UAS and SmallSat Weekly News

Contents

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18Sep21

Boeing's MQ-25 T1 drone refuels F-35 in third mid-air replenishment Jake Thomas DEFENSE NEWS SEPT. 14, 2021

Sept. 14 (UPI) -- Boeing said Tuesday it's used a MQ-25 Stingray unmanned aircraft to refuel a U.S. Navy F-35C Lightning II fighter jet for the first time.

This was the third mission in three months for the Boeing-owned aircraft that was built primarily for mid-air refueling missions.

The T1 prototype refueled an F/A-18 Super Hornet in June, making it the first time an unmanned aircraft refueled another aircraft in midair. In August, it refueled a E-2D Hawkeye.

During the test flight on Monday, a F-35C test pilot from the Navy's Air Test and Evaluation Squadron Two Three successfully conducted a wake survey behind the T1 to ensure its stability before making contact with the unmanned aircraft's refueling drogue and receiving fuel.

Dave Bujold, Boeing's MQ-25 program director, said in a press release, "Thanks to this latest mission in our accelerated test program, we are confident the MQ-25 aircraft will meet the Navy's primary requirement -- delivering fuel safely to the carrier air wing."

The MQ-25 Stingray is expected to play an important role in extending the combat radius of carrier-based fighter jets by hundreds of miles. https://www.upi.com/Defense-News/2021/09/14/boeing-MQ-25-T1-refueling-drone-mid-air-refueling/4801631634715/

Boeing to build Navy aircraft at MidAmerica, invest $200M JOHN O'CONNOR AP Political Writer September 17, 2021

SPRINGFIELD, Ill. -- Chicago-based aerospace giant Boeing Co. will invest $200 million to begin manufacturing the U.S. Navy's latest unmanned aircraft at MidAmerica St. Louis Airport in a project that could add at least 150 jobs on the company's southwest Illinois campus, officials said Friday.

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Boeing will build the MQ-25 Stingray, the Navy's first carrier-based unmanned aircraft in a state-of-the-art plant of about 300,000 square feet (27,870 square meters). The company has been under contract developing and testing the craft since 2018.
https://abcnews.go.com/US/wireStory/boeing-build-navy-aircraft-midamerica-invest-200m-80073620

MQ-9A UAS Flies in Canadian Arctic 11 Sep 2021 by Mike Ball

General Atomics Aeronautical Systems has successfully flown an MQ-9A UAS north through Canadian airspace past the 78th parallel, proving the platform's ability to fly in high-latitude environments. The aircraft was deployed in its "Big Wing" configuration, which features a 79-foot wingspan, an endurance of over 43 hours, top speeds of 220 KTAS, and a maximum altitude of 45,000 feet.

Many long-endurance UAS are unable to operate at extreme northern (and southern) latitudes, as many legacy SATCOM datalinks can become less reliable above the Arctic (or below the Antarctic) Circle – approximately 66 degrees north. At those latitudes, the low-look angle to geostationary Ku-band satellites begins to compromise the link. GA-ASI has demonstrated a new capability for effective ISR operations by performing a loiter at 78.31° North, using Inmarsat's L-band Airborne ISR Service.

The flight took place over Haig-Thomas Island, in the Canadian Arctic and was conducted with cooperation from the Federal Aviation Administration, Transport Canada and Nav Canada. Covering 4,550 miles in 25.5 hours, it was one of the longest-range flights ever flown by a company MQ-9. The flight was performed under an FAA Special Airworthiness Certificate and a Transport Canada Special Flight Operations Certificate.
https://www.unmannedsystemstechnology.com/2021/09/mq-9a-uas-flies-in-canadian-arctic/

Urban-Air Port and Hyundai to build 65 eVTOL air hubs worldwide Bruce Crumley - Sep. 17th 2021

The project tightens the existing partnership between two leading pure players in the advance aerial mobility (AAM) sector. Urban-Air Port is one of the rare companies focusing exclusively on electric vehicle infrastructure, with Hyundai's aerial vehicle program working to get its first air taxis into operation by 2028.

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The pair has an ongoing partnership building an eVTOL hub in the West Midlands city of Coventry that's set to open for demonstration purposes later this year. The new venture plans to build 65 similar operational electric craft ports around the globe, starting with an additional facility in Coventry.

The initiative is interesting in placing emphasis on eVTOL infrastructure rather than aircraft development. Billions of investor dollars are being pumped into business preparing AAM vehicles, particularly air taxis, through Special Project Acquisition Company (SPAC) deals taking them public. This week German group Lilium began trading shares after investors approved its SPAC plans earlier in the month. Joby debuted on Wall Street in August. Nearly $5 billion has been pumped into vehicle manufacturers so far this year.

