UAS and SmallSat Weekly News

Contents

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2022 NEW YEAR'S RESOLUTIONS FOR DRONE PILOTS December 30, 2021 Sally French Flight Diaries

I've compiled a list of ideas for 2022 New Year's resolutions that drone pilots could make.

Get licensed or certified as a drone pilot.

Getting your Remote Pilot certificate under Part 107 or passing the FAA recreational drone test is a critical step in adding legitimacy to the drone industry and ensuring you know your stuff in operating safely.

If you're flying drones for business reasons, get a Remote Pilot certificate under Part 107. If you intend to make money off your drone, you need a commercial license. You can get that by passing a written test from the Federal Aviation Administration called the Aeronautical Knowledge Test. Check out my guide to everything you need to know about the Part 107 test.

If you're flying for fun, pass the FAA recreational drone test. To fly drones as a hobbyist, you must complete an easy online course referred to as TRUST (it takes 30-60 minutes to complete). Once through, you'll be directed to an online quiz which you must pass. That test can be taken online for free via one of the FAA-approved partner organizations.

Try drone racing. I encourage you to try the lighter, wildly fun side of drones. DJI made FPV (First Person View) drone racing more available to the masses this year with the launch of its first-ever FPV drone. It is largely ready for takeoff right out of the box, though it starts at $1,299.

For a free way to try drone racing, download the Drone Racing Arcade game. This mobile game simulates being a racing drone pilot and was created by DRL in partnership with Skillz. It's available on the Google and Apple app stores. https://www.thedronegirl.com/2021/12/31/2022-new-years-resolutions-for-drone-pilots/

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Happy New Year from DRONERESPONDERS charles@droneresponders.org 31Dec21

As we wrap up 2021, a huge thank you to our corporate sponsors who make all of this possible to members for FREE! And thanks to all of those doing specific work for DRONERESPONDERS. Lastly, thanks to each of for joining, utilizing the resources, participating on working groups, mentoring others and more. Here's a snapshot of some activities:

This year DRONERESPONDERS exceeded 5000 members, Published a Public Safety Directory/Map Dashboard with over 1000 participating agencies, Provided Public Safety Conferences at AUVSI XPONENTIAL and Commercial UAV Expo, Provided free monthly webinars with FAA's Mike O'Shea, Numerous free public safety webinars, Supported numerous NIST sUAS activities, Produced monthly FAA Update Newsletters, Provided a TBVLOS Waiver Guide for Public Aircraft Operations (now with over 100 agencies with TBVLOS Waivers), Participated on the FAA BVLOS Aviation Rule Making Committee.

Looking for an even more productive 2022. Stay safe and healthy.
https://www.droneresponders.org/post/happy-new-year-from-droneresponders?postId=93f50798-ae19-41a1-bbd7-a68454518132

Royal Navy drones in South Sandwich Islands penguin census Bruce Crumley - Dec. 31st 2021

Located over 1,300 miles east of the Falklands, the South Sandwich Islands are home to over three million penguins whose numbers have been fluctuating in recent decades. The current count, and clues into the reasons for declines in past years, is what the Royal Navy's *HMS Protector* will be flying drones to establish.

The information will be shared with Oxford University's Department of Zoology and the Washington DC-based scientific and educational organization Oceanites, which has spent nearly three decades compiling a comprehensive estimation of penguin populations in Antarctica. That database is used and reinforced by researchers from all signatories of the Antarctic Treaty system to keep track of the species.

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Up until now, scientists have largely relied on a mix of visual counts, GPS mapping, and interpretation of high-resolution satellite photos to estimate the size of penguin colonies. This time, Royal Navy researchers will confront the archipelago's glacier-covered volcanic mountains, freezing waters, rough surf, and gale-force winds to fly their drones over individual islands. Those missions will bring back photographic data to produce an accurate bird census in less time and cost than previous hybrid methods.

