UAS and SmallSat Weekly News

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Kawasaki demonstrates unmanned cargo transport with aircraft and wheeled robot January 21, 2022 News

By combining helicopter technology with a motorcycle engine, we have the goal of achieving a payload of 200 kg at an altitude of 3,000 m. First, we plan to develop a transport-type demonstration machine "K-RACER-X1" with a payload of 100 kg in lowlands. Next, we developed "K-RACER-X2" that can carry a payload of 100 kg at an altitude of 3,000 m. We will carry out technology verification tests which will lead to the development of mass-produced models with a payload of 200 kg.

We are currently developing it with a view to carrying out unmanned material transportation in collaboration with delivery robots in the future. See the video.
https://uasweekly.com/2022/01/21/kawasaki-demonstrates-unmanned-cargo-transport-system-which-combines-an-aircraft-and-a-mobile-wheeled-robot/?utm_source=rss&utm_medium=rss&utm_campaign=kawasaki-demonstrates-unmanned-cargo-transport-system-which-combines-an-aircraft-and-a-mobile-wheeled-robot&utm_term=2022-01-21

Anduril Wins $968M SOCOM Counter-UAS Tech Integration Contract ANGELINE LEISHMAN JANUARY 21, 2022

Anduril Industries has won a $967.6 million contract to serve as an industry partner of U.S. Special Operations Command in a counter-unmanned system prototyping project.

The Irvine, California-based technology company will help SOCOM integrate systems under the contract, the Department of Defense said Thursday.

Twelve offerors bid for the Systems Integration Partner prototype project. SOCOM obligated $1.1 million in fiscal 2022 operations and maintenance funds at the time of award and expects Anduril to complete work by Jan. 19, 2023.

Founded in 2017, Anduril aims to fuse artificial intelligence with hardware intended for defense applications. https://www.govconwire.com/2022/01/anduril-wins-968m-socom-counter-uas-tech-integration-contract/?_wte=roberthrea%40gmail.com

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WHAT DRONE UNDER $50 CAN I USE TO LEARN TO FLY? January 10, 2022 Sally French

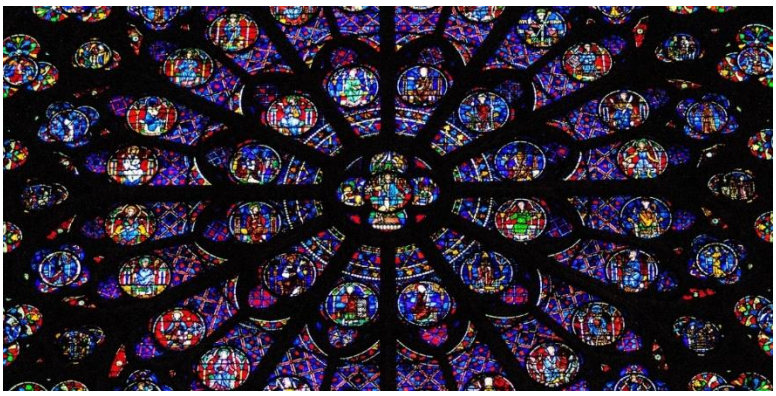
I do not recommend the first drone you fly to be something you can't afford to lose. While the new DJI Mini SE is an incredibly safe, easy-to-fly drone, I still wouldn't want to make it the first thing I touch for a few reasons.

Cheap practice drones are hard to fly and don't have anywhere near automated flight, which is why I recommend you learn on them. Train for the hardest scenario, so you are fully confident in the easy scenarios.

That said, I do really like the Potensic Upgraded A20 Mini Drone. It's about $35.

A couple reasons it stands out: Well within your $50 budget and comes with three batteries. By the time you take off and land, expect to be able to train for at least a half hour using this drone.
https://www.thedronegirl.com/2022/01/21/drone-under-50-training/

The inside story of NatGeo's Notre Dame drone cover shot Ishveena Singh - Jan. 21st 2022



National Geographic's February cover features one of Europe's most well-known structures – the Notre Dame cathedral in Paris. Captured beautifully by a drone, the cover shows the cathedral's iconic buttresses undergoing reconstruction after being damaged by fire in 2019 (see image below). But did you know, it took photographer Tomas van Houtryve six months to get the aerial shot!? Here's why…

Although millions of people around the world were privy to the horror that was the cathedral going up in flames on April 15, 2019, media access to the rebuild process has been painfully limited. In fact, *National Geographic* is the only foreign media outlet that has been allowed to capture the seismic reconstruction effort with high-level photographs and drone footage.