All that activity, however, has left infrastructure development hanging, receiving just $150 million in funding this year. That could prove a potentially disastrous oversight should eVTOL companies find themselves ready to begin service without anywhere to take off or land – an eventuality the Urban-Air Port deal with Hyundai clearly wants to avoid. https://dronedj.com/2021/09/17/urban-air-port-and-hyundai-to-build-65-evtol-air-hubs-worldwide/#more-67513

UK defence ministry deploys Drone Dome at G7 summit September 16, 2021 Philip Butterworth-Hayes Counter-UAS systems and policies *By Arie Egozi*

The UK's Ministry of Defence employed Rafael's Drone Dome counter-UAV system to protect world leaders during the recent G7 Summit in Cornwall, UK.

Drone Dome offers a modular infrastructure comprised of electronic jammers, sensors and artificial intelligence algorithms to secure threatened air space. Its technology allows it to address drone and UAV threats through **detection, identification, and neutralization**. When Drome Dome identifies a threat, it allocates the target to the laser, locks onto the target, tracks it, and carries out either a soft or hard-kill with laser technology.

Additionally, DRONE DOME's artificial intelligence capabilities, along with the laser and sensor systems, provide a picture of the incoming threat. This additional information allows the system to detect and identify specific threat elements and engage and neutralize the target faster and more efficiently. https://www.unmannedairspace.info/counter-uas-systems-and-policies/uk-defence-ministry-deploys-drone-dome-at-g7-summit/

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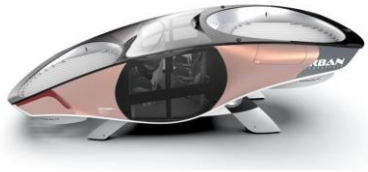
World's first wingless, compact eVTOL aircraft moves a step closer to reality

ASHWINI SAKHARKAR SEPTEMBER 17, 2021

Urban Aeronautics, the Israel-based aerospace company behind the world's first compact, wingless electric vertical takeoff, and landing (eVTOL) vehicle, is getting closer to turning its groundbreaking concept into reality. The company said it has raised the first $10 million of a $100 million funding round this week towards CityHawk from private investors in the US, Brazil, and Israel.

The car-sized, six-seater has more in common with birds than with nearly every other eVTOL prototype. With a distinct, wingless exterior and patented fully-enclosed Fancraft rotor system, the CityHawk is mainly designed for commercial air charters and emergency medical services (EMS). It will be fueled by hydrogen, the most sustainable technology in development today. This means it must be able to conduct multiple trips within a city per day with zero emissions and minimal noise.

An innovative Fancraft technology is based on dual enclosed, ducted rotors with variable pitch for thrust control which enable stability even in strong winds and turbulence during takeoff, hovering, and landing.



The compact eVTOL also incorporates autonomous systems able to detect and avoid oncoming traffic, power lines, and other structures along the route. Besides, the multi-spectral see-through weather detection and anti-icing capabilities enable the VTOL to fly safely at night, in inclement weather, and in degraded visibility conditions.

In addition, the compact design makes it possible to land CityHawk at your block's rooftop vertiport to save an hour by flying over traffic, especially in case of emergencies. Inside, the CityHawk has all the perks of a luxury car with comfortable seats, Wi-Fi, and touchscreens, plus a view of your city from above. https://www.inceptivemind.com/cityhawk-worlds-first-wingless-compact-evtol-aircraft-moves-step-closer-reality/21212/#:~:text=Urban%20Aeronautics%2C%20the%20Israel-based%20aerospace%20company%20behind%20the,closer%20to%20turning%20its%20groundbreaking%20concept%20into%20reality.

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Doosan Mobility Innovation hydrogen drones to feature Iris detect and avoid systems September 17, 2021 Philip Butterworth-Hayes UAS traffic management news

Iris Automation has announced the company has partnered with Doosan Mobility Innovation (DMI) for the integration of its Casia detect and avoid system with DMI's family of hydrogen powered systems and drones. The joint solution will enable DMI's clients to operate safer missions like beyond visual line of sight and accelerates the Korean manufacturer's entrance into the US market. According to a company press release:

"Iris Automation's Casia allows an uncrewed aerial vehicle (UAV) to see and react to the aviation environment around the aircraft. Casia detects other aircraft using computer-vision algorithms to classify them, makes intelligent decisions about the threat they may pose to the drone and then triggers an alert to execute maneuvers to safely avoid collisions.

"With its leading hydrogen-powered fuel cell technology, DMI commercial UAVs are BVLOS-capable and well suited for long endurance flight applications. Drone operations are both eco-friendly and sustainable when powered by hydrogen, as opposed to petroleum. DMI will provide US customers with the option of Casia integrated with its drones or as a combined purchase with their stand -alone powered systems. The two companies will also collaborate on professional services to advance compliance with emerging US aircraft regulatory requirements. https://www.unmannedairspace.info/latest-news-and-information/doosan-mobility-innovation-hydrogen-drones-to-feature-iris-detect-and-avoid-systems/

19Sep21

NORTHROP, MARTIN UAV DEMO NEW NAVIGATION, TARGETING TECH ON V-BAT DRONE

Northrop Grumman and Martin UAV have jointly tested new targeting and navigation features of the V-BAT unmanned aircraft system being offered for a U.S. Army program to replace its RQ-7B Shadow drone.