The current calculation ahead of the Royal Navy's more precise drone survey is of 1.3 million breeding pairs of chinstrap penguins – nearly half the world's total – roughly 95,000 breeding pairs of macaroni penguins, and several thousand partnered gentoo penguins. https://dronedj.com/2021/12/31/royal-navy-drone-south-sandwich-islands/

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A ridiculously fun live drone racing event in Vegas January 2, 2022 Sally French

I sincerely hope this becomes more of a frequent thing: live, high-quality drone races that are easily accessible to the general public

The Drone Racing League will host its DRL Algorand World Championship Season 2021-22 finale race at an outdoor course along the Las Vegas strip at T-Mobile Arena in coincidence with the opening night of the Consumer Electronics Show Wednesday, Jan, 5, 2022 — also in Vegas.

If Omicron doesn't disrupt plans, this event could draw huge crowds. Plus, attendance is free and open to the public (though you need to register for tickets in advance here).

If successful, this could kick off a wave of public, highly produced drone races across the country. And there's another reason to believe it should. In December 2021, the Drone Racing League announced that it became accredited by the Federal Aviation Administration as the nation's first unmanned aircraft systems event organizer.
https://www.thedronegirl.com/2022/01/03/drones-in-2022/

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Competition for DJI consumer drones, particularly from Autel and Skydio January 2, 2022 Sally French

Skydio, the American drone company famous for its crash-proof, follow-me drone just held a wildly-good holiday promo, where it was offering up its Skydio 2 Starter kit at a $400 discount, bringing the formerly $1,349 drone + accessory kit down to just $949. That leads me to speculate that Skydio could have a new drone up its sleeve as it looks to offload inventory.

What's more to add to this prediction is that Skydio got a recent influx of cash. The California-based company's valuation topped $1 billion in March 2021 after a $170 million Series D funding round.

And then there's another possible DJI competitor. Autel in 2021 announced two new drone series, the Autel EVO Nano and Autel EVO Lite drones. And in the last week of December 2021, Autel announced that the first model of its latest drones arrived at the US warehouse, and more is to ship over the coming weeks to distributors globally. That means lots of drone pilots could have a new camera drone in their hands this month.
https://www.thedronegirl.com/2022/01/03/drones-in-2022/

SkyMagic Drone Light Show Over London Welcomes in the New Year Miriam McNabb January 02, 2022

Drone light shows are more than just entertainment – they're a stunning achievement in drone fleet management, flight over people, precise positioning, and more. Experts SkyMagic deployed 500 aircraft to provide the biggest drone light show London has ever seen to ring in 2022.

The show was performed from the Old Royal Naval College, Greenwich and over the River Thames as part of the Mayor of London New Year's Eve spectacular.

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Delivering a “message of hope and positivity,” says a SkyMagic press release, “London welcomed the new year with a dynamic broadcast show that took place across the city, celebrating its diverse cultural heritage… ” https://dronelife.com/2022/01/02/skymagic-drone-light-show-over-london-welcomes-in-the-new-year/

XAG Reveals New Generation Drones and Robots for Agriculture January 2, 2022 News

On 22 December, XAG Annual Conference 2021 was held in Guangzhou, China with the theme “Step into Agrifuture”, which launched a series of agricultural innovations to empower farmers with more sophisticated autonomous solutions. Five new products, including the XAG P50 and P100 Agricultural Drone, XAG M500 and M2000 Remote Sensing Drone, and the updated XAG R150 Unmanned Ground Vehicle, are released in China and will be available for global sales in 2022.

Over the past eight years, XAG has been successfully scaling up its agricultural drones across 42 countries and regions to bridge the digital divide in rural areas. The newly updated farming drones and robots not only enrich XAG’s six smart agriculture product lines, but also leapfrog the previous models in terms of efficiency, precision, and safety. They are full of human-centered design to bring thoughtful care to users on farms.