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However, getting the drone up in the air to capture the iconic monument was no easy feat. Just getting the paperwork done took about six months. First, the photoshoot had to be approved by the public institution in charge of the restoration. And then came the process to get the licenses, insurance, police permit, and drone flight authorizations. Regulations also mandated that van Houtryve put up flyers outside nearby buildings to warn residents about the upcoming drone flight.
https://dronedj.com/2022/01/21/natgeo-notre-dame-drone-cover/

Overair tests its eVTOL large propeller propulsion prototype Bruce Crumley - Jan. 21st 2022

Santa Ana, California, startup Overair is not only aiming to become a global player in electric takeoff and landing (eVTOL) aircraft manufacturing, it also wants to revolutionize the propulsion technologies most advanced air mobility (AAM) companies rely on with what it says is a quieter, more efficient large propeller system.

Overair recently took a significant step forward in the development of its Butterfly five-passenger eVTOL craft by kicking off the test program of its full-scale large propeller propulsion prototype. The initial series included a trial in the California desert. With that process now underway, the company believes it will be able to work toward the first test flight of a fully assembled Butterfly by 2023.

Overair says its vectored thrust design is more aerodynamically efficient than most eVTOL aircraft and makes the Butterfly a fundamentally different. The concept leverages the company's proprietary propulsion system employing very large propellers and combines that with what it says is highly efficient wing-borne flight permitting cruising over longer distances per charge than most eVTOL vehicles. https://dronedj.com/2022/01/21/overair-tests-its-evtol-large-propeller-propulsion-prototype/

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Low-cost warfare: US military battles with 'Costco drones' Montather Rassoul January 5, 2022

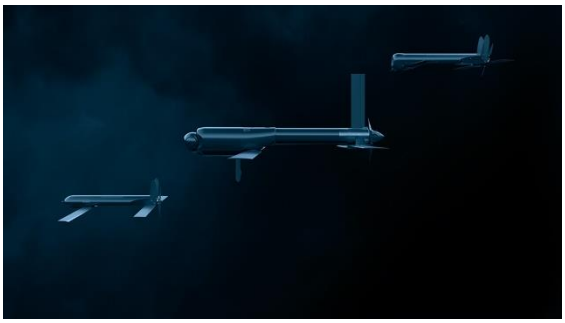
Late in 2019, American military equipment detected an incoming enemy drone over an Iraqi base hosting US forces. The troops were jumpy; their base was vulnerable and exposed.

The detection system gave a grainy picture but indicated the object was getting closer. US forces launched an expensive counter drone missile, which circled the target, missing twice, before being detonated mid-air to avoid a ground explosion. On closer inspection, defense officials later determined the incoming threat was not, after all, a lethally armed drone designed to kill US troops. It was a balloon.

The US has been the pioneer in the use of large killer drones for its global war on terror. Today, much of the conversation about warfare is dominated by extremely sophisticated weapons such as hypersonic, lasers or missile defenses that push at the boundaries of the possible.

But the balloon episode illustrated the inadequacy of US capabilities to defend against, or even identify, smaller weaponized drones. It is these cheap, small, low-tech enemy drones that are fast becoming one of the most significant threats facing America's military.
https://thefifthskill.com/low-cost-warfare-us-military-battles-with-costco-drones/

Multi-domain unmanned systems for future warfare at the tactical edge BREAKING DEFENSE January 19, 2022



AeroVironment's family of loitering munitions

The future of warfare and the Defense Department's latest concept of operations—specifically all-domain operations and distributed operations—will be written by unmanned systems operating at the tactical edge, either individually or as part of a swarm, with interoperability for both manned-unmanned and unmanned-unmanned teaming operations.

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In this interview with Wahid Nawabi, chairman, president and chief executive officer of AeroVironment, we discuss how expensive military assets can be replaced and augmented with more affordable and attritable unmanned systems enabled by the meshing of autonomous systems, artificial intelligence, machine learning and edge computing.

Nawabi: The evolving threat is what you saw in the Armenia-Azerbaijan war in 2020 where lethal, armed drones made by Chinese, Israeli, and Turkish defense companies literally disabled an entire military. Armenia had all their tanks on their front lines and within 48 hours they were disabled. It was done primarily with not-that-complicated, cheap, low-tech lethal drones fired by the Azerbaijan military.

That's just a glimpse of what the future battle will look like against state-run adversaries like China or Russia. It could happen in Eastern Europe, Taiwan, and parts of Korea. Our adversaries are doing this already and the U.S. and its allies must be ready for that conflict today. https://breakingdefense.com/2022/01/multi-domain-unmanned-systems-for-future-warfare-at-the-tactical-edge/?utm_campaign=Breaking%20News&utm_medium=email&_hsmi=201411915&_hsenc=p2ANqtz-_o0yEt_05PEc2R_iWYTIV0SEno4Zh0DTrTzX1cfTl8bd5mJuS-WGGTPaGADKgBrDiPCUQnrrEdB_kNPhUt-pdl4-Tqlw&utm_content=201411915&utm_source=hs_email

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Officials exploring whether AED drone delivery could work within US EMS system Scripps National *Jan 18, 2022*

For the first time, a defibrillator delivered by a drone has played a critical part in saving the life of someone experiencing a cardiac arrest.

