UAS and SmallSat Weekly News

Contents

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IAI, BlueBird Actively Seeking US Partner to Market VTOL Drones to Pentagon

ARIE EGOZI August 05, 2021

The IAI/BlueBird ThunderB VTOL unmanned system.

WASHINGTON: Israel Aerospace Industries (IAI) and Israeli UAV company BlueBird are targeting the US market for their advanced VTOL UAV, and are seeking an American industrial partner to help them gain traction in the US.

IAI, which last year acquired a 50 percent stake in BlueBird, intends to offer a design with an enhanced max takeoff weight. Such a prototype is now undergoing advanced development.

This isn't the first time IAI has tried to sell a VTOL drone abroad. In 2017, they appeared close to a deal with the South Korean military, but it never resulted in a contract. The hope for executives now is that growing interest in the technology will increase their chances.

According to Nir Salomon head of the US desk and mergers & acquisitions in IAI's military aircraft group, IAI and BlueBird are hoping to find a medium size American company that sees the potential demand for its technology. "We are talking to some potential partners that realize the advantage we bring to this market with our combat proven systems," he told Breaking Defense. https://breakingdefense.com/2021/08/iai-bluebird-actively-seeking-us-partner-to-market-vtol-drones-to-pentagon/

teTra Aviation Mk-5, Tokyo

Founded in 2018, Tetra Aviation Co., Ltd. is an electric vertical takeoff and landing aircraft start-up, headquartered in Bunkyo-ku, Tokyo, Japan, with the goal of designing, manufacturing, and selling eVTOL aircraft for Urban Air Mobility.

teTra Aviation was one of the Phase 1 winners from the GoFly competition, sponsored by Boeing (USA), and won the $100,000 Disruptor Award offered by airplane engine manufacturer, Pratt & Whitney.

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The Mk-5 eVTOL aircraft holds one passenger, its cruise speed is 162 mph, has a range of 162 m and a flight time of one hour. The aircraft has 33 propellers, 33 electric motors, tandem wings (the rear wing sports winglets), has one vertical tail stabilizer (no rear horizontal stabilizers) and tricycle fixed wheeled landing gear.

For vertical lift, the aircraft uses 32 fixed propellers and for forward flight, the aircraft has one rear pusher propeller. The advantages of this aircraft are reduced complexity because there are not tilt-propellers and has a longer range than pure multi-copter aircraft due to tandem wings and a pusher propeller. https://devtol.vtol.org/tetra-aviation-mk-5

Canada's RPV Aviation obtains BVLOS permission for FIXAR drone flights Scott Simmie - Aug. 6, 2021

Canadian drone service provider/consultant RPV Aviation has obtained a Special Flight Operations Certificate for Beyond Visual Line of Sight (BVLOS) flights using the FIXAR 007 drone.

The Latvian-based company produces a unique fixed-wing, Vertical Take-off and Landing drone. Despite the fact it can transition to efficient forward flight, its rotors remain at a fixed angle. These FIXed Angle Rotors produce the acronym that gives the company its name. RPV Aviation is the name of the operator Transport Canada has granted the SFOC for BVLOS flight.

Because of its design, the FIXAR 007 is suited for a variety of longer-range tasks that require BVLOS flight. Think infrastructure inspection, photogrammetry, small deliveries (the drone can carry a two-kilogram payload, which is 4.4 pounds). It also has a 60-kilometer range and uses its own mission planning software for autonomous flight.

While providing complete autonomy, FIXAR's UAV is the perfect tool for first responders, complex tasks such as large area photogrammetry and mapping, disaster management, last-mile deliveries to isolated regions, as well as urban planning.

This all comes as good news to Vasily Lukashov, the company's founder and CEO: We're excited to be one of the first European UAV developers to receive authorization to commercialize drones for BVLOS flights in Canada.

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There's been considerable interest in the FIXAR design. Enough, in fact, that the drone is going to be manufactured in Ontario by Volatus Aerospace. https://dronedj.com/2021/08/06/canadas-rpv-aviation-obtains-bvlos-permission-for-fixar-drone-flights/#more-64549

Tugboat company to fly drones to improve speed, safety of sea towing Bruce Crumley - Aug. 6th 2021

A Dutch company specializing in maritime vessel services has taken to the air in its effort to work faster and more safely at sea. In doing so, it has patented a system in which drones establish the physical connection between tugboats and the ships they'll tow, reducing the dangers to humans when that is done manually at close proximity.

Patented technique will fly drones to connect tugboats to towed ships

Netherlands-based Kotug has gained insights into the potential perils posed by navigating its craft close enough to larger vessels they'll be hauling so that messenger lines can be thrown by hand between them. To establish that link, tugboats must creep to within a few feet of towering ships, whose wake – not to mention surrounding sea conditions – can send their smaller assistants heaving.

Rather than approaching very close under the bow and behind the stern of bigger vessels so that towing ropes can be dropped down, Kotug will use drones to fly messenger lines to the craft tugs will tow. Once they near their target, the drones will use onboard object recognition software to identify pre-established delivery positions. The entire exchange can be carried out in a matter of minutes.