Both new drones are crafted in a structure that can fully separate their flying platform from task systems. This means that they can switch flexibly between the function of crop spraying, granule spreading and field survey. Transportation and maintenance are also made much easier to increase operation efficiency. https://uasweekly.com/2022/01/02/xag-reveals-new-generation-drones-and-robots-for-agriculture/?utm_source=rss&utm_medium=rss&utm_campaign=xag-reveals-new-generation-drones-and-robots-for-agriculture&utm_term=2022-01-03

Autel EVO Nano and Lite Series Drones Available Soon in North America December 29, 2021 News

The first shipment for the long-awaited EVO Nano and Lite Series drones from Autel Robotics finally arrived in North America. The Nano series and Lite series include both a standard drone and a

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"plus" model with some exciting extra features. These drones promise astounding video quality (up to 6K for the Lite+), a wide image transmission range of 7.4 miles, industry-leading battery life of up to 40 minutes (EVO Lite series), and advanced features such as vision sensors for smart obstacle avoidance. They're even available in a range of colors, like the eye-catching Autel Orange and Blazing Red, or the cool Arctic White and Deep Space Gray.
https://uasweekly.com/2021/12/29/autel-evo-nano-and-lite-series-drones-available-soon-in-north-america/?utm_source=rss&utm_medium=rss&utm_campaign=autel-evo-nano-and-lite-series-drones-available-soon-in-north-america&utm_term=2022-01-03

This drone fireworks display just smashed two Guinness World Records titles

Ishveena Singh - Jan. 3rd 2022

Ras Al Khaimah, a city in the United Arab Emirates, NYE 2022 drone fireworks display was organized as a six-act sequence starting with the countdown just before midnight. Featuring innovative pyrotechnic performances spanning an area of over 4.7 km, the 12-minute spectacle was choreographed to epic orchestral music. More than 5,000 hours of work went into preparing for the show.

The display began with a spectacular tower of lights, 1,055.8 meters high – the next act in the show was a "Happy New Year" message written in the sky with firework drones. This was followed by a tribute to the UAE, celebrating the achievements of the nation and its people. The next act featured hundreds of drones displaying the UAE's 50th-anniversary logo, while the finale was held in two parts – a multi-color display of lights and a massive expanse of white that illuminated the skyline.

Setting the first Guinness World Records title for the "Highest Altitude Multirotor/Drone Fireworks Display" was the tower of pyrotechnic drones 1,055.8 meters in height, taller than any skyscraper in the world.

The second Guinness World Records title was for the "Most Remote Operated Multirotor/Drones Launching Fireworks Simultaneously", when 452 drones launched fireworks simultaneously to create the "Happy New Year" visual in the sky.

A spokesperson of the organizing committee called the drone fireworks display "a tribute to the leadership and people of Ras Al Khaimah and the UAE not only as we celebrate the 50th

anniversary of our nation but also in preparation for the next 50 years." Watch the full show here: https://dronedj.com/2022/01/03/drone-fireworks-display-guinness-world-records/

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DJI, SkyPixel announce 2021 creative video contest winners Ishveena Singh - Jan. 3rd 2022

After sifting through entries from over 118 countries and regions, tech giant DJI and its social platform SkyPixel have announced the winners of the 2021 SkyPixel Creative Video Contest.

The annual drone photo and video contest is always a big deal for content creators. But DJI's product portfolio spans well beyond flying machines. Last year, the company decided to celebrate the ever-improving imaging quality of its handheld products by organizing the SkyPixel Creative Video Contest. Now, the winners of prizes totaling nearly $46,000 have been revealed.

The grand prize winner is travel filmmaker Sergio Mota who showcased an aesthetically stunning Italian adventure in the work titled "TUSCANY Through ART." The video takes you on a journey across the masterpieces from Friedrich, Dalí, and Van Gogh, catching glimpses of European art history and celebrating the beauty of humanity. "The whole video is built with three pillars: art, color, and the artists," Sergio says. "I wanted to show how various artists create a fantasy world full of color through the emblematic landscapes of Tuscany."

Judging committee member Mike Bishop calls the piece "one of the most unique and creative short films I've seen and a clear winner, in my opinion." Watch the film here: https://dronedj.com/2022/01/03/dji-skypixel-2021-video-contest-winners/

Soaring Eagle Technologies racks up FAA BVLOS waivers Bruce Crumley - Jan. 3rd 2022

Drone data collection company Soaring Eagle Technologies is getting close to operating beyond line of visual sight missions as a regular way of doing work.