Emergency dispatchers in Sweden sent the drone carrying an AED to a 71-year-old man's home after he suffered a cardiac arrest while shoveling his driveway. It arrived in three minutes — before an ambulance could get there. A bystander used the AED on the patient after providing CPR, which saved the man's life.

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Dr. Wayne Rosamond with the Gillings School of Global Public Health at the University of North Carolina is part of a team studying how drone AED deliveries could work. He says the U.S. has come a long way to make the life-saving technology a reality in the last few years. He says questions remain about how to implement the technology safely and whether the new systems are more efficient than the ones in place now.
https://www.thedenverchannel.com/news/national/officials-exploring-whether-aed-drone-delivery-could-work-within-us-ems-system

Use of Drones for Accident Investigation and Disaster Areas on Rise January 21, 2022 by Korea Bizwire in ICT Trend, Photo News

SEOUL, Jan. 21 (Korea Bizwire) — The value of drones mounted with infrared cameras, thermal sensors and radar is gradually rising, particularly for use in accident investigation or disaster areas that are inaccessible to humans.

According to the National Fire Agency, firefighting drones were mobilized for various accident areas 4,782 times over the past five years. Starting from 199 times in 2017, this figure marked about an 11-fold increase to 2,169 times last year.

By type of activity, drones were mobilized most often for the purpose of search and rescue at 3,172 times, followed by firefighting at 1,610 times.

The area of use for drones is also gradually expanding. The Seoul Metropolitan Government is now engaged in an intensive fine dust management project using drones mounted with measuring devices. This project is scheduled to be carried out for four months from last month to March.

Even at the construction site of the Gwangju apartment building that collapsed on Jan. 11, four drones are now being used to search for missing construction workers.
http://koreabizwire.com/use-of-drones-for-accident-investigation-and-disaster-areas-on-rise/209604

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Doug Thron Flies Around the World Saving Pets and Wildlife After Natural Disasters Miriam McNabb January 23, 2022 Jim Magill

Matrice drone flies over scene of natural disaster

Natural disasters – hurricanes, wildfires and tornados – leave a path of destruction in their wake, creating scores of victims, humans of course, but also animal victims.

Rescuing animals lost or stranded in the wake of disasters has become the life work of drone pilot and aerial photographer/cinematography Douglas Thron. Using a Matrice 210 V2 drone, outfitted with a FLIR XT2 camera, which integrates a high-resolution thermal sensor and a 4K visual camera, and a spotlight, Thron has found and rescued distressed animals in far-flung locals from Kentucky and Colorado to the Bahamas and Australia.

Thron's rescues are chronicled in a TV show, "Doug to the Rescue," produced by Curiosity Stream and available on HBO Max. https://dronelife.com/2022/01/23/drones-for-animal-rescue-doug-thron/

U.S. Air Force Conducts Its First Remotely Piloted eVTOL Flight Graham Warwick January 21, 2022

A U.S. Air Force pilot remotely controlled the Heaviside on flights at Kitty Hawk's Palo Alto, California, test site.

Flight testing of advanced air mobility prototypes under the U.S. Air Force's Agility Prime program is gathering pace, with the first government remotely piloted flights of an electric vertical-takeoff-and-landing (eVTOL) vehicle.

In December, Capt. Terrance McKenna, and Air Force Reserve pilot and test experimentation lead for Agility Prime, flew Kitty Hawk's Heaviside as remote pilot in control. In partnership with Agility Prime, Kitty Hawk is developing a training syllabus for the single-seat, tilt-prop eVTOL aircraft.

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The Air Force granted the 880-lb. gross-weight Heaviside airworthiness approval for unmanned flights in July 2021. In November, the Heaviside conducted its first beyond-visual-line-of-sight (BVLOS) flight at the Agility Prime test hub at Springfield-Beckley Municipal Airport in Ohio.

Billed as the first remotely controlled BVLOS flight in non-restricted airspace by an eVTOL company, Kitty Hawk used the SkyVision ground-based detect-and-avoid system, developed by the Air Force Research Laboratory and Ohio Department of Transportation, to fly the Heaviside alongside manned traffic.

Kitty Hawk's Heaviside.

The Air Force's AFWerx innovation unit is looking at potential use of the 180-mph-cruise, 100-mi.-range Heaviside for autonomous missions such as casualty evacuation and recovery of downed aircrew. Kitty Hawk is using its Agility Prime contract to advance testing required to achieve FAA Part 23 certification of the eVTOL.
https://aviationweek.com/defense-space/aircraft-propulsion/us-air-force-conducts-its-first-remotely-piloted-evtol-flight

Boeing Expands Focus on Air Taxis Doug Cameron Follow Jan. 24, 2022

Boeing Co. said it is investing a further $450 million in its air-taxi joint venture with Google co-founder Larry Page developing small, pilotless aircraft for short passenger hops in and around cities.