Kotug, which calls itself the first maritime services company to use drones in that way, says the technique will greatly speed the process of establishing the messenger line link. And with tugs able to remain in distant positions to the fore and aft sides of larger ships, they'll entirely avoid the potentially dangerous minutes of bobbing at the bow of larger craft, or in the chop of their propeller wake. https://dronedj.com/2021/08/06/tugboat-company-to-fly-drones-to-improve-speed-safety-of-sea-towing/#more-64563

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Air Methods Launches Spright, a New Drone Solution, Deploying Fleets of Wingcopters APPLICATION HEADLINE NEWS HEALTH GEORGINA FORD AUGUST 8, 2021

Air Methods, the nation's leading air medical service provider, announced the launch of Spright, a newly formed drone solution designed to help improve healthcare access and minimise supply challenges. Collaborating with Wingcopter, an industry-leading German drone manufacturer, Spright is creating a drone-based, healthcare-specific delivery network across the United States.

This new drone delivery network will improve access to urgently needed medical supplies for healthcare providers and the communities they serve. Air Methods will make this possible by deploying fleets of Wingcopter's new flagship delivery drone, the **Wingcopter 198**. The team at Wingcopter has the proven technology and production capacity to enable Spright to create a nationwide network built around Air Methods' existing infrastructure of more than 300 bases, serving hundreds of hospitals across 48 states in predominantly rural areas.

"The COVID-19 pandemic exacerbated some of the real challenges in our health care system, creating an opportunity to find better solutions to extend access to healthcare, especially in rural America," said **JaeLynn Williams, CEO of Air Methods**. "That is why we are doing what Air Methods does best, taking to the skies, using the latest in technology and drone innovation, delivering hope and facilitating healing with speed and efficiency that was previously unimaginable."

This fall, Spright will be kicking off this endeavor by partnering with Hutchinson Regional Medical System in Hutchinson, Kan., to launch an initial pilot project using Wingcopter's delivery drones. This project will provide a proof of concept of how this new venture can provide needed relief and certainty for medical resources in rural America.
https://www.commercialdroneprofessional.com/air-methods-launches-spright-a-new-drone-solution-deploying-fleets-of-wingcopters/

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Firefighters Use Drones and Software to Provide Crucial Disaster Relief DRONES AT WORK EMERGENCY SERVICES HEADLINE NEWS CDRONE PRO AUGUST 6, 2021

On Jun 24 2021, residents in the densely populated area of South Moravia, Czech Republic, were hit by a natural disaster uncommon on this scale in Europe, a tornado with winds of at least 219km/h (136 mph).

The devastation it caused left thousands of damaged homes behind and destroyed whole city quarters in some cases. It flipped cars over, lifting them and throwing them into trees that had managed to stay in place. It created an apocalyptic scene that was unimaginable in a region known for its wine production and unique culture.

When the incident was first reported at 7.23 pm, firefighters were immediately dispatched. From that moment on, thousands of professionals and volunteers were on hand to deal with an area of wreckage approximately 26 square kilometres (10 square miles. A total of 2,000 firefighters from all over the Czech Republic and approximately the same number of volunteers took turns to do their utmost in the affected area. The Fire Rescue Services of the Czech Republic deployed approximately 550 pieces of equipment at the scene.

This was also the first time that Czech Fire Rescue Services combined DJI's drone technology with aerial mapping software. We asked Col. David Jirous, the head of KOPIS (Operational and Information Centre) of South Moravia, to tell us more…

In the first phase, we had very little idea of the size of the affected area. Therefore, drones were used to map the terrain and create a real-time digital map of the devastated area. Thanks to drones, we have almost immediately an aerial perspective and digital which was distributed to the GINA app. This is accessed by firefighters in the field and the local command center for an accurate picture of the scene and location tracking. We had an up-to-date overview of the affected area, the amount of damage and force and resource requirements. Thanks to technology, we can react flexibly to altering situations in the field.
https://www.commercialdroneprofessional.com/firefighters-use-drones-and-software-to-provide-crucial-disaster-relief/

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Henan flood relief demonstrates special drone utility in natural disaster response

Barry He | China Daily Global | Updated: 2021-07-30

A Wing Loong 2H disaster-assistance drone is seen at an airport in Anshun, Southwest China's Guizhou province.

China's deployment of drones to assist with the disaster relief efforts in the flooded Henan province signals a new age in which drones are on the front line in the face of natural disasters. The Wing Loong 2H drone, among others, has helped provide vital communications infrastructure, transmitting signals overhead to allow those stranded on the ground by floods to access phone networks.

Drones now offer a variety of new contributions toward rescue operations unimaginable even just five years ago. The Wing Loong 2H, for example, can fly long distances, stay airborne for extended periods, and carry heavy loads. Emergency response teams in the face of climate change are often working in time-critical scenarios where the status on the ground can change from risky to deadly in a matter of minutes, with travel to an area made difficult in hazardous terrain. What is known in emergency service work as "the golden hour", rapid deployment within the first 60 minutes of any natural disaster, is crucial.

