is also home to a growing number of UAS businesses including the Advanced Aircraft Company, Daniel H. Wagner Associates, DroneUp, and Hush Aerospace. DroneUp was founded at Virginia Beach in 2016 and last year started working with retailer Walmart to provide commercial drone delivery operations.

Longbow plans to deploy UAS traffic management (UTM) over downtown Hampton and develop autonomous Beyond Visual Line of Sight (BVLOS) routes for first responders and regional air logistics over the Southern Chesapeake Bay. The company plans to one day fly drones to the Eastern Shore of Virginia to Cape Charles, around 25 miles away from Hampton and to NASA's Wallops Island rocket launch facility. The state of Virginia has also built a $6 million UAS runway at Wallops for US Government and commercial users to discretely test UAS at a secure federal facility. The runway is below 75 square nautical miles of restricted airspace available for flight testing 24/7. https://www.aerospacetestinginternational.com/features/how-hampton-virginia-is-leading-developments-in-unmanned-and-autonomous-flight.html

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How one agency helps Candy Crush, the NBA, and others put their brands in the sky Alyssa Meyers February 23, 2023

Pixis Drones

It's a bird… It's a plane… It's an ad.

Last June, the NBA appeared in the New York City skyline to hype up its draft. In November, Candy Crush put on a light show over the Hudson to commemorate its 10-year anniversary. That same month, Paris Hilton celebrated her wedding anniversary and the debut of her company, 11:11 Media, by lighting up the sky above the Santa Monica Pier.

Thank drones for bringing those brands to the sky—or, more specifically, Pixis Drones, an agency that creates what it describes as "branded aerial art displays."

Despite some big-name clients, drone advertising is still in its "infancy," Pixis General Manager Jeff Kaplan told Marketing Brew, so Pixis is still working to educate marketers on what's possible before they give it a try. Plus, there are other hurdles to clear before liftoff, including creative and technical planning, FAA approvals, and the court of public opinion.
https://www.marketingbrew.com/stories/2023/02/23/how-one-agency-helps-brands-like-candy-crush-and-the-nba-put-their-brands-in-the-sky?cid=30638454.35783&mid=76b80571c466000d5f998641e426e4a3&utm_campaign=mkb&utm_medium=newsletter&_hsmi=248120980&_hsenc=p2ANqtz-9cj_aLdTwgRbjRtGIsFYUiaER0nXylIQG_KCAAcj78YSfuEArNILjkzspCPhZNfqaRgaeIWmp0G66AVixoxz9Taxupfg&utm_source=morning_brew

1Mar23

SpaceX Shares Details of Higher Bandwidth V2 Mini Starlink Satellites Rachel Jewett | February 28, 2023

SpaceX shared details of mini second-generation Starlink satellites on Feb. 26, calling them "V2 Minis," saying the new technology will provide more bandwidth and increased reliability.

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A stack of V2 Mini Starlink satellites ready for launch (Photo: SpaceX)

This announcement came after the FCC recently gave SpaceX partial approval for the second generation of the constellation, approving 7,500 satellites, with additional constraints on the system.

New technologies onboard include a more powerful phased array antenna and use E-band spectrum for backhaul. The E-band development allows Starlink to provide around four times more capacity per satellite than earlier versions, SpaceX said.

In addition, the satellites have new argon Hall thrusters for on-orbit maneuvering. These new thrusters were developed by SpaceX engineers and have never been operated in space before. The thrusters offer 170 mN of thrust, which SpaceX said is 2.4 times the thrust and 1.5 times the specific impulse of thrusters on first generation Starlink satellites.
https://www.aviationtoday.com/2023/02/28/spacex-shares-details-higher-bandwidth-v2-mini-starlink-satellites/

Inside the Drone Mission to Study Volcanos: Autel's EVO Lite+ on Irazú Miriam McNabb February 28, 2023 by DRONELIFE Staff Writer Ian M. Crosby

An international team of scientists has deployed an Autel Robotics drone to monitor activities on Costa Rica's Irazú Volcano.

Operable in conditions with up to 37 knot winds, the EVO Lite+ flew safely through 17 knots. The drone was operated by certified FAA Part 107 Remote Pilot Ian Godfrey, who is SINAC Certified for UAS (Unmanned Aircraft System) operations in National Parks.