The company's Silicon Valley-based Wisk venture joins an expanding crowd of electric air vehicles that have attracted billions of dollars in new funding over the past year. Some aim to start service by the middle of the decade, though those efforts hinge on an evolving regulatory framework.

Rival plane makers Airbus SE and Embraer SA are developing their own electric air taxis alongside other startups that have attracted interest and investment from airlines, private jet operators and aircraft leasing companies. The U.S. Air Force is also involved with developing flying taxis for military use.

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Wisk was formed in 2019 through a joint venture between Boeing and Kitty Hawk Corp., an electric aircraft maker co-founded by Mr. Page. Wisk is developing a new aircraft seating three to four passengers that can take off and land vertically like a helicopter, flying autonomously.

Rivals like Joby Aviation Inc. and Vertical Aerospace Group Ltd. are developing piloted, taxi-style aircraft that would later transition to autonomous flight.

Boeing didn't provide a timeline for when the planned Wisk vehicle might enter service but said it would be after rivals with piloted aircraft. https://www.wsj.com/articles/boeing-expands-focus-on-air-taxis-11643022001

UAE bans flying recreational drones after fatal attack yesterday

DUBAI, United Arab Emirates (AP) — The United Arab Emirates has banned flying drones in the country for recreation after Yemen's Houthi rebels claimed a fatal drone attack on an oil facility and major airport.

As of Saturday, drone hobbyists and other operators of light electric sports aircraft face "legal liabilities" if caught flying the objects, the Interior Ministry said, adding it may grant exemptions to businesses seeking to film.

A rare drone and missile strike on the capital of Abu Dhabi blew up several fuel tankers and killed three people last week. The Houthis, who hold Yemen's capital and have fought a bloody, yearslong war with a Saudi-led military coalition that includes the UAE, claimed the assault. While the UAE has largely withdrawn troops from the stalemated conflict, the country continues to be a major player and support local militias on the ground. https://apnews.com/article/business-dubai-middle-east-abu-dhabi-yemen-75425bbfc0d5e2d07d882d7bb123c8f2?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axiosam&stream=top

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US DoD awards Anduril a 10-year $1 billion contract for counter drone technology January 21, 2022 Jenny Beechener Counter-UAS systems and policies

The US Department of Defense has awarded an indefinite-delivery/indefinite-quantity contract with a maximum ceiling of $967,599,957 to Anduril Industries to provide counter drone technology and services for Special Operations Command over a 10-year period.

Approximately $1 million is available in 2022. The work will be performed in various locations within and outside the continental US until January 2032.

The DoD received 12 proposals in response to its request for a counter unmanned systems Systems Integration Partner. Special Operations Command is based at MacDill Air Force Base, Florida. https://www.unmannedairspace.info/counter-uas-systems-and-policies/us-dod-awards-anduril-a-10-year-contract-worth-almost-usd1-billion-for-counter-drone-technology/

Urban Air Port wins financing deal "to develop 200 vertiports worldwide" January 20, 2022 Philip Butterworth-Hayes Urban air mobility

UK start-up, Urban-Air Port Ltd (UAP) has announced it has secured investment from Supernal, previously the Urban Air Mobility Division of Hyundai Motor Group, to deliver on the companies' shared vision of integrating advanced air mobility (AAM) into existing transit networks and creating a seamless passenger journey. The funding will help support UAP's plans to develop 200 vertiport sites across the world in the next five years.

According to a company press release: "UAP's vertiport sites will provide essential infrastructure to help enable mass adoption of eVTOL aircraft – such as cargo drones and air taxis – as public acceptance grows and will transform the way goods and people are transported around urban areas. The world's first fully operational hub for eVTOLs, Air-One, will open for public visitation in Coventry City Centre in April. The demonstration will show how AAM can help unlock the potential of sustainable mobility and how the industry will work to help reduce congestion, cut air pollution, and decarbonize transport. https://www.unmannedairspace.info/latest-news-and-information/urban-air-port-wins-financing-deal-to-develop-200-vertiports-worldwide/

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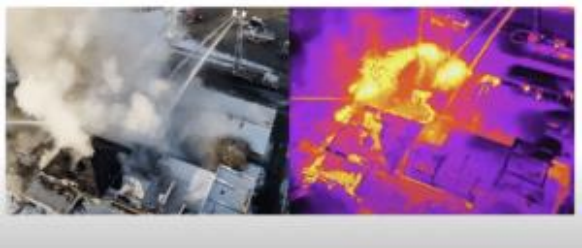
Wingcopter lands $16 million contract with Spright for medical deliveries in the USA January 24, 2022 News

German drone delivery pioneer Wingcopter and Spright, a subsidiary of leading American air medical service provider Air Methods, announced a new commercial agreement today worth more than US$ 16 million. As part of the deal Spright is acquiring a large fleet of Wingcopter's new flagship delivery drone, the Wingcopter 198, to meet the increasing demand for medical drone delivery throughout the United States. The contract makes Wingcopter the exclusive provider of fixed wing eVTOL delivery drone technology to Spright for use within its United States operations. Spright, in turn, becomes the exclusive provider of Maintenance, Repair and Overhaul for the Wingcopter 198 to third parties in the USA, an ideal fit thanks to its available infrastructure across the country.