For floods, drone observations give vital information on which direction water is flowing. This is important for deciding on how best to reach and rescue trapped people. Based on water flow, it can be determined which buildings are most at risk and who should be evacuated first. Finding the best route for such evacuations is where drones are in their element to assist.
https://global.chinadaily.com.cn/a/202107/30/WS61035966a310efa1bd665756.html

The site of the Champlain Towers South partial collapse in Surfside, Florida

04 AUG 2021 NIST MARK HARRIS

When Champlain Towers South, a 12-story beachfront condominium in the Miami suburb of Surfside, partially collapsed on the night of June 24, it was a disaster that no one expected. But one team, at least, was prepared for it.

Since 2018, the National Science Foundation's Natural Hazards Reconnaissance Facility (known as the RAPID)

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has provided instrumentation, software, training, and support for research before, during, and after about 75 natural hazard and disaster events. Almost overnight, it can dispatch everything from iPads and cameras to a flock of sensor-packed drones or even a robotic hydrographic survey boat—as well as the expertise to use them.

In contrast to the public safety professionals who've deployed drones to determine the scope of the collapse and seek out survivors, the RAPID group looks for evidence of how and why buildings fall in the first place. And RAPID's mission is equally time critical.

"We are set up to rapidly enter a disaster zone and very quickly collect the data before it's cleaned up as part of rescue and recovery," says RAPID director Joe Wartman, a professor of Civil and Environmental Engineering at the University of Washington in Seattle, where RAPID is based. "In a sense, we're the Navy SEALs of disaster data collection. We're the only facility in the world that does this work." https://spectrum.ieee.org/how-the-navy-seals-of-disaster-data-collection-are-helping-the-surfside-investigation

Drones Tested for Disaster Relief Missions AKIHABARA NEWS AUGUST 3, 2021

Akihabara News (Tokyo) — Sensyn Robotics, a Tokyo-based drone firm, has collaborated with Sarabetsu village in southeastern Hokkaido on a series of tests to measure the usefulness of drones in disaster relief scenarios.

For these tests, the Sensyn Drone Hub was employed, which features automatic takeoff and landing, automatic charging, and automatic data transfer. It is designed to minimize the need for workers to intervene at each stage of the process.

An initial experiment presented a disaster scenario in which a video feed through the drones linked an operational base in Tokyo with the Sarabetsu Village Office and the simulated disaster site. The Sarabetsu Fire Department chief was impressed, commenting, “It can be used to form an initial assessment to determine how many emergency vehicles we need to prepare for local residents in the event of a disaster.” The video quality was found to be sufficient to the task at hand. http://akihabaranews.com/drones-tested-for-disaster-relief-missions/

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CHEESEHEAD Drone Project May Improve Climate Models Jason Reagan August 06, 2021

What do the Green Bay Packers and forest-scanning drones have in common? Cheeseheads. While Packer fans proudly identify with the dairy-infused moniker, a research project at the University of Wisconsin-Madison has adapted the name for a ground-breaking UAV project to improve weather forecasting by understanding how vegetation and forests influence the atmosphere.

CHEESEHEAD (Chequamegon Heterogeneous Ecosystem Energy-balance Study Enabled by a High-density Extensive Array of Detectors) aims to study interactions and feedbacks between the land surface and atmosphere and how these results can be used to optimize climate models. The result? Better carbon-emission reduction policy making.

Researchers are using Routescene's UAV LiDAR system to collect high-density, 3D point cloud data of prominent tree species in the Chequamegon-Nicolet National Forest. Routescene's LiDAR system mounted on a drone can capture the full tree structure from the tree canopy to the vegetation at ground level. https://dronelife.com/2021/08/06/cheesehead-drone-project-may-improve-climate-models/

CIT and VISA Developing Playbook to Advance Unmanned Systems Technology

NORFOLK, VIRGINIA, USA, July 30, 2021 — The Virginia Institute for Space Flight & Autonomy (VISA) and Virginia's Center for Innovative Technology (CIT) have launched a program to develop a Hampton Roads-Eastern Shore Unmanned Systems Strategic Playbook to focus on the continued development and expansion of unmanned ground, aerial, maritime, and space technologies.

The announcement of the playbook and search for UxS solutions began with the Unmanned Systems UxS Industry Engagement Summit on July 28 at Half Moone Cruise & Celebration Center at Nauticus. The event, attended by more than 150 Hampton Roads innovation leaders, presented challenges identified by public safety leadership during an intensive maritime safety workshop held a few weeks ago. Those challenges were presented at the Summit to industry

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representatives to initiate creative solutions and problem-solving options that utilized autonomous technologies for faster, safer, and more cost-effective emergency response.

The workshop was conducted with support from the Office of the Virginia Secretary of Public Safety and Homeland Security. The participants, which included the U.S. Coast Guard, the Virginia Port Authority, the Center for Naval Analysis, and local public safety agencies, evaluated new autonomous technologies and determined their potential impact and effectiveness at maritime ports. It also included a several mock challenges to focus engagement with industry on specific real-world scenarios using autonomous technology for better, faster, cleaner, and more efficient emergency responses.