The scientific team employed the drone to record various elements of the Main Crater, such as lake water levels, areas of mineralization or crystallization, potential vents degassing volcanic emissions, and the absence of subaquatic fumaroles. The team also evaluated areas for risk of future rock falls and erosion or cracking within the volcano's main crater. The EVO Lite+ proved its ability to generate both 2-D maps and 3-D models of volcanic geological features, and the team continues to leverage the drone in the field. https://dronelife.com/2023/02/28/inside-the-drone-mission-to-study-volcanos-autels-evo-lite-on-irazu/

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Public Safety Drone Review, Tuesday March 7: BRINC Drones, Airobotics, and More Miriam McNabb February 28, 2023

Don't miss the **March 7** episode of the Public Safety Drone Review, presented by DRONERESPONDERS and DRONELIFE, with guests from BRINC Drones and Airobotics! The *Public Safety Drone Review* is a new monthly resource for the public safety community. This free event will be held live on March 7, 2023 at 3pm EST: and on the first Tuesday afternoon of each month going forward. Register here for the live webcast or watch later on the DRONELIFE TV YouTube channel.

This month, hosts Timothy Martin and Miriam McNabb review the latest news stories and speak with Blake Resnick, CEO of BRINC Drones about their newest tool for first responders and public safety, announced on March 2; and Eric Brock, CEO of Ondas Holdings, about Airobotics' deployment of automated drones for first response in Dubai.
https://dronelife.com/2023/02/28/public-safety-drone-review-tuesday-march-7-brinc-drones-airobotics-and-more/

Meet Australia's Home-Grown 'STRIX' VTOL Combat Drone Concept EMMA HELFRICH, ROY CHOO FEB 28, 2023 THE WAR ZONE

BAE Systems Australia has unveiled a mock-up of the country's first domestically designed vertical take-off and landing (VTOL) drone with both strike and intelligence-gathering capabilities, and its name is STRIX.

The STRIX mock-up was put on display Tuesday at the BAE Systems Australia booth during this year's Avalon Airshow in Geelong, Australia, which will continue through Sunday. Joining BAE Systems Australia in STRIX's development has been Perth-based aeronautics company Innovaero which contributed its experience in designing and rapid prototyping of aeronautical products for the Australian market. BAE Australia is said to have leveraged its own autonomous platform portfolio and its vehicle management system (VMS) technology, which currently guides the MQ-28 Ghost Bat drone for the Royal Australian Air Force's autonomy program.

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The War Zone contributor Roy Choo was on the ground at the Avalon Airshow and learned that STRIX was conceptualized in mid-2022. This was at about the same time that the Turkish Bayraktar TB2 had been gaining notoriety in the Ukraine conflict. Choo says that STRIX's publicity brochures highlighted how TB2 distinguished itself by combining an inexpensive platform with the ability to strike at range. https://www.thedrive.com/the-war-zone/meet-australias-home-grown-strix-vtol-combat-drone-concept

Ukraine reportedly assembles half of its 1,000 FPV drone fleet for attacking Russian targets Bruce Crumley - Mar. 1st 2023

In what may well be more bad news for soldiers in the renewed Russian offensive in eastern Ukraine, a video has materialized indicating just how quickly authorities are apparently assembling the fleet of 1,000 FPV drones said they'd obtain for kamikaze strikes on invading troops.

According to Suchominus's voice-over, the footage shows about 420 of the 1,000 FPV drones that a specialized Ukraine military intelligence unit called Kryla said it planned to build or buy for kamikaze strikes on Russian targets. In doing so in mid-January, Kryla appealed for backers to donate funds for use in procuring that fleet of single-flight UAVs.

Suchominus notes that in addition to the 420 FPV drones featured in the footage, 100 more have been prepared for delivery to Ukraine units defending against the renewed Russian offensive – each one purportedly only costing just $200 to build or obtain from third parties. https://dronedj.com/2023/03/01/ukraine-reportedly-assembles-half-of-its-1000-fpv-drone-fleet-for-attacking-russian-targets-video/

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Collecting Radiation Data with Drones: Flyability Collaborates with Mirion Technologies Miriam McNabb March 01, 2023 by DRONELIFE Staff Writer Ian M. Crosby

Swiss drone company Flyability has announced its collaboration with Mirion Technologies, a leading provider of radiation detection, measurement, analysis, and monitoring solutions. The

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new agreement will see the integration of the Mirion RDS-32™ radiation survey meter into Flyability's Elios 3 indoor drone, enabling nuclear operators to collect accurate radiation data remotely and allowing nuclear personnel to remain safely outside of irradiated areas during data collection. This data will be available both during flight and afterward, for post-processing.