Houston-based Soaring Eagle Technology said it had received another special government interest waiver from

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the FAA for a BVLOS flight in late December, its second in less than two months. That will push the company's tally of such flights to over 60, which it says exceeds those obtained by any other competitor. In November Soaring Eagle used its previous authorization to perform a 51-mile BVLOS inspection of a major energy client's infrastructure in just six hours – equipment packing and the drive back to headquarters included.

Soaring Eagle is making both the quality of its BVLOS inspections and mapping services and its success in obtaining FAA authorization for those flights a major selling point to existing and potential customers. Among its total beyond-sight waivers are 17 granted under emergency conditions to enable swift and precise infrastructure auditing in the wake of hurricanes, fires, or other extreme weather events.

All types of drone inspection missions combined, the Soaring Eagle says it has over 30,000 UAV flying hours inspecting more than 10,000 electrical infrastructure assets, among other sites. The company says its drones can examine and collect data of 100 miles of transmission lines per day in BVLOS mode, at over 50% savings to clients compared to usual small aircraft or road methods. https://dronedj.com/2022/01/03/soaring-eagle-technologies-racks-up-faa-bvlos-waivers/#more-74251

Drone reveals the devastation caused by ferocious Colorado wildfire David MacQuarrie - Jan. 2nd 2022

The images are stark, tragic, and bewildering. Hundreds, perhaps even a thousand homes were completely obliterated by a wildfire that tore through Colorado subdivisions in the closing hours of last year. Watch this drone video of the Colorado wildfire devastation.

Dry conditions and winds more than 100 mph fueled the flames and sent more than 30,000 people fleeing their homes. Two people are still missing and presumed dead and at least seven people are injured.

Brett Adair's company Live Storms Media posted drone video before the flames had gone out.

It's beggar's belief to see entire subdivisions just eradicated. But that's what the fires did to neighborhoods in Superior and Louisville, suburbs about 20 miles northwest of Denver. The fires follow months of drought and exceptional heat. Climate change is the likely culprit, and it's

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lengthening the western fire season. https://dronedj.com/2022/01/02/drone-video-of-the-colorado-wildfire-devastation/

Drone Delivery in Oman: UVL Robotics Integrates into Day-to-Day Parcel Delivery Service Miriam McNabb January 03, 2022

Starting this month, UVL Robotics will provide drone delivery in Oman, servicing Oman's largest city, Muscat, integrating with the local delivery service. The company has also gained permissions to fly beyond visual line of sight. It is the first and only of its kind in the region.

By receiving official permissions for BVLOS flight – a long process that required authorization from the Royal Oman Airforce, the Royal Oman Police, the National Survey Authority, the UVL implementation will not be limited in range. Cooperation with the local delivery service mean that customers for the service are already at hand: the service will not have to build up business with individual retailers or consumers.

For customers in Muscat, drone delivery means faster service without delays because of heavy traffic or infrastructure. The project will offer customers the opportunity to choose their preferred method of delivery. Especially during the current pandemic, contactless delivery may be a top choice. https://dronelife.com/2022/01/03/drone-delivery-in-oman-uvl-robotics-integrates-into-day-to-day-parcel-delivery-service/

Kawasaki Trials Unmanned VTOL Aircraft and Delivery Robot Electric Vehicles Research January 3, 2022

Kawasaki Heavy Industries Ltd announced the successful completion of proof-of-concept testing for unmanned cargo transport by cooperation of its K-RACER (Kawasaki Researching Autonomic Compound to Exceed Rotorcraft) prototype unmanned vertical take-off and landing aircraft and delivery robot.