"VISA and CIT will work together to identify promising business opportunities for innovators of unmanned technology in Hampton Roads and the Eastern Shore," said Tracy Tynan, director of the Virginia Unmanned Systems Center at CIT. "By working with VISA, we will capitalize on the strengths of the region to build on the Commonwealth's industry leadership to encourage customer demand." https://www.startwheel.org/2021/08/02/cit-and-visa-developing-playbook-to-advance-unmanned-systems-technology-in-hampton-roads-eastern-shore/

Navy Considering Drone Delivery for Essential Parts at Sea Dan Parsons August 5, 2021

The Navy has demonstrated that small drones could take the place of manned platforms in delivering critical spare parts, most of which weigh less than a large bag of dog food, between ships at sea.

Most ships and aircraft taken out of mission-capable status when deployed lack simple components like electronics or wiring assemblies, 90 percent of which weigh less than 50 pounds, according to Navy statistics.

NAWCAD put out a call to industry with its desired capabilities and put several through their paces during the 2019 Advanced Naval Technology Exercise which "allowed industry to demonstrate their potential solutions in an operational mission environment and we were able to say who we want to go work this problem with."

Industry was required to prove its UAV could autonomously transport a 20-pound payload to a moving ship 25 miles away without refueling. Of over 65 UAS platforms that were analyzed, two systems were technically advanced enough to partially meet the difficult requirements.

Navy engineers eventually landed on a "non-traditional partner" in Texas-based Skyways, which was determined to have the necessary size, payload capacity and range to meet the Navy's

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needs. The program is now dubbed the Blue Water Maritime Logistics UAS. Skyways delivered the UAS prototype in October 2020.

The electric Skyways V2.2 drone features four rotors surrounding a tear-shaped body with an aft propeller. It sports wings and a peaked tail for forward flight and boasts a range of 65 miles and a 20-pound payload. A hybrid-electric V2.5 has the same basic configuration but can carry 25 pounds of cargo 500 miles, according to the company's website. https://news.usni.org/2021/08/05/navy-considering-drone-delivery-for-essential-parts-at-sea

This cutting-edge drone is headed out to pasture at an Air Force museum The Valkyrie is a fancy drone designed to escort a fighter jet. It only flew a few times. KELSEY D. ATHERTON AUG 8, 2021

After just a handful of flights, the first of the Air Force's Valkyrie drones is off to its own dignified afterlife, on display at the National Museum of the US Air Force.

Having made just a few test flights, the XQ-58A Valkyrie is now a historical curio. Priced at just around $2 million, the Valkyrie is simultaneously expensive by everyday standards and extraordinarily cheap compared to the fighter jets it's meant to escort.

The F-35A, stealthy and flown by a human pilot, costs $78 million a plane after years of declining prices. Even the helmets worn by F-35 pilots cost $500,000, or a quarter the price of a Valkyrie. So if the attritable drone is merely a fraction as effective as a crewed fighter, the low cost makes it worthwhile in budget terms.

"The objective of this program was to design, manufacture and flight test an aircraft in 24 months," said Dave Hart, the chief engineer for the Autonomous Collaborative Platforms program, in a release. "Our flight tests validated this overall system for performance capabilities and leveraged AFRL's facilities. When we started this program, I had no idea it was going to revolutionize the Air Force." https://www.popsci.com/technology/air-force-valkyrie-drone-museum/

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Norfolk Based DroneUp Completes First Smart City Drone Delivery in Ontario, California Tim Ryan August 8, 2021, Amy Wiegand amy.wiegand@droneup.com

DroneUp announced today that they completed the first smart city drone delivery in Ontario, CA, with Brookfield Properties at New Haven. Other firsts for the residents of Ontario and the New Haven masterplan community included robot carts, e-scooters, and smart hubs. These smart city breakthroughs come as New Haven unveils major retail openings at New Haven Marketplace.

The technology advancements result from long-term investment by the City of Ontario and Brookfield Properties, which further define the city as one of the most progressive in the U.S., providing technology that vastly improves everyday life for residents. New Haven is the fastest growing community in California and 5th in the U.S.

DroneUp, along with drone software leader Airspace Link, worked to bring drone delivery from New Haven Marketplace businesses and services directly to residents via drone. Following these test trials, Ontario and New Haven plan to offer the first authorized drone flights in this large California city. These will also be the first flights near a major airport (Ontario International Airport) and the first drone flights with direct city involvement.
https://www.startwheel.org/2021/07/16/norfolk-based-droneup-completes-first-smart-city-drone-delivery-in-ontario-california/

Bradley International Airport hosts drone detection exercise August 9, 2021 Jenny Beechener Counter-UAS systems and policies

Transportation Security Administration law enforcement, the Connecticut State Police and the Connecticut Air National Guard participated in a joint drone detection practical exercise on Thursday, August 5.

The Unmanned Aviation Systems team designed the exercise to assess the Air Guard's 103rd Security Forces Squadron's ability to respond to a drone incursion on their base at Bradley International Airport. A police-operated drone was flown to an area within the base perimeter of the airport. Except for senior base personnel and the FAA, no one was aware that this was an actual test of the security forces to respond to such an incident, which included notifying external agencies and coordinating a response. A TSA video team was on hand covertly recording the incident for evaluation and training.

In response to the planned incident, a security patrol quickly located the state police trooper, who was piloting the drone from a covert location.