V-BAT, a lightweight UAS operated by a two-man team, can

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carry a wide range of mission payloads including those designed for electronic warfare, electro-optical/infrared imaging and synthetic aperture radar, Northrop said Wednesday.

The UAS flew at North Dakota-based Camp Grafton to demonstrate flight with target designation technologies and navigation features designed to function in GPS-denied environments.

Kenn Todorov, sector vice president and general manager of global sustainment and modernization at Northrop Grumman, said the updated V-BAT allows for vertical take-off and landing as required by the Army's Future Tactical Unmanned Aircraft System program.

FTUAS seeks an expeditionary VTOL platform that can navigate through GPS-denied areas and perform aerial reconnaissance for brigade combat teams, rangers, and special forces. https://blog.executivebiz.com/northrop-martin-uav-demo-new-navigation-targeting-tech-on-v-bat-drone/?_wte=davidplace47@gmail.com

Bellevue adds UAS tool to boost services *September 10 2021*

Use of Unmanned Aerial Systems technology will be used in key areas across various departments

The City of Bellevue is adding Unmanned Aerial Systems (UAS) technology to its toolkit to improve delivery of essential services to residents. The city completed an extensive assessment of various considerations to using UAS technology, including examining successful UAS programs at other cities in the region. The assessment concluded this technology would improve city services and offer key advantages in information gathering across many departments, where appropriate.

UAS technology has the potential to assist staff in a number of critical areas beneficial to residents. Examples include:

- Use of UAS also offers a better understanding of traffic patterns, aids in education programs and allows engineers and investigators to better assess crash scenes.
- The technology is expected to reduce the hours spent on investigations following serious collisions.

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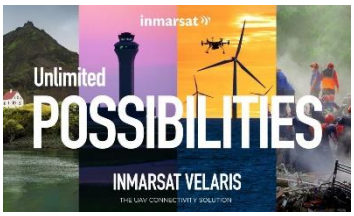
- UAS will help detectives document crime scenes, assist firefighters and emergency responders in assessing safety and strategy when responding to emergencies and aid in disaster management.
- Emergency workers can also deploy UAS technology during search and rescue efforts and send UAS systems into areas that may be unsafe for responders.

Along with the benefits to public safety and emergency response, UAS technology will allow Bellevue to communicate more effectively with the public. https://bellevuewa.gov/city-news/bellevue-adds-uas-tool-boost-services

Inmarsat's new Velaris Connectivity to Unlock Unlimited Possibilities of Unmanned Aviation HEADLINE NEWS GEORGINA FORD SEPTEMBER 14, 2021



Powered by the Inmarsat **ELERA** global satellite network, Velaris will provide secure communications for commercial UAVs to fly beyond visual line of sight and seamlessly integrate with aircraft in commercial airspace. Backed by military-grade cybersecurity, it allows operators to send their UAVs on long-distance flights and access various applications, such as real-time monitoring, to ensure safe integration with other air traffic. In addition, Velaris allows a single pilot to remotely operate multiple UAVs at scale, making operations more commercially viable.

Over the next seven years, the commercial UAV market is projected to increase from $2.32 billion in 2021 to $11.29 billion in 2028, marking a compound annual growth rate of 25.39% during this period. This will have a far-reaching impact on various aspects of business and society ranging from cargo delivery, urban transport and surveillance to emergency services and disaster relief, including supply of critical items such as medicine, test kits and food for remote communities. https://www.commercialdroneprofessional.com/inmarsats-new-velaris-connectivity-solution-to-unlock-unlimited-possibilities-of-fast-growing-unmanned-aviation-industry/

20Sep21

BLOCKCHAIN AND DRONE RACING MERGE IN UPCOMING DRL 2021-22 SEASON September 14, 2021 Sally French News

Mark your calendars, because you've got fresh new content to watch on TV thanks to the Drone Racing League. The world's largest drone racing entertainment group kicks off its DRL 2021-22

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season next week. And if drone racing on its own wasn't the future, this year's version has another high-tech twist: drone racing now incorporates with blockchain.

The DRL 2021-22 season entails a long-term partnership between the Drone Racing League and blockchain platform Algorand that its creators say "has no modern precedent in sports and entertainment." Here are some of the ways you can expect the partnership to play out:

- Fans will be able to purchase blockchain-enabled tickets, collectibles, and other transactions
- Expect to see Algorand hacakthon events occurring at DRL races around the world for crypto developers, programmers, and coders
- Algorand will have the Title rights of the DRL World Championship circuit over the next five years
- DRL will develop a Digital Drone Racing series built into Algorand's blockchain network

"Merging blockchain with drone racing is a bullseye for the league's "tech-setter" fans, who are early adopters, open-minded to new forms of entertainment," according to a statement from the Drone Racing League. "The companies share similar DNA – both have visionary founders, both revolutionize their industries with technology others have tried and failed to replicate, and both move at the speed of racing drones." You can watch it all during the DRL 2021-22 season, which premiers on Wednesday, Sept. 29 at 8 p.m. ET on both NBCSN and Twitter.
https://www.thedronegirl.com/2021/09/20/blockchain-drone-racing-drl-2021-22-season/

Collision Avoidance Between Drones and Manned Aviation Miriam

McNabb September 18, 2021 DRONELIFE Staff Writer Ian M. Crosby

Collision avoidance between manned and unmanned aircraft is critical.