Spright was launched in July of 2020 as the new drone division of Air Methods to improve healthcare access and minimize supply challenges for customers across the US. To this end, Spright is creating a drone-based, healthcare-specific delivery network in the United States leveraging an existing infrastructure of more than 300 bases, serving hundreds of hospitals, across 48 states in predominantly rural areas. Click here to see a video of the initial tests in Hutchinson, Kansas. https://uasweekly.com/2022/01/24/wingcopter-lands-16-million-contract-with-spright-for-medical-deliveries-in-the-usa/?utm_source=rss&utm_medium=rss&utm_campaign=wingcopter-lands-16-million-contract-with-spright-for-medical-deliveries-in-the-usa&utm_term=2022-01-24

25Jan22

4 Reasons Drone Pilots Need Radiometric Thermal Zoom Sponsored Post January 24, 2022



Teledyne FLIR's VUE TZ20-R is a game changer for commercial drones, for applications from search and rescue to solar inspection. All photographers understand what it means to zoom in on an image. Radiometry, explains Teledyne FLIR's Kelly Brodbeck, "is the process of

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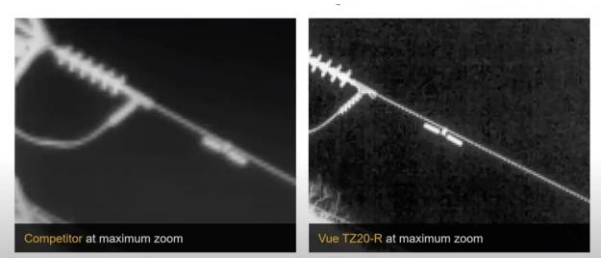
taking the information at every pixel in a thermal image and associating that information with something the human brain can understand, like a temperature."

The ability to get absolute temperature information, rather than simply an understanding that an object is warmer or cooler than the surrounding environment, brings a new level of utility to the data. "You get a lot more information out of thermal imagery," says Brodbeck.



The VUE TZ20-R is different from other thermal zoom cameras on the market in design and clarity. "Most products get very blurry – even misleading – at zoom," Brodbeck points out. Dual BOSON cameras, one set to a narrow field of view and one set to a wide field of view, give drone pilots improved situational awareness while also enabling zoom at full resolution. https://dronelife.com/2022/01/24/4-reasons-drone-pilots-need-radiometric-thermal-zoom/

eVTOL Company Jetson Has Sold Out All 2022 Production Jessica Reed | January 24, 2022

Swedish eVTOL company Jetson has sold out all of its 2022 production of the Jetson ONE. The company recorded 100 units sold since the official launch on October 21, 2021, in addition to 3,000 pre-orders. In 2022, Jetson will initiate its first round of external fundraising, and the first aircraft will be delivered sometime this fall.

The aircraft weighs 190 pounds, and two of its key features are the flight computer and the programming that are both custom-built. Safety is a top priority, as is ease of use. "You can lose an engine and continue flying," remarked Jetson co-founder and president, Peter Ternstrom. He explained that it is incredibly easy to fly the Jetson ONE; "It helps you to land—it always executes a perfect landing."

The 2023 model is expected to have an increased flight time of 24 minutes. While the airframe, motors, and computers will stay mostly the same, future improvements in battery technology will result in longer flight times for each iteration. The model produced in 2024, for example, could have a flight time of 28–30 minutes.

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The total number of orders for the Jetson ONE just reached 228, with two to five new orders coming in each day. The team is building 10 prototypes for testing, ensuring safety, and further improving the software. "We're going to test everything before we go to mass production in the second half of 2023." https://www.aviationtoday.com/2022/01/24/evtol-company-jetson-sold-2022-production/

Airborne ISR SATCOM Capability for Unmanned Aircraft Phoebe Grinter 25 Jan 2022

Eclipse Global Connectivity, Smiths Interconnect and ST Engineering iDirect are collaborating to deliver an integrated Airborne Intelligence, Surveillance and Reconnaissance (A-ISR) satellite communications capability for military and government manned and unmanned aircraft.

The new Ka-Band operates across military and civil frequencies and will initially address the beyond-line-of-sight connectivity requirements for an EMEA (Europe, Middle East, and Africa) government unmanned platform.

The iDirect Evolution Defense platform features military-grade security and advanced mobility capabilities for tactical operations. The iDirect 9800 AE+ airborne modem combined with the Smiths Interconnect KaStream 5000 MK II, a next-generation 30cm parabolic antenna, provides a complete solution for A-ISR operations.