"This was a totally new exercise concept and tested our joint-response capabilities," stated Lt. Colonel William Deme, 103rd Security Forces Squadron Commander. "This was a great first exercise and we learned a lot. This bolsters our readiness."
https://www.unmannedairspace.info/counter-uas-systems-and-policies/bradley-international-airport-hosts-drone-detection-exercise-conducted-by-us-security-police-and-state-officials/

High altitude market forecast to grow 8.7% annually and generate $4 billion by 2029 August 5, 2021 Jenny Beechener Space traffic management, UTM and C-UAS market analysis

Stratospheric balloons, airships, and heavier-than-air-flight vehicles will all play a role in the growing High Altitude Platform Station(HAPS) ecosystem of the future, enabling applications like connectivity, earth observation, disaster management, maritime communications, infrastructure inspections, and humanitarian missions.

The HAPS Alliance Marketing Communications Working Group, comprised of world-leading telecommunications, technology, aviation, and aerospace companies, has just released this first White Paper. The HAPS market is gaining traction with a steady increase of in-service units from 310 in 2019 reaching 710 by 2029, growing at an annual rate of 8.7%. HAPS technology is developing, generating new market demand, and disrupting the current landscape, providing new business potential for companies in the HAPS ecosystem. By 2029 the HAPS market is expected to generate $4 billion, driven by market demand and a rise in scientific research and funding from business, university and government space agencies.
https://www.unmannedairspace.info/latest-news-and-information/high-altitude-market-forecast-to-grow-8-7-annually-and-generate-usd4-billion-by-2029-white-paper/

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Japan Wants To Detect Incoming Hypersonic Missiles With Unmanned Aircraft

THOMAS NEWDICK AUGUST 9, 2021 THE WAR ZONE

The Japanese Ministry of Defense is considering using unmanned aerial vehicles equipped with infrared sensors to provide early warning of potential attacks on the country by hypersonic missiles. Recent reports from the country indicate that the drone-based detection system has

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been proposed as one response to high-speed weapons developments in China and Russia and specifically to counter a new class of ballistic missiles carrying hypersonic glide vehicles.

According to a story on the website of the *Sankei Shinbun* daily, the Japanese Ministry of Defense announced the plan on August 7 as part of what the newspaper described as Tokyo's "rush to develop capabilities to counter the development of hypersonic weapons."

The Chinese Dongfeng-17 (DF-17) hypersonic weapon was displayed to the public for the first time in October 2019 during the National Day Parade in Beijing. The same report notes that the unmanned aerial vehicles would be equipped with an undisclosed but existing infrared detection system originally designed to identify ballistic missile attacks, "technology verification" of which was apparently completed in 2019. The "small infrared sensor" would be carried aloft by a drone that would "operate in an airspace closer to the enemy" and which would be able to remain aloft for long periods.
https://www.thedrive.com/the-war-zone/41909/japan-wants-to-detect-incoming-hypersonic-missiles-with-unmanned-aircraft

CubeSat To Broadcast Advertisements Into Space Jenna Romaine | Aug. 9, 2021

The venture is a combined effort between Canadian technology startup Geometric Energy Corporation and SpaceX.

Samuel Reid, the CEO and co-founder of Geometric Energy Corporation, told the outlet that the company is working to create a satellite called CubeSat. One side of the CubeSat will be used to promote ads, art, and logos. People and companies will be able to pay to place their ads there by buying pixels on the display screen with cryptocurrency.

The GEC is planning on launching CubeSat into space via one of Musk's SpaceX Falcon 9 rockets, which will release it to orbit in space before the rocket heads to the moon. Reid said a selfie stick will be attached to the CubeSat, filming the display screen and allowing people on Earth to watch it on a livestream through YouTube or Twitch.

The CubeSat is predicted to be launched in early 2022. https://thehill.com/changing-america/resilience/smart-cities/566996-elon-musk-to-launch-a-satellite-that-will-beam

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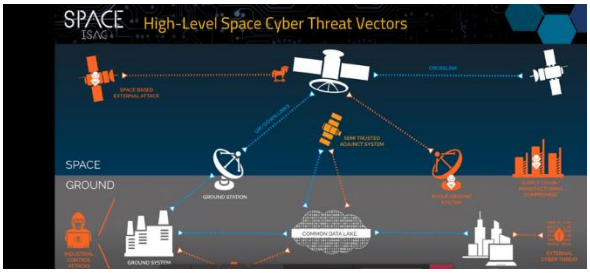
Space ISAC invites firms to join Small Satellite Community of Interest Debra Werner August 9, 2021



The Defense Intelligence Agency is preparing to release an updated version of its 2019 report, Challenges of Security in Space, which includes information on physical and cyber threats to satellites and ground networks.

SAN FRANCISCO — The Space Information Sharing and Analysis Center, or Space ISAC, is eager to share information about cyber threats and other potential security vulnerabilities with the small satellite industry.

In April, Space ISAC established a Small Satellite Community of Interest "to develop and deliver risk-mitigation strategies to members and government partners to better protect this sector of the larger space industry," Erin Miller, Space ISAC executive director, said Aug. 9 during a side meeting of the 35th annual Small Satellite Conference. The small satellite community of interest will "work as a virtual forum of Space ISAC staff and commercial and government experts, collaborating to identify, analyze and develop mitigation strategies for the small satellite industry."