Globally-renowned aviation supplier Becker Avionics has partnered with commercial drone safety innovator Iris Automation to increase situational awareness of general

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aviation pilots and advance UAV safety. The partnership will develop a non-required safety-enhancing equipment system to detect and warn pilots of nearby, potentially threatening aircraft.

The safety system relies on computer vision and machine learning to "see" approaching aircraft from outside the pilot's field of view that pose a risk to the equipped aircraft, issuing 3D audio warnings. The system combines Iris Automation's Casia detect and alert technology with Becker Avionics' communication and navigation equipment expertise for crewed and uncrewed airborne applications. https://dronelife.com/2021/09/18/collision-avoidance-between-drones-and-manned-aviation-iris-automation-and-becker-avionics/

BAE Teams with Malloy on New Electric Heavy-Lift UAS September 20, 2021 News

BAE Systems and Malloy Aeronautics have announced plans to explore the development of an all-electric 'heavy lift' uncrewed air system as a potential new solution to deliver cost-effective, sustainable rapid response capability to military, security, and civilian customers.

The all-electric powered concept vehicle will be designed with a top speed of 140 kilometers per hour and the ability to carry a class-leading 300kg payload with a range of 30 kilometers.

The technology could be used for a range of applications such as ship-to-ship and ship-to-shore movements to support military and security operations and logistics. Emitting zero carbon, the uncrewed system could help revolutionize military operations where there is a requirement to carry heavy loads, helping to keep military personnel out of harm's way whilet reducing the environmental impact of our armed forces.

Malloy's proven track record of innovative technology in this field with our understanding of the military operating environment and engineering and systems integration experience, will enable us to develop a sustainable and cost-effective solution for both military and commercial customers. Dave Holmes, Advanced Projects, Technology and Manufacturing Director, BAE Systems' Air Sector. https://uasweekly.com/2021/09/20/bae-teams-with-malloy-on-new-electric-heavy-lift-uas/?utm_source=rss&utm_medium=rss&utm_campaign=bae-teams-with-malloy-on-new-electric-heavy-lift-uas&utm_term=2021-09-20

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USSOCOM to Receive Robotican Indoor Unmanned Reconnaissance Drone Systems September 20, 2021 Military | News

Robotican has successfully delivered its first indoor UAS to the US Special Operations Command for operational evaluation.

The Gallo is an unmanned reconnaissance system that enables rapid, live situational-awareness and forward observation in confined spaces, such subterranean environments or inside buildings. The Gallo is the first hybrid unmanned platform that has both land robot and aerial drone capabilities. Combining these two disciplines provides an effective tool for a variety of indoor operations.

The Gallo's MESH communication enables the simultaneous operation of three Gallo's from the same control unit, relaying communication in indoor, communication-denied environments. The Gallo is suitable for military missions, as well as search and rescue in locations of risk.

Following delivery, a training course was held that included system operation and mission execution in many operational scenarios such as urban warfare, tunnels, urban and rural warfare, and indoor-mission training. https://uasweekly.com/2021/09/20/ussocom-to-receive-robotican-indoor-unmanned-reconnaissance-drone-systems/?utm_source=rss&utm_medium=rss&utm_campaign=ussocom-to-receive-robotican-indoor-unmanned-reconnaissance-drone-systems&utm_term=2021-09-20

Tucson police-evading super-drone 'quadcopter-like' with 'propellers reflecting light' Bruce Crumley - Sep. 20th 2021

The mystery seems to thicken even as more details arise. Newly unearthed eye-witness accounts of the super-drone that outran and outmaneuvered pursuing police aircraft over Tucson last February establish it as "quadcopter like" replete with "propellers." Yet the who, why, and especially how behind the unbelievable airborne performance remain entirely unknown.

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The latest revelations come from *The Drive*'s War Zone reporter Brett Tingley, who most recently used a Freedom of Information request to obtain new documentation related to the incident. It occurred on February 9, when a small uncrewed aerial vehicle nearly collided with a Customs and Border Patrol helicopter above Tucson just after 10 p.m. A winding 70-mile chase ensued for over an hour at speeds over 100 mph and altitudes of up to 14,000 feet – all in vain, as it turned out. Despite being joined by a Tucson Police (TPD) helicopter, the pursuers could neither catch nor get a hard look at the mega-fast and incredibly agile craft, which taunted the pilots chasing it before disappearing into a cloud bank.

Previously obtained audio files between pilots and air traffic controllers contained real-time descriptions of the "pretty freakin' sophisticated… most advanced drone we've dealt with," as it kept "cutting back across right over the top of us, doing a half orbit, trying to prevent us from following him." As it did so, the UAV repeatedly violated the prohibited air spaces of Tucson's airport and nearby Davis-Monthan Air Force Base.