Kawasaki's latest unmanned VTOL adopts improvements to an aircraft flight-tested in 2020. It can transport a 100-kilogram payload and has a delivery robot loading and unloading mechanism. For its power unit, the aircraft has a Ninja H2R motorcycle supercharged engine built by Kawasaki Motors, Ltd. The delivery robot used together with the unmanned VTOL is

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based on a delivery robot designed to achieve stable operations even on rough and bumpy roads, developed utilizing Kawasaki's knowledge in robotics and technologies behind the off-road capabilities of its motorcycles and side-by-sides. This delivery robot was modified to enable boarding onto an unmanned VTOL.
https://www.electricvehiclesresearch.com/articles/25581/kawasaki-trials-unmanned-vtol-aircraft-and-delivery-robot

The Second Drone Age Is Here and It's a Free-For-All Ruth Pollard January 2, 2022

A drone at the Kalashnikov pavilion during the Army 2021 Expo in Moscow in August 2021.

The pandemic has already given the future a distinctly dystopian look. And then there's this: the burgeoning of the "second drone age." That's how experts are describing the international drone market — which ranges from tiny startups selling $1,000-to-$2,000 off-the-shelf technology that can be easily weaponized by terrorist groups like the Taliban, to high-tech unmanned vehicles that can carry laser-guided munitions and Hellfire missiles.

The deadly shortcomings of this high-tech violence were placed squarely in the public eye with the U.S. drone strike in Kabul on Aug. 29 that targeted terrorists but instead killed 10 Afghan civilians, including seven children. It was a failure of military intelligence and, like so many other civilian fatalities of the U.S. air wars, including those featured in a New York Times investigation published in December, there was no finding of wrongdoing against those involved.

The transformation of defense operations has been far-reaching: 102 countries now run active military drone programs. It's replaced thousands of troops on the ground with controllers behind computers located in bases far away from the air strikes they are launching. In the U.S., fewer troop deaths mean less pressure at the ballot box and less congressional oversight. It allows leaders of many countries and the proxies that support them to get away with what amounts to murder, often of their own citizens, as we've seen in the conflicts in Syria and Yemen.

Without regulation and oversight, the only certainty here is that the technology will continue to advance everywhere. There will be more civilian casualties — and no one will be held

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accountable. https://www.bloomberg.com/opinion/articles/2022-01-02/the-second-drone-age-is-a-weaponized-free-for-all-energized-by-global-commerce?utm_medium=email&utm_source=newsletter&utm_term=220103&utm_campaign=sharethreview

Next Generation Silent Drone Achieves Major Milestone January 4, 2022 News

Undefined Technologies, a venture-backed startup based in Miami, announced that its silent drone powered by ion propulsion has successfully completed a major test flight achieving significant increases in lifting power and mission time. During the 2-minute and 30-second mission flight, the team tested the aircraft's performance, flight dynamics, endurance, and noise levels. The results of this milestone showed the craft's flight time extended to five-fold from the previous version and generated noise levels below 85 decibels.

Tomas Pribanic, Founder and CEO of the company, said "I'm incredibly proud of our highly dedicated team, which overcame many technical challenges along the way and advanced our ion propulsion technology to the next level. With our new discoveries and further understanding of the physics, this Milestone takes us one step closer to bringing our silent drone to market."

The fully electric technology uses innovative physics principles which make it viable to use ion propulsion in atmospheric conditions compared to existing ion thruster technologies. Undefined Technologies is already engaged in the next phase to achieve even longer flight times with noise levels below 70 decibels, overcoming noise restrictions for the last-mile cargo delivery sector. https://uasweekly.com/2022/01/04/next-generation-silent-drone-achieves-major-milestone/?utm_source=rss&utm_medium=rss&utm_campaign=next-generation-silent-drone-achieves-major-milestone&utm_term=2022-01-04

In a medical history first, an AED-hauling drone helps save a cardiac patient's life Bruce Crumley - Jan. 4th 2022

Specialized Swedish drone services company Everdrone has long been an innovator in public UAV operations, but last month it actually made history when one of its craft flew an Automated External Defibrillator (AED) to a man in Sweden who'd suffered a cardiac arrest, saving his life.