Increasing numbers of small satellites being launched by commercial firms, government agencies and academia face many of the same challenges as larger satellites including the physical threat of collision with other satellites or debris as well as cyber threats including hacking and jamming.

The Small Satellite Community of Interest offers "an opportunity for those of us in this smallsat community to have a chance to share, learn and discuss" those threats and to make satellites safer, said Catherine Venturini, co-chair of the Space ISAC Small Satellite Community of Interest and Aerospace Corp. senior leader for science and technology strategy and development.

The nonprofit Space ISAC, based in Colorado Springs, was established in 2019 to bring together representatives from government agencies and companies to share intelligence and information about threats and vulnerabilities. In 2020, the organization created an unclassified portal. https://spacenews.com/space-isac-invites-firms-to-join-small-satellite-community-of-interest/

Schiebel CAMCOPTER S-100 Successfully Completes Flight Trials For U.S. Navy

August 9, 2021 Military | News

Schiebel Aircraft and Areté Associates, successfully showcased the CAMCOPTER® S-100 Unmanned Air System combined with Areté's Pushbroom Imaging Lidar for Littoral Surveillance (PILLS) sensor to the US Navy's Office of Naval Research.

In a combined demonstration sponsored by the US Office of Naval Research on a commercial vessel off the coast of Pensacola, Florida, Schiebel and Areté demonstrated the CAMCOPTER® S-100 and its capabilities, as well as Areté's Push- broom Imaging Lidar for Littoral Surveillance system.

PILLS enables hydrographic mapping of ocean littoral spaces with a low size, weight, and power sensor that integrates into the S-100. PILLS has multiple military and commercial applications.

"We are proud that we could successfully showcase the capabilities and data-gathering features to the US Navy," said Hans Georg Schiebel, Chairman of the Schiebel Group.
https://uasweekly.com/2021/08/09/schiebel-camcopter-s-100-successfully-completes-flight-trials-for-u-s-navy/?utm_source=rss&utm_medium=rss&utm_campaign=schiebel-camcopter-s-100-successfully-completes-flight-trials-for-u-s-navy&utm_term=2021-08-09

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Austrian drone gazes through tree canopies during forest search and rescue missions Bruce Crumley - Aug. 10th 2021 SEARCH AND RESCUE

Drones can often be faster and more efficient in search operations of lost or immobilized people in forests than helicopter or plane fly-overs, or rescue parties scouring terrain on foot. Still, their efficacity is limited by the inability of onboard tech to visually penetrate dense tree canopies. That may soon change.

A study by researchers from the Computer Science Department at Johannes Kepler University in Austria has devised a drone search and rescue system that can cut through forest obstruction to scan ground-level terrain for human presence. They describe their construction of a system using an uncrewed aerial vehicle mounted with thermal cameras. Those are paired with onboard machine vision tech that immediately analyzes video streams to determine and

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autonomously execute the most promising search options based on available ground evidence. The system basically "X-ray specs" its gaze through trees to look directly for human heat below, then decides which is the best course of search action to adopt next.

The system-on-chip pilots the UAV's flight and controls its thermal camera. It then downloads and preprocesses images shot from the camera's memory, and puts together a final, combined image of what's down below. That all occurs in a matter of seconds as the drone continues its flight. https://dronedj.com/2021/08/10/austrian-drone-gazes-through-tree-canopies-during-forest-search-and-rescue-missions/

Drone video captures lava subsuming entire Iceland volcano Scott Simmie - Aug. 10th 2021

Iceland's Fagradalsfjall volcano is almost like a living thing, in a state of constant evolution. Its behavior can change by the hour, with it even appearing to take extended breaks in its ongoing eruption. But this? This piece of video captures a huge release of lava that literally subsumes the *entire* volcano.

This one comes to us from YouTube creator For The Beauty. It's shot in 4K and is slowed down.

Just after midnight on July 2, 2021, the Fagradalsfjall volcano erupted with a massive wave of lava that covered the entire caldera and cone! I was lucky enough to capture the moment with a DJI Drone in 4k and have put this at half speed so you can enjoy the power and beauty of this amazing volcano at its most beautiful.

Are you ready to see drone video of a massive lava surge?

Of course you are. Watch this lava lake spill over the entire rim of the volcano: https://dronedj.com/2021/08/10/drone-video-captures-lava-subsuming-entire-iceland-volcano/#more-64783

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Emirates gets 'flight attendant' on top of Burj Khalifa for single-take drone ad

Ishveena Singh - Aug. 10th 2021

A new ad commercial from the UAE's Emirates Airline has taken the internet by storm. It shows a cabin staff member in the iconic red Emirates hat and uniform, standing atop the tallest point of the world's tallest building, the Burj Khalifa. Many have wondered if the nail-biting video was real or fake. So now, Emirates has released behind-the-scenes footage showing how this seemingly insane feat was made possible – and that too with a single drone!

Travelers arriving in the UK from Dubai no longer need to quarantine in a government-approved hotel. To share the good news with its patrons, Emirates decided to release a 30-second video that opens with a close-up of the cabin crew holding up message boards in a nod to the famous scene in the 2003 cult hit *Love Actually.* As the camera pans out to reveal a panoramic view of the Dubai skyline, you realize that the crew is standing at the very top of the Burj Khalifa, some 828 meters above the ground.