Now, Tingley offers additional information from internal CBP email that describes the vehicle as "quadcopter like," with "propellers reflecting the city light" as it went into hover GPS mode above the base. Given the unreal speed, maneuverability, and power supply of the vehicle (which outlasted the gas reserves of both chasing helicopters), the additional description and identification of it as a drone is an asset in theorizing what was behind it.
https://dronedj.com/2021/09/20/tucson-police-evading-super-drone-quadcopter-like-with-propellers-reflecting-light/#more-67564

21Sep21

CAE and BETA Team Up on eVTOL Pilot Training

Kelsey Reichmann | September 20, 2021

ALIA is a distributed, direct-drive electric propulsion system with eight lifting motors used for vertical lift and two internal motors used for cruising

BETA Technologies announced a new partnership with CAE for pilot and maintenance technician training for its ALIA electric vertical takeoff and landing (eVTOL) aircraft. The program will be developed to meet the needs of BETA's eVTOL and will be built alongside the aircraft's certification journey.

Kyle Clark, founder and CEO at BETA, said in a statement, "Flying and maintaining electric aircraft requires an understanding of electric systems and flight dynamics that are new to

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aviation. Our team is thrilled to be bringing in CAE's expertise into the fold as we work hand in hand to teach the next generation of pilots and mechanics the unique aspects of flying and maintaining electric aircraft."

ALIA uses a distributed direct-drive electric propulsion system with eight lifting motors for lifting and two internal motors for cruising. BETA plans to certify its eVTOL under Part 23 with the Federal Aviation Administration. https://www.aviationtoday.com/2021/09/20/cae-beta-team-evtol-pilot-training/

Publicly Traded Advanced Air Mobility Companies: Lilium, Archer Join Joby, Ehang Miriam McNabb September 20, 2021

It's been a big season for publicly traded advanced air mobility companies. Chinese manufacturer EHang went public early in the game, hitting Nasdaq on September 19, 2019 (NASDAQ:EH): but this year, they've gotten some company. US-based Joby Aviation went public last month, commencing trading on the New York Stock Exchange on August 11, 2021. (NYSE: JOBY) German company Lilium started trading on the Nasdaq on September 15, 2021. (NASDAQ: LILM). US-based Archer rang the opening bell in NY today, September 20, 2021, as they join the New York Stock Exchange. (NYSE: ACHR)

This is not a comprehensive list. Larger, already publicly traded companies like Hyundai (OTCMKTS: HYMTF) are also developing in the sector: many more are investing in advanced air mobility companies. https://dronelife.com/2021/09/20/publicly-traded-advanced-air-mobility-companies-lilium-archer-join-joby-ehang/

Europcar Brazil Places Order for 50 Skyworks Aeronautics eGyro Electric Aircraft

Georgina Ford September 21, 2021

Europcar Brazil announced plans to purchase 50 eGyro electrically powered vertical take-off and landing aircraft from Skyworks Aeronautics for use in Brazil, the world's fourth-largest market for civil helicopters after the US, Russia and Canada. Europcar is the world's third-largest rental car company and leading mobility provider.

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"Europcar Brazil is extremely excited to partner with Skyworks Aeronautics to bring safe, efficient, and cost-effective electric aircraft solutions to Brazil," stated Paulo Gaba, Chief Executive Officer of the Autotur Group, the Europcar franchisee for Brazil. "This initial order for Skyworks' revolutionary eGyro reflects our understanding that though aviation certainly connects the world in important ways, we have an opportunity to deliver new, sustainable mobility capabilities that create immense value for consumers while better caring for our planet. The offer of eGyros will complete our range of possibilities as a global mobility provider," Gaba added. https://www.aviationbusinessme.com/airlines/europcar-brazil-places-order-for-50-skyworks-aeronautics-egyro-electric-aircraft

Terrafugia launches new drone unit and fixed-wing, hybrid VTOL plane Bruce Crumley - Sep. 21st 2021

Next-generation aviation and automotive company Terrafugia Inc. has created a new unit that thrusts it into the heart of uncrewed aerial vehicle activity. Its Commaris brand is wasting no time getting into the game, and has launched its fixed-wing, hybrid vertical takeoff and landing plane, The Seeker.

Unveiled earlier this month, The Seeker is designed for automated longer-hauls. The fixed-wing VTOL plane gets over three hours out of onboard batteries, and can fly at top speeds of 60 mph. The craft has a fully composite airframe whose 15-foot wingspan can still be assembled or broken down in the field in under three minutes. Its modular design allows for a variety of payloads of up to 10 lbs.

In addition to getting more flight time from its batteries, The Seeker's powerful yet relatively quiet electric motors allow it to reduce noise output to only 40 decibels on the ground and attain quasi- silence at an altitude of 500 feet. The fixed-wing, hybrid VTOL is being initially marketed for businesses involved in security, powerline patrols, and missions in noise-sensitive environments.