Eclipse Global Connectivity is the end-to-end systems integrator, providing the aircraft radome, platform integration/certification and military-grade encryption. Lightweight and compact, this new capability enables high data rate connectivity, enabling HD full-motion video to support A-ISR missions. Given that the solution is interoperable with a wide range of current and future civilian and military Ka-band satellite constellations, the operator can fly missions anywhere in the world, with truly global connectivity.
https://www.unmannedsystemstechnology.com/2022/01/airborne-isr-satcom-capability-for-unmanned-aircraft/?utm_source=UST+eBrief&utm_campaign=0cabe52400-ust-ebrief_2022-jan-25_engaged&utm_medium=email&utm_term=0_6fc3c01e8d-0cabe52400-119747501&mc_cid=0cabe52400&mc_eid=0d642a9d48

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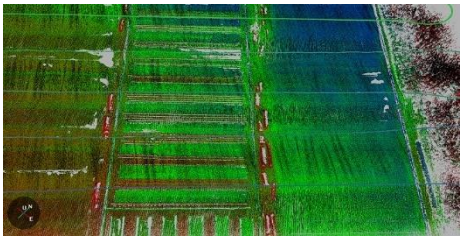
LARGE SCALE ENVIRONMENTAL MONITORING January 12, 2022

FIXAR in collaboration with Latvian State Forests carried out an autonomous environmental monitoring mission at the Laugas bog in Latvia. The main objective of the mission was to demonstrate FIXAR 007 capabilities for large-scale monitoring and inspection tasks to assess and further apply this solution to efficiently monitor large areas of land, forests, and bogs. For this task, FIXAR 007 aircraft was equipped with Velodyne Puck LiDAR sensor and onboard GNSS receiver for increased data accuracy.

Latvian State Forests own a total of 1.62 million hectares (4 mil ac) of land in Latvia, including 1.59 million hectares (3.92 mil ac) of forests and 0.39 hectares (0.96 ac) of state-protected nature conservation territories. Usually, the customer executes this task in 6 hours with a manually controllable copter drone. During a mission, the customer must make multiple battery changes.

FIXAR 007 aircraft was equipped with LiDAR sensor as well as GNSS receiver for higher geotagging accuracy. Wind resistance up to 18 m/s (40.2 mph) and IP54 protection make FIXAR 007 aircraft suitable for use in harsh weather conditions.



In December 2021, a total area of 1.1 km^2 (271.8 ac) was covered with an average flight speed of 22m/s. Despite wind speed of 17-18 m/s (38.0- 40.2 mph) during the flight, FIXAR 007 was able to take off, perform the mission, as well as land autonomously.

It took the drone operator just 26 minutes to cover the selected area and gather high-precision data of the terrain elevation levels. The data gathered can be further used for peat extraction planning and peat bog development in the future. https://fixar.pro/casestudies/large-scale-environmental-monitoring/

Army asks AeroVironment to provide unmanned aircraft in $11 million deal Jan. 25, 2022

Puma LE is an ultra-lightweight group 2 aircraft that is launchable by hand or by bungee and provides flight endurance of 6.5 hours.

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REDSTONE ARSENAL, Ala. – U.S. Army unmanned aerial vehicle experts needed long-range small unmanned aircraft for Kosovo that warfighters can launch by hand in the field. They found their solution from AeroVironment Inc. in Simi Valley, Calif.

Officials of the Army Contracting Command at Redstone Arsenal, Ala., announced an $11 million contract to AeroVironment on Friday for the RQ-20 Puma Long-Endurance (LE) unmanned aircraft system for surveillance missions. Puma LE is a ultra-lightweight group 2 aircraft that is launchable by hand or by bungee, and provides flight endurance as long as 6.5 hours.

This represent Group 2 capabilities in a Group 1 footprint while stowed in a two-case mission packout, company officials say. The Puma UAV weighs 23.5 pounds. The Puma's secondary payload bay offers dedicated power and Ethernet wireless connectivity, providing 3.4 pounds of payload capacity.

The hand-launched Puma LE can operate in all environments and provides an operational range of 37.3 miles over land and water when used with the AeroVironment long-range tracking antenna. https://www.militaryaerospace.com/unmanned/article/14224086/unmanned-handlaunched-surveillance

26Jan22

Kratos, Hypersonix team up on hypersonic drone program Greg Waldron 26 January 2022

Kratos and Australian firm Hypersonix Launch Systems have agreed to develop a hypersonic drone named the DART AE. It will be capable of performing multiple missions, say the companies. It will be produced through additive manufacturing using what the companies call “exquisite high-temperature materials”.

Kratos will supply the rocket booster and its digital engineering capabilities, while Hypersonix will provide the drone’s main powerplant, a “clean hydrogen scramjet engine” that has a published range of 270nm (500km). According to the companies’ grant submission to the Australian Department of Industry, Science Energy and

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Resources, a DART AE demonstration flight will take place in 2023.