Sir Tim Clark, president, Emirates Airline, says: The calm and confidence of the cabin crew you see in the ad is an embodiment of our frontline team, serving travelers and ensuring their safety. We're proud to be among a privileged few who have been allowed to film at the top of the Burj Khalifa by Emaar, and even prouder that we get to showcase our beautiful city, Dubai.

Emirates says the ad is the result of rigorous planning, training, testing, and a strict safety protocol. If you haven't seen the commercial yet, you can watch it here: https://dronedj.com/2021/08/10/emirates-burj-khalifa-drone-ad/#more-64910

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Volansi Demonstrates Fully Autonomous Drone Delivery with Navy and Coast Guard Kelsey Reichmann | August 10, 2021

The Silicon Valley-based drone delivery company Volansi completed the first-ever completely autonomous maritime drone delivery demonstration with the Navy and Coast Guard on July 18 near Key West, Florida, Will Roper, Volansi CEO, told *Avionics International*.

The demonstrations consisted of three flights of the company's VOLY 10 and 20 Series unmanned aircraft and were completed 20 nautical miles offshore. During the exercise, the VOLY 10 had a 5-pound payload and completed a 15 nautical mile trip from a Navy ship to the Coast Guard Cutter William Trump and back to the naval ship. The drone did not land on the cutter to simulate a situation where a landing was impossible.

"The Coast Guard wanted to see if we were able to come very low, hover over the ship, and drop the package," Roper said. "So, control our descent, hit a close distance just above the height of a human, so you know you wouldn't hit the person, but you weren't dropping the payload from too high, like maybe a ship in distress like a yacht without clearance to land on."

The VOLY 10 was able to take off from the helicopter pad of the naval ship and used a mission computer to plan its trip. In the mission computer, the operator can tell the drone where to take off and land from, to hover, or to find a target area autonomously. Roper said they can train someone to operate the mission computer in about 20 minutes. Once the mission is planned on the computer, "it's as easy as hitting go."
https://www.aviationtoday.com/2021/08/10/volansi-demonstrates-fully-autonomous-drone-delivery-navy-coast-guard/

Lockheed Martin takes aim at satellite servicing market Sandra Erwin — August 10, 2021

HUNTSVILLE, Ala. — Lockheed Martin plans to launch two cubesats later this year to demonstrate how small satellites can service other satellites in orbit. A pair of 12U cubesats have completed environmental testing and will launch as early as this fall to perform a demonstration in geosynchronous Earth orbit called LINUSS, short for Lockheed Martin In-space Upgrade Satellite System.

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The intent is to show how small satellites can be used to upgrade constellations or provide life-extension services like refueling. The company's near-term goal is to service the next generation of Global Positioning System satellites known as GPS 3F that use Lockheed Martin's LM 2100 satellite bus platform.

The mission will seek to "validate essential maneuvering capabilities for Lockheed Martin's future space upgrade and servicing missions as well as to showcase miniaturized space domain awareness capabilities," said Crawford. https://spacenews.com/lockheed-martin-takes-aim-at-satellite-servicing-market/

5G DRL RACING DRONE DUBBED MAGENTA IS HUGE LEAP FOR FPV RACING AND BEYOND August 10, 2021 Sally French News

The Drone Racing League on Tuesday announced the launch of its first-ever 5G DRL racing drone, which makes it possible to live stream high-definition racing footage. Now, fans can see the pilot's first-person view racing footage in real-time over a high-definition feed with minimal latency or delay.

Dubbed the Magenta 5G drone, it marks one of the first racing drones in the world to have an embedded 5G module capable of live streaming video directly to the Internet. With a dual-FPV and HD-streaming camera system, the drone will be able to film mile-long drone racing courses, made possible through the 5G connection as well as its 5s lipo battery setup for extended flight time. And while the drone won't compete with the zippiest racing drones, it can still fly more than 60 miles per hour.

The 5G component of Magenta is done through a partnership with wireless network provider T-Mobile. DRL Pilots currently fly via analog radio transmissions. While that allows for lower latency, there's a trade-off in the technology; they sacrifice crisp quality footage in their goggles. But as 5G technology improves, pilots will be able to see high-quality, crisp FPV footage in their goggles with low latency. For fans, it means the ability to experience FPV clips on their own mobile devices to gain that same sensation that they are flying inside the drone in real-time. https://www.thedronegirl.com/2021/08/10/5g-drl-racing-drone-magenta/

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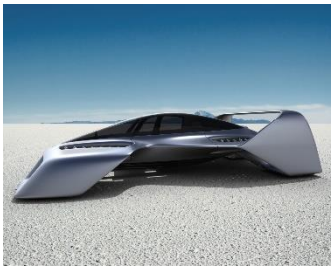
Urban eVTOL announces Leo, a 250-mph hypercar for the skies Loz Blain August 05, 2021

An electric propulsion specialist and a supercar designer have partnered up on an eye-catching three-seat eVTOL, claiming 250-mph top speeds and extraordinary 300-mile range as well as some extreme flight dynamics and some nifty ideas.