Drones for Nuclear Power: Flyability Collaborates with Mirion Technologies to Support Operators

To test the use of the Mirion radiation survey meter within the Elios 3 drone, Flyability partnered with the Idaho Environmental Coalition (IEC), along with multiple Energy companies across the U.S. and Europe. The IEC mission tested the collection of LiDAR and radiation data within a storage vault made to house radioactive waste. The successful operation supplied the necessary data to move forward with detailed planning for waste removal.
https://dronelife.com/2023/03/01/collecting-radiation-data-with-drones-flyability-collaborates-with-mirion-technologies/

India Moves Closer to Approving Purchase of Armed Drones from the U.S. Rajesh Roy March 1, 2023

NEW DELHI—India is close to approving a deal to buy high-altitude armed drones from the U.S. as it seeks to counter a more-assertive Chinese stance on the countries' contested Himalayan border, people with knowledge of the matter said.

The purchase of the advanced MQ-9B drones—equipped with antisubmarine warfare capabilities as well as land-attack and antiship missiles—would also boost the Indian navy's surveillance efforts in the Indian Ocean, where China's naval presence has grown.

The deal would need U.S. approval and signing an agreement between the governments could take months. Such an agreement would make India the first country that isn't a U.S. treaty ally to buy the armed version of the drones.

The country's security forces have operated two MQ-9B drones of a basic version since leasing them from the U.S. in 2020 after a deadly border confrontation with China. The aircraft have

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provided information about China's troop and infrastructure buildup and played a critical role in helping India plan its counter moves.

The leased drones have clocked a total of 10,000 hours in the past two years, flying as far as the Gulf of Aden and the South China Sea, the official said. https://www.wsj.com/articles/india-moves-closer-to-approving-purchase-of-armed-drones-from-the-u-s-de1910b3

U.S. Army Selects AeroVironment JUMP 20 UAS to Enter Future Tactical Program March 2, 2023 News

AeroVironment, Inc. , a global leader in intelligent, multi-domain robotic systems, today announced it was selected by the United States Army on Feb. 28, 2023, to move forward in the Future Tactical Unmanned Aircraft System (FTUAS) program.

AeroVironment's JUMP 20 will compete with several other vendors in the FTUAS Increment 2 multi-phased effort which will allow the Army to select the best system for its needs. Ultimately, FTUAS Increment 2 aircraft will be fielded to Brigade Combat Teams throughout the Army, replacing the long-serving RQ-7B Shadow UAS.

During the early stages of what would become the U.S. Army's FTUAS program, AeroVironment's JUMP 20 demonstrated superior competitive performance and was awarded the FTUAS Increment 1 contract to develop a prototype system to field to one Brigade Combat Team (BCT). Its success throughout the demonstrations led to AeroVironment's contract award for FTUAS Increment 0, in which the U.S. Army fielded the JUMP 20 into an additional Army BCT within the United States Army Europe. AeroVironment is the only company awarded the FTUAS contract for all three program increments. https://uasweekly.com/2023/03/02/u-s-army-selects-aerovironment-jump-20-uas-to-enter-future-tactical-ftuas-program-increment-2/?utm_source=rss&utm_medium=rss&utm_campaign=u-s-army-selects-aerovironment-jump-20-uas-to-enter-future-tactical-ftuas-program-increment-2&utm_term=2023-03-02

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The SWAT Team Drones Saving Lives: BRINC Lemur, from the Floor at AUVSI Xponential

Miriam McNabb August 23, 2021

One of the best parts of going to a large drone show like AUVSI Xponential is having the opportunity to look at the amazing technology on the exhibit floor – like the SWAT team drones produced by Las Vegas-based BRINC drones.

BRINC Drones VP of Sales and Marketing Brett Kanda took the time to show me the new Lemur S: and I waylaid a BRINC customer walking by to get his view on why the Lemur is life-saving tech for SWAT teams.

The Lemur – and the Lemur S, soft-launched at AUVSI Xponential – is a drone decked out with features that make it ideal for the purpose. It's an indoor tactical system meant to search structures and keep public safety, first responders, and suspects safe. During a SWAT mission, the Lemur, equipped with a specialized glass breaker, can break a window and enter the building. Once inside, the Lemur can explore (without GPS) room by room, providing both eyes and ears to the operators. When the Lemur makes contact with a suspect, it can perch – on a bed, bureau, table, or wherever – for up to 10 hours, helping SWAT teams establish 2-way communication with the suspect. That 2-way communication is critical, Brett explains. "The data is remarkable about how much better the outcome is when you are able to establish two-way communication with a suspect – you have a great opportunity for a safe resolution," he says. https://dronelife.com/2021/08/23/the-swat-team-drones-saving-lives-brinc-lemur/

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