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Everdrone on Tuesday revealed the unprecedented operation that occurred on December 9, after a man had been stricken while shoveling snow from the driveway of his home about 75 km north of Göteborg. A doctor from a nearby hospital, Mustafa Ali, witnessed the scene as he drove to work and stopped to help. As he applied CPR, Ali asked someone to call Sweden's emergency assistance number. Scarcely three minutes later, an Everdrone UAV appeared and lowered the AED, which was used to restart the victim's heart awaiting the arrival of an ambulance – the first time ever a life has been saved that way by a drone.

It isn't coincidental that Everdrone has marked history in that way. The company has been at the forefront of innovating, testing, and perfecting drone uses for public safety and first responder missions – including emergency delivery of AEDs to cardiac arrest victims. In addition to many trials run in Sweden, last October, the company successfully piloted a UAV carrying the device from Göteborg during simulated emergency flights in Helsinki – the Finnish capital a full 800 km away.

That mission was the first UAV delivery of an AED flown from a different country, and one of the few de facto cross-border drone operations in the European Union. But the life-saving flight in December, says Everdrone CEO Mats Sällström, is the most compelling proof yet of the speed and efficiency of UAVs performing public services. https://dronedj.com/2022/01/04/in-a-medical-history-first-an-aed-hauling-drone-helps-save-a-cardiac-patients-life/#more-74421

Firefly (really) heavy-lift drone boasts mega-endurance, too Bruce Crumley - Jan. 4th 2022

Affectionately likened to an aerial pickup truck by Joshua Resnick, CEO of manufacturer Parallel Flight Technologies, the Firefly heavy-lift drone is designed to operate as something of a step-up hauling vehicle from existing equipment-transporting UAVs to helicopters. For starters, it weighs in at 120 lbs. all on its and stands three feet tall with a span of five feet. According to the Santa Cruz-area company, the Firefly's hybrid powering design enables its maximum two-hour flight capacity while carrying an additional 100 lbs. of payload – plus fuel for the internal combustion engines paired with its 60V, 5000 mAh battery.

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Parallel Flight Technologies says that strength and endurance combination is 10 times more than its nearest competitor can muster. But the heavy-lift Firefly drone can fly even longer when it isn't maxing out its muscle power. The UAV can remain aloft for four hours with 40 lbs. loaded on, and seven hours with a 10 lbs. payload. According to Resnick, the craft – whose current top speed is 100 mph – will eventually be developed to carry as much as 1,000 lbs. https://dronedj.com/2022/01/04/firefly-really-heavy-lift-drone-boasts-mega-endurance-too/

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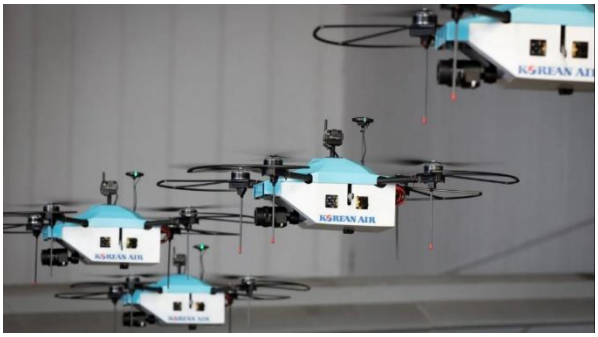
Korean Air Develops Drone Swarm Technology to Inspect Aircraft Eric Kulisch

December 20, 2021



The airline says it has developed technology that for the first time allows a swarm of drones to inspect an aircraft exterior. Last week it demonstrated the concept on one of its aircraft inside a hangar in Seoul. Four unmanned aerial vehicles have been programmed to simultaneously take photos of preplanned areas.

Drone inspections are attracting interest from airlines, maintenance and repair organizations, and leasing companies. Manually checking the upper section of a transport category airplane is challenging and requires lift equipment. Drones can conduct the inspections with a greater degree of safety—as well as with increased accuracy and speed.

Drone inspections can reduce the amount of time an aircraft is out of service. Using remotely piloted aircraft after a lightning strike, for example, could allow an airline to quickly determine if there is any damage without having to pull an airplane into a hangar.