Tech add-ons include a 30x optical zoom EO/IR camera for inspections, 120-megapixel high-resolution camera for mapping terrain and 3D modeling, and a six-band multispectral camera designed for precision agriculture analysis. Other optional apps are a LiDAR system, laser methane sensor, and corona discharge sensor. https://dronedj.com/2021/09/21/terrafugia-launches-new-drone-unit-and-fixed-wing-hybrid-vtol-plane/

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French startup raises $11.7 million to speed hybrid power VTOL plane development Bruce Crumley - Sep. 21st 2021

The craft's first public flight is planned for the 2024 Summer Olympic Games in Paris.

Founded just three years ago, Ascendance is hoping to further increase the pace of moving Atea toward the prototype stage. The five-seater VTOL plane is hybrid powered by Ascendance's Sterna system combining electrical battery drive with kerosene combustion. It is intended to rival helicopters for medium-distance passenger transportation. The company says current designs will lower comparative carbon emissions by up to 80% and cut noise generation by a measure of four, providing a maximal range of 400 km at top speeds of 200 km/hr.

They've conceived Sterna as a modular system pairing batteries with a range of combustible materials like kerosene, bio- and synthetic-fuels, and ultimately for use with hydrogen cells. That mix of power sources, Ascendance says, will provide Atea craft with a remarkably quick 10-minute turnaround time. Its design is said to meet European Union regulation requirements for next generation aircraft and technology, while also meeting the standards for uses including passenger transport, emergency medical services, sightseeing flights, or surveillance and patrol missions.

Getting Atea to prototype and testing stages got a lift from the $11.7 million in new funding from big institutional investors that included M Capital, Kima Ventures, and Habert Dassault Finance – which has links to France's giant Dassault Aviation firm.
https://dronedj.com/2021/09/21/french-startup-raises-11-7-million-to-speed-hybrid-power-vtol-plane-development/#more-67615

22Sep21

Police: Without drone, locating Colorado senior would've been 'nearly impossible' Ishveena Singh - Sep. 21st 2021


Drone locates 72-year-old missing man

After 16 hours of being missing, a 72-year-old man was found crouched in a fetal position in thick vegetation by the Pueblo Police Department in Colorado. The essential

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element that led to the missing man's discovery? A DJI Mavic 2 drone.

On September 16, Pueblo police were made aware of a missing elderly man who had walked away from Bonaventure of Pueblo, an assisted living community. The man was last seen at the facility at around 10 p.m. the day before. He was reported to be dependent on medication.

With phone pings revealing that a field near the facility could be the senior's approximate location, officers and dispatchers decided to work together. Soon, the DJI drone discovered the man some 300 yards away from the road, bang in the middle of thick vegetation.

After 16 hours of being missing, the man was found alive but dehydrated, disorientated, and unable to walk. He was transported to a local hospital for evaluation and treatment.
https://dronedj.com/2021/09/21/police-without-drone-locating-colorado-senior-wouldve-been-nearly-impossible/#more-67642

Boeing To Open Loyal Wingman Assembly Plant in Australia Chen Chuanren September 22, 2021

Boeing will build a final assembly facility for the Airpower Teaming System (ATS) in the state of Queensland, Australia, to begin serial production of the autonomous unmanned aircraft. The facility will be the U.S. defense prime's first such site outside North America.

Production at the plant outside the city of Toowoomba will commence by 2025, pending orders from the Australian Department of Defense. Assembly will be focused solely on the ATS, often referred to as the Loyal Wingman.

The Wellcamp Aerospace and Defense Precinct at Toowoomba Wellcamp Airport was picked as the preferred location due to access to a flight line, clear flying days, and commercial flight access from major cities. The site is also only 115 km (71 mi.) from Royal Australian Air Force Amberley, which houses a squadron of Boeing F/A-18Fs Super Hornet, EA-18G Growlers and airlift units.

Australia's Treasurer and Minister for Investment Cameron Dick estimates that the project could generate up to A$1 billion ($750 million) for Queensland's economy over 10 years.
https://aviationweek.com/defense-space/aircraft-propulsion/boeing-open-loyal-wingman-assembly-plant-australia

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Drones and 5G: Swoop Aero Receives 5G Innovation Initiative Funding Miriam McNabb September 21, 2021 by DRONELIFE Staff Writer Ian M. Crosby

Swoop Aero will be providing access to sustainable air logistics across Australia with 5G-enabled aircraft, following their selection as one of only 19 recipients to trial the use of 5G in the nation as part of the Australian 5G Innovation Initiative.

Run by the Australian Government's Department of Infrastructure, Transport, Regional Development and Communications, the program provides businesses in different industry sectors and locations with opportunities to trial and test applications that demonstrate 5G's capability and benefits.

Eric Peck, Swoop Aero's CEO and co-founder, said "From the United Nations to the United States Agency for International Development and the Bill and Melinda Gates Foundation, we've been trusted to create value by sustainably transforming health supply chains by some of the biggest names in global health, so it's great to be able to bring our global expertise to such a fantastic initiative right on our own doorstep."