The Kratos booster will power the DART AE to over Mach 5 and release it, at which point the scramjet will power the vehicle along a pre-set path to a designated landing spot.

Though the two companies do not provide examples of DART AE missions, a cost-effective hypersonic drone would be useful for the USA and allies to test defensive systems designed to counter hypersonic systems developed by China and Russia.

According to its website, Hypersonix's goal is to create sustainable hypersonic technology powered by green hydrogen. The company says that it aims to "disrupt the global aerospace and satellite launch markets". https://www.flightglobal.com/military-uavs/kratos-hypersonix-team-up-on-hypersonic-drone-programme/147255.article?utm_campaign=FG-DEFENCE-WEBINAR-260122-JM&utm_medium=email&utm_source=newsletter&utm_content=FG-DEFENCE-WEBINAR-260122-JM

Spain gives «green light» to Eurodrone program Por GASTÓN DUBOIS 25/01/2022

The Council of Ministers authorized the acquisition of expenditure commitments to be charged to future fiscal years so that the Ministry of Defense can carry out the development, production, and support for the entry into service, as well as the logistical support of the EUROMALE RPAS (Eurodrone) program.

The EUROMALE program is a multinational program for the design, development, and production of a Remotely Piloted Aerial System, promoted by Germany, France, Italy, and Spain and contracted through the OCCAR (Organization for Joint Armament Cooperation) with the European industry.

According to Airbus, the Eurodrone is designed to become one of the main pillars of any future combat air system, ready for real integration into civil airspace based on minimal restrictions and easy transportability thanks to its modular design. The design will offer multi-mission

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capabilities and significant growth potential for Intelligence, Surveillance, Target Acquisition and Reconnaissance operations. The requirements and specifications have been negotiated and aligned between the end users (Germany, Spain, France, and Italy), the contracting authority (OCCAR) and the participating industrial partners (Dassault Aviation, Leonardo, and Airbus Spain). https://www.aviacionline.com/2022/01/spain-gives-green-light-to-eurodrone-program/

Slick drone video offers XXL wave surf experience at Waimea Bay Bruce Crumley - Jan. 25th 2022

When winter swells come rolling in, the North Shore of O'ahu in Hawaii becomes a magnet for top surfers from around the world. Thanks to one stoked drone pilot, enthusiasts and non-practitioners alike can get a video-enabled feel for what it's like to be out in the hairy action that makes Waimea Bay surfing's legendary big wave spot. Now a drone pilot working with YouTube channel Where's Your Board has provided video simulation of just how heavy things are in the lineup – or stuck in front of it – when the surf is pumping at Waimea Bay.

That vicarious two-part UAV footage was taken January 22, when waves were reportedly surging in at over 20 feet, and dishing out beatings the *Honolulu Star Advertiser* said prompted 53 lifeguard rescues.

But the educational utility – and, quite possibly, nerve-ruining effects – of the drone video isn't limited to its close-up perspective of the so-called "fun" of taking off late on a two story-high Waimea wave. With over 50 death-wishing surfers battling one another for each swell, it also provides an idea of just how crowded the sport has gotten, even on the heaviest of days in the most formidable of spots. See the video. https://dronedj.com/2022/01/25/sick-drone-video-offers-xxl-wave-surf-experience-at-waimea-bay/

SiteAware raises $15 million to expand drone-linked construction verification system Bruce Crumley - Jan. 26th 2022

Construction sector tech services provider SiteAware has raised $15 million Series B funding to expand client adoption of its Digital Construction Verification platform, part of its aim to make

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the drone-linked, artificial intelligence-enhanced asset the new standard throughout the US building industry.

SiteAware's Digital Construction Verification (DCV) system relies on a full range of building blueprint and specification data to create a model – something like an anticipated twin – of what the completed structure is designed to become. It then uses drones, on-site cameras, and people on the ground with sensors to continually collect information on the structure as construction progresses, which is compared against the computer clone of the expected final result. In doing so, DCV allows developers, contractors, and site managers to gauge both the pace and quality of work as it's completed – alerting them to costly scheduling lags, and even costlier flaws needing correction.

Relying on the initial, digitally projected 3D model of the final building as its reference, DCV continuously takes in data as the site develops, providing real-time feedback of whether progress has strictly adhered to plans. When various AI-assisted applications turn up flaws or errors, the platform issues warnings to managers – as well as ways the shortcomings can be rectified fast and efficiently.