Korean Air said a drone swarm can visually inspect an aircraft in about four hours compared to 10 hours for human inspections. The drones, equipped with high-performance cameras, can identify objects up to 1 millimeter in size, allowing for detection of defects that can't be seen from above with the naked eye.

The inspection data is shared through the cloud, enabling employees to easily check inspection results anywhere and anytime. The airline has also applied a collision-avoidance system and geo-fencing to maintain safety distances from surrounding facilities and prevent drones from breaking away from the mission area. https://www.flyingmag.com/korean-air-develops-drone-swarm-technology-to-inspect-aircraft/

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Kea Aerospace Achieves Longest Endurance UAV Flight in New Zealand 21 December 2021

On Sunday 19th December Kea Aerospace recorded the longest known flight for an unmanned aircraft in New Zealand above Kaitōrete, near Christchurch. The battery and solar-powered vehicle flew non-stop for 14 hours and 3 minutes, beating the previous record of 12 hours and 3 minutes in 1996.

The UAV flight took place in an area above the land managed by the newly established Tāwhaki Joint Venture – a partnership between Te Taumutu Rūnanga, Wairewa Rūnanga (together as Kaitōrete Limited) and the Crown, which aims to heal and rejuvenate the unique whenua at Kaitōrete and advance Aotearoa's fledgling aerospace industry.

Kea Aerospace is building and flying a range of electric-powered aircraft and high-altitude balloons as part of the program to build a large 30+ metre wingspan stratospheric aircraft. The "Kea Atmos" is a solar-powered, unmanned aircraft that can fly in the stratosphere continuously for months at a time. It will carry a suite of imagery equipment that will be game-changing for many industries, vastly improving intelligence for applications such as environmental monitoring, precision agriculture, disaster management and maritime awareness.

Mr Rocket says the company is building a new aircraft that it hopes will exceed the international record of 82 hours for a UAV weighing under 25kg, which it plans to launch in February. https://www.scoop.co.nz/stories/SC2112/S00056/kea-aerospace-achieves-longest-endurance-uav-flight-in-new-zealand.htm

EHang Secures Launch Order for Longer-range VT-30 Kerry Lynch January 4, 2022

EHang has received the first order for its VT-30 Autonomous Aerial Vehicle, with Japan's Okayama Kurashiki Mizushima Aero & Space Industry Cluster Study Group committing to exploring use cases for the two-seat eVTOL aircraft as well as the Chinese manufacturer's EH216 model.

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Over the past six months, EHang has conducted a series of demonstration flights with the EH216 in the Japanese cities of Fukushima and Okayama. The most recent display was at the Kasaoka Air Station in Okayama on December 23 and involved the eVTOL carrying a 60-kg (132-pound) payload. Local officials in Fukushima have been laying plans for commercial operations to begin in 2023.

In May, EHang unveiled the VT-30 as a longer-range alternative to the EH216, which can only fly routes of up to around 22 miles. EHang has not provided any details about the composition of the all-electric propulsion system that it claims will support a range of up to 300 km (187 miles) or endurance of 100 minutes. https://www.ainonline.com/aviation-news/aerospace/2022-01-04/ehang-secures-launch-order-longer-range-vt-30

Embraer unit Eve to go public via merger with SPAC Zanite Acquisition in $2.4 billion deal Dec. 21, 2021 Ciara Linnane

Embraer unit Eve, an urban air mobility business, said Tuesday it is going public via a merger with special-purpose acquisition corporation Zanite Acquisition Corp. **ZNTE, -0.10%** in a deal with an implied enterprise value of about $2.4 billion. Once the deal closes, the SPAC will be renamed Eve Holding Inc. and trade on the New York Stock Exchange under the ticker "EVEX."