Pete Bitar has been working on vertical propulsion systems for decades. Now he's partnered with automotive designer Carlos Salaff to start an eVTOL company. The new company, Urban eVTOL, has released renders of its first aircraft. The Leo Coupe is a three-seat lift-and-cruise design running 16 of Bitar's electric ducted fans for vertical lift, and several more at the rear for horizontal thrust.



Bitar tells us over a Zoom call from Indiana: "The images we've got there are our best-looking artwork, but they don't reflect the current thrust configuration. The Leo will run 16 10-kW vertical thrusters, each about 16 inches in diameter, making 120 pounds of thrust, much larger than the ones you see there. There'll be three in each of the forward banks and five in the rear banks, and the forward thruster array will use six 11-inch jets with turbine blades rather than propeller blades."

The exterior uses a double box-wing design, curling under at the front and over at the back, which Bitar says will be capable of fully supporting the Leo in horizontal flight once it's traveling at around 100 knots. Louvres or covers will likely close off the vertical lift ducts at speed, to reduce drag. The small wings might necessitate higher airspeeds for efficient flight, but they contribute to a big advantage on the ground: this thing not only looks like a flying hypercar, it's small enough to fit in a single car space. https://newatlas.com/aircraft/urban-evtol-leo-air-hypercar/

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Brazil's Embraer and Kenya Airways agree to study flying taxis August 11, 2021

SAO PAULO, Aug 11 (Reuters) - Brazilian plane-maker Embraer SA said on Wednesday its flying taxi unit Eve has signed an agreement with a subsidiary of Kenya Airways to develop operating models in its key markets. The agreement with Fahari Aviation, the unmanned aircraft

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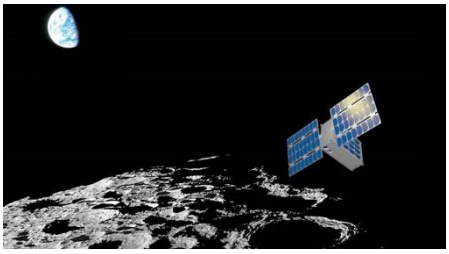
division of Kenya Airways, aims to design a network for the safe operation of Electric Vertical Aircraft (EVA).

Investment in zero-emission electric aircraft has grown as consumers push for greener options in the transport sector, which is looking for new ways to fight congestion in big cities. Traveling from Kenya's airport to its city center by EVA could reduce travel time from over an hour to six minutes, according to a news release from Embraer.
https://www.reuters.com/business/aerospace-defense/brazils-embraer-kenya-airways-agree-study-flying-taxis-2021-08-11/

Lunar cubesats head to the launch pad Jeff Foust August 11, 2021



NASA's Cislunar Autonomous Positioning System Technology Operations and Navigation Experiment (CAPSTONE) cubesat is scheduled to launch in the fourth quarter of this year on a Rocket Lab Electron rocket from New Zealand. The 12-unit cubesat will test the stability of the near-rectilinear halo orbit that NASA plans to use for the lunar Gateway, a key part of its Artemis program of lunar exploration.

Thomas Gardner, director of engineering at Advanced Space and program manager for CAPSTONE, said during a session of the 35th annual Small Satellite Conference Aug. 9 that the launch is currently scheduled for late October or early November.

The primary purpose of CAPSTONE is to validate that orbit as well as test a navigation system by communicating with the Lunar Reconnaissance Orbiter spacecraft. It will also demonstrate the ability of a cubesat to operate in cislunar space: Gardner said that CAPSTONE, if it sticks to its current launch schedule, will be the first cubesat in cislunar space. https://spacenews.com/lunar-cubesats-head-to-the-launch-pad/

ANRA DELIVERS THE GOODS Brent Klavon August 5, 2021

ANRA Technologies flew drone delivery demonstrations at Florida Department of Transportation and Florida's Turnpike Enterprise SunTrax facility for SASHTO 2021, showcasing our airspace management and drone delivery software platforms. SASHTO is the Southern Association of State Highway and Transportation Officials.

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While at the brand new SunTrax facility, ANRA flew its vertical takeoff and landing drone that is capable of carrying a 3-pound payload for long distances and in excess of 90-minutes. The drone was connected to our delivery and airspace management software to demonstrate the entire ecosystem: Drone + Delivery/Order App + Airspace Management.

ANRA is the only known company that offers the option to insert your own drone hardware into a delivery network that includes technology to help develop a safety case to receive permission to fly BVLOS operations. All stakeholders in the supply chain have appropriate levels of access and credentials to view, control, and manage their respective task along the network and to have situational awareness on inventory, package health status, and order progress.
https://www.anratechnologies.com/home/news/anra-delivers-the-goods/?utm_source=marketo&utm_medium=email&utm_campaign=newsletter&utm_content=newsletter&mkt_tok=NzU2LUZXSi0wNjEAAAF-2oAYqzxIqF2UkqdXtbSUGIEDN4j3zJDMhlW-5t8fWP2n7ki5yeLecHZuzWIq1eS0cbzWjJ3p_okDFTh-i6YIeY7hp2FssKHd9_I-gGUd3IDhtA

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