In that way, the turnkey DCV platform alerts planners to problems as soon as they arise, and avoids those being compounded by additional construction. That automated scrutiny limits costs incurred by remedial work to errors detected early compared to efforts required when mistakes are discovered late in the game. That, in turn, minimizes unexpected and unwanted fees linked to late completion, and insurance and liability risks from defects.
https://dronedj.com/2022/01/26/siteaware-raises-15-million-to-expand-drone-linked-construction-verification-system/#more-75710

Transformative Vertical Flight 2022: Opening Words from NASA, FAA, and USAF

Jessica Reed | January 27, 2022

This week, the Transformative Vertical Flight 2022 event is taking place for in-person attendees in San Jose, California, as well as for virtual attendees. The 9th annual eVTOL Symposium includes presentations from researchers, government agencies, and industry leaders. The opening session of TVF2022 featured Davis Hackenberg and Jaako Karras from NASA; Col. Jay Hopkins, US Army, Chief of Staff, FVL CFT; Col. Nathan Diller, USAF, Director of AFWERX; and

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Steve Bradford from the FAA.

Davis Hackenberg is the AAM (Advanced Air Mobility) Integration Manager at NASA. He shared details about NASA's AAM National Campaign—a series of flight demonstrations intended to promote public confidence in the safety of AAM and to develop sustainable, accessible air travel in partnership with government agencies and industry leaders. National Campaign-1 (NC-1) includes both flight demonstrations and simulations that will take place this year. Vehicle partners that will participate in NC-1 include Joby Aviation, Wisk Aero, and Reliable Robotics. Additionally, Joby took part in integrated operational urban air mobility (UAM) scenarios in 2021 as part of the developmental testing phase.

For NASA, the focus is less on the performance characteristics of the electric aircraft and more on gathering data on safety. https://www.aviationtoday.com/2022/01/27/transformative-vertical-flight-2022-opening-words-nasa-faa-usaf/?oly_enc_id=7021F0632090D7B

Scaling Up to Advanced Air Mobility Jessica Reed | January 27, 2022 Air Taxi

The Scaling Up to AAM discussion during the eVTOL Symposium at TVF2022 started with a presentation by Paul Stith, Associate Vice President, Global Transportation Initiatives – Growth Accelerator at Black & Veatch. Black & Veatch is an engineering, consulting, and construction company that focuses on sustainable infrastructure innovations. To date, they have deployed well over 2,000 EV charging stations, said Stith. He sees the keys to establishing advanced air mobility (AAM) as industry collaboration, standardization, and policy support.

Black & Veatch recently conducted an Urban Air Mobility (UAM) Electrical Infrastructure Study to understand what changes are needed to the grid, to civic infrastructure, and to fueling systems in order to reach a zero-emission future. The question is, how can EV charging sites and existing infrastructure be developed and scaled up? Three challenges that need to be addressed are funding, permitting, and avoiding stranded assets.
https://www.aviationtoday.com/2022/01/27/scaling-advanced-air-mobility/?oly_enc_id=7021F0632090D7B

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Elroy Air unveils autonomous, heavy payload VTOL cargo drone Bruce Crumley - Jan. 27th 2022

Autonomous heavy cargo drone manufacturer Elroy Air has introduced the full pre-production version of its Chaparral vertical takeoff and landing craft (VTOL), for which the company says it has already racked up 500 orders.

San Francisco-based Elroy introduced its high-capacity, long-distance Chaparral cargo plane on Thursday, promising the end-to-end autonomous VTOL drone will revolutionize where and how express cargo activities operate around the globe. The craft can carry between 300 and 500 lbs. of payload and use its hybrid power source to fly up to 300 miles. Elroy says the specially designed onboard handling system permits transported packages to be loaded onto and off the aircraft automatically, requiring no human intervention at any stage of its operation.

Given that autonomous functioning, heavier capacity, longer flight time than most cargo drones, and VTOL operation, Elroy says the Chaparral will transform how express freight is managed in developed markets and open the activity to many others currently shut out.
https://dronedj.com/2022/01/27/elroy-air-unveils-autonomous-heavy-payload-vtol-cargo-drone/

28Jan22

Volocopter performs its first crewed public eVTOL flight in the US Nick Lavars July 27, 2021

At the Oshkosh air show in Wisconsin on Tuesday, the company sent its all-electric Volocopter 2X into the sky for a four-minute flight, successfully completing its first public crewed test flight of an eVTOL in the US.

Volocopter has been flying the many iterations of its 18-rotor all-electric aircraft for many years, following more than 100 uncrewed tests with the very first crewed flight in Germany in 2016.

Tuesday's landmark flight took place at Wisconsin's Wittman Regional Airport as part of Experimental Aircraft Association's AirVenture Oshkosh 2021. The Volocopter 2X took off with a

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pilot on board to reach an altitude of 164 ft (50 m) and remained aloft for four minutes, reaching a top speed of 18 mph (29 km/h). A model of the company's VoloCity aircraft, meanwhile, was on display for attendees to safely check out on solid ground.

“Volocopter successfully conducting the first US public manned test flight of an eVTOL company in the US is a milestone for the industry and a reminder that our commercial launch is fast approaching," says Florian Reuter, CEO of Volocopter. https://newatlas.com/aircraft/volocopter-first-crewed-public-evtol-flight-us-eaa-oshkosh/

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