This new announcement follows the launch of Swoop Aero's most advanced aircraft, Kite™, which is capable of travel at up to 200km per hour and able to operate across geographical ranges of more than 180 kilometers on a single battery charge with an increased payload capacity of up to 5 kgs. https://dronelife.com/2021/09/21/drones-and-5g-swoop-aero-receives-5g-innovation-initiative-funding/

Drones are accelerating OneWeb's antenna tests Jason Rainbow — September 21, 2021

TAMPA, Fla. — OneWeb is using drones from Danish startup QuadSat to accelerate ground segment tests as it aims to bring part of its low Earth orbit broadband constellation online this year.

QuadSat's quadcopters helped calibrate OneWeb's gateway in Scanzano, Italy, and will now test its antennas elsewhere as the operator races to launch initial commercial services in the upper part of the Northern Hemisphere, ahead of full services in 2022.

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The drones simulate the satellites that gateways track as they race across the sky, helping calibrate and verify ground segment networks outside laboratory conditions to prepare them for services.

Calibrating gateways with drones is "much faster" than the traditional method of using a visible geostationary (GEO) satellite, according to Michele Franci, OneWeb's chief of delivery and operations.

With more than 40 gateways being constructed worldwide, each with 15 to 30 antennas that need to be calibrated and tested, Franci said the biggest advantage to using drones is speed. "In our case, I would say it has reduced the time to do antenna [tests] by half if not more," he said. https://spacenews.com/drones-are-accelerating-onewebs-antenna-tests/

Brazilian Airline Gol to Operate Commercial eVTOL Flights Charles Alcock September 21, 2021

Brazilian airline Gol is joining forces with transportation company Grupo Comporte to offer ridesharing services with Vertical Aerospace's VA-X4 eVTOL aircraft. The companies today announced an agreement with leasing group Avolon under which they will lease or buy 250 of the four-passenger aircraft, which are due to enter commercial service in 2024.

In June, Avolon ordered 310 VA-X4s from Vertical Aerospace, with options for another 190. In what was the largest eVTOL aircraft transaction to date, covering up to 1,000 units, American Airlines ordered 250 aircraft with options for 100 more and Virgin Atlantic Airways ordered 50 with 100 more on option.

The Ireland-based leasing company also joined American Airlines, Honeywell, and Rolls-Royce, as well as several of Vertical's existing strategic investors, in supporting public investment in a private equity deal tied to the UK start-up's planned merger and New York Stock Exchange listing with a special purpose acquisition company called Broadstone Acquisition Corp. This deal, which is due to close in the second half of this year, is expected to yield gross proceeds of around $394 million.

The all-electric VA-X4, which will be piloted when it enters service, is expected to have a range of up to 100 miles and a speed of 200 mph. Bristol-based Vertical Aerospace is preparing for a

first flight with a full-scale prototype before the end of this year. Gol is a low-cost carrier operating throughout Brazil and other parts of South America. https://www.ainonline.com/aviation-news/air-transport/2021-09-21/brazilian-airline-gol-operate-commercial-evtol-flights

Airbus Unveils Plans for Larger, Fixed wing eVTOL Cathy Buyck September 21, 2021

Today at Airbus's sustainability summit in Toulouse, France, the manufacturer unveiled a design for a fixed-wing CityAirbus NextGen eVTOL with a V-shaped tail and eight sets of electric motors and propellers.

An engineering team led by Airbus Helicopters is working on the detailed design for the model with the aim of achieving a first flight with a prototype in 2023 en route to type certification in 2025. It will carry up to four passengers on flights of up to 80 km (50 miles) and at speeds of 120 km/h (75 mph).

"We are on a quest to co-create an entirely new market that sustainably integrates urban air mobility into the cities while addressing environmental and social concerns," said Airbus Helicopters CEO Bruno Even. He acknowledged that the real challenges are wide, spanning urban integration, public acceptance, and automated air traffic management, as well as vehicle technology and business models.

Because of the urban mission, low noise levels are essential. CityAirbus's design calls for sound levels below 65 dB(A) during flyover and below 70 dB(A) during landing. Airbus said the design is optimized for efficiency in hover and cruise flight, without having any moving surfaces or tilting parts to handle this transition.

Airbus intends to certify the CityAirbus NextGen under EASA's Special Conditions-VTOL rules. Germany-based start-ups Lilium and Volocopter are seeking type certification on the same basis and hope to achieve this by 2024. https://www.ainonline.com/aviation-news/business-aviation/2021-09-21/airbus-unveils-plans-larger-fixed-wing-evtol

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Bristow Signs Deal for Up to 50 eVTOLs with Vertical Aero Mark Huber September 21, 2021

Bristow Group and the UK's Vertical Aerospace Group have signed a memorandum of understanding to cooperate on the certification and potential purchase of up to 50 eVTOLs. Under the deal, Bristow would place a pre-order for 25 of Vertical's VA-X4 four-passenger aircraft that are capable of speeds to 174 knots and a range of more than 87 nm.

Bristow's commitment adds to Vertical's pre-order book of 1,000 aircraft from potential customers, including American Airlines, Virgin Atlantic, and Avolon. Under the MOU, the two companies have agreed to develop a joint working group to collaborate on regulatory and airspace; demand, fleet size, spare parts, and infrastructure; potential customers; and public acceptance and environmental requirements.

This is Bristow's second electric aircraft deal in less than a month. In late August, the company announced it had signed an MOU with Electra Aero for the purchase of up to 50 of that company's hybrid electric STOL airplanes for entry into service beginning in 2026. https://www.ainonline.com/aviation-news/aerospace/2021-09-21/bristow-signs-deal-50-evtols-vertical-aero

23Sep21

THE TOP DRONE SERVICE PROVIDERS OF 2021 LUKAS SCHROTH SEPTEMBER 17, 2021

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DRONE INDUSTRY INSIGHTS

Following numerous requests by our clients, customers, and readers, DRONEII is delighted to bring you our Drone Service Provider Ranking 2021 Report. It ranks the top drone service providers in the world using company size & development, market shares, and public attention as key parameters.

Top 3 Remote-Sensing Drone Service Providers

Aerodyne: The Malaysian-based company is ranked No. 1 in the Remote-Sensing Drone Service Provider rankings for the first time this year.

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Terra Drone: After two years at the top of the remote-sensing rankings, Terra Drone from Japan had to settle for second place this year.

Cyberhawk: The British company was founded in 2008 and is highly respected in the drone industry thanks to its extensive experience and high-quality results.

Top 3 Delivery Drone Service Providers

Zipline: Zipline is the world's leading provider of drone delivery services for the fourth year in a row according to our Drone Service Provider ranking.

Wing: Coming in at No. 2 is Silicon Valley-based Wing, an on-demand drone delivery service that primarily delivers food and medicine.

Matternet: 3rd place again goes to the Swiss company Matternet. It was one of the first drone companies when it came to transporting medical samples or materials.
https://droneii.com/drone-service-provider-ranking-2021?utm_source=email&utm_medium=newsletter&utm_campaign=release-dsp-ranking-2021&utm_content=read-blog&utm_term=continue-reading-button&mc_cid=cb7b6599ab&mc_eid=7a6c4a1fef#1525106654181-a2b63cd6-e0c3

Volocopter-Geely Joint Venture Orders 150 EVTOL Aircraft Chen Chuanren September 22, 2021

Volocopter and Aerofugia, a subsidiary of Chinese auto giant Geely, have created a joint venture that has ordered 150 Volocopter eVTOL aircraft.

Under the name Volocopter (Chengdu) Technology, the new venture aims to offer UAM solutions to China. The first markets it is eyeing are the cities of Chengdu and Chongqing. The German company has also inked a manufacturing agreement with Volocopter Chengdu and General Aviation Manufactory Base of Geely Technology to produce Volocopter's electric-vertical-takeoff-and-landing aircraft and parts in Chengdu.

Volocopter Chengdu CEO Guo Liang said in a presentation that China faces talent shortages, especially in areas of general aviation, and autonomous UAM solutions are likely to overcome that manpower challenge. In addition, Guo said the unexploited lower-altitude air travel market presents development opportunities for UAM and noted that there is not the conflict with general aviation in China that is commonly seen in the West.

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Guo added that before carrying passengers, the eVTOL will first transport cargo to test reliability and increase confidence in the system. https://aviationweek.com/aerospace/urban-unmanned-aviation/volocopter-geely-joint-venture-orders-150-evtol-aircraft

24Sep21

Chinese eVTOL Firm Autoflight Completes a Round of Financing Worth $100 Million STARTUPS Pandaily September 18, 2021

Shanghai-based Fengfei Aviation Technology, known by its English name Autoflight, is a leading R&D and manufacturing enterprise for autonomous electric vertical take-off and landing (eVTOL) aircraft. The firm announced that it completed its A Round of financing worth $100 million. This is the largest single financing obtained by a domestic eVTOL enterprise so far.

Xie Jia, Vice President of Autoflight, said that this round of financing will be used for R&D and manufacturing of manned eVTOL aircraft, high-end talent resources, airworthiness certification and expansion of market application.

Autoflight was established on September 26, 2019, engaged in the design, R&D, manufacturing, and service of unmanned aerial vehicles. The company's R&D headquarters were established in Shanghai in 2017. At present, Autoflight has over 300 employees, of which technical R&D personnel account for more than half, engaged in aircraft design, flight control algorithm, automatic driving, AI, avionics system, power system and composite materials.

Among the company's products, The V400 Albatross has a maximum take-off weight of 400 kg and a maximum load of 100 kg. The pure electric version has a cruising range of 300 km. At present, this product is mainly used for heavy loads such as regional express logistics, emergency material transportation and rescue. This product has become the first pure eVTOL fixed wing unmanned aerial vehicle to be officially accepted by the Civil Aviation Administration of China for an airworthiness certification. https://pandaily.com/chinese-evtol-firm-autoflight-completes-a-round-of-financing-worth-100-million/

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