Brazilian aircraft maker Embraer SA **ERJ, 0.45%** **EMBR3, -2.02%** will retain a roughly 82% stake in the new company. "We believe that the urban air mobility market has enormous potential to expand in the coming years based on an efficient, zero-emissions transport proposition, and with this business combination, Eve is very well positioned to become one of the major players in this segment, " said Francisco Gomes Neto, president and CEO of Embraer. Eve will have about $512 million in cash from the SPAC to fund operations and support growth. https://www.marketwatch.com/story/embraer-unit-eve-to-go-public-via-merge-with-spac-zanite-acquisition-in-deal-valued-at-about-24-billion-2021-12-21?dist=bigcharts

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SKYDIO 2+ IMPROVES BATTERY AND RANGE, WHILE ADDING KEYFRAME TECHNOLOGY January 4, 2022 Sally French News

2022 is already off to a strong start in the drone industry, and we're less than a week in. That's largely thanks to a significant product reveal from California-based drone maker Skydio, which this week announced its new Skydio 2+ drone.

Couple its longer battery life and range with an improved camera software called Keyframe, and Skydio's newest drone reinvigorates the competition with DJI, which launched its DJI Mavic 3 drone in December that blew everyone away with its massive battery life and incredible camera (albeit massive price tag, too).

While there a handful of highlights with the new Skydio 2+ drone, the standout feature is a new software called Skydio KeyFrame. This AI feature is designed to make filmmaking easier through a system where you design what could be complex camera moves through taps on your phone.

You define a flight path by setting what Skydio calls a KeyFrame. From there, Skydio's AI software creates a continuous camera path between those points. And once those KeyFrames are set, you can play it back, forward or backwards, as frequently as you choose. You can even adjust the speed to your preference (and you can also change the speed midway through the flight path). https://www.thedronegirl.com/2022/01/05/skydio-2-2/

Zenith AeroTech, VIRTEX partnership for long-endurance, heavy-lift, tethered drones

This collaboration will allow Zenith AeroTech to meet larger production goals for its line of tethered aerial vehicles while being fully compliant with National Defense Authorization Act (NDAA) regulations

AFTON, Va.—December 8, 2021—Zenith AeroTech, a leading developer of heavy-lift tethered aerial vehicles, announced today that it has formed a strategic partnership

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with VIRTEX Enterprises, an Austin-based electronics manufacturing service provider, to meet increasing customer demand for more TAVs in shorter timeframes and for these platforms to be NDAA compliant.

Zenith AeroTech offers industry, Federal government, first responder, telecommunications, and military customers the option of three different, highly customizable TAV platforms: Hexa, Quad 8, and Quadro. Thanks to Zenith's Ground Power-Tether Management System, these TAVs can stay aloft for days at a time, delivering true persistent surveillance.

VIRTEX provides engineering services, design, system level integration, PCBA and full life cycle management services for the aerospace, military, and commercial market. These services are delivered in vertically integrated solutions with an aim towards long-term customer partnerships. *https://zenithaerotech.com/*, *https://www.virtex.us/* Media Contact: Don Leckrone, TEL: 540-456-1147 x113, don@zenithaerotech.com

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EHang Launches 5G Air Mobility Center for eVTOLs Jessica Reed | January 5, 2022

Last week, EHang, developer and manufacturer of autonomous aerial vehicles, announced the launch of the 5G Intelligent Air Mobility Experience Center in partnership with Guangzhou Development District Communications Investment Group. The 21,500-square-foot center is located at the Innovation Park in Guangzhou, China—EHang's first urban air mobility pilot city—and has a take-off and landing vertiport.

The Experience Center will enable trial operations of eVTOLs such as the EHang 216 and Falcon B in a variety of applications related to urban air mobility. An automatic parking garage, for example, will one day enable a seamless transfer from car to eVTOL and vice versa.

EHang's unveiling of the new Experience Center comes following its Q3 unaudited financial results last month, sharing total revenues of $2M USD—a 6.6% increase from Q2. According to the company's announcement, they are undergoing a strategic transition from a model that is

centered on product sales towards an operation platform model. While EHang sold and delivered three AAVs in Q2, that number grew to eight units for the third quarter.

EHang reached 20,000 autonomous trial flights on record in November 2021 and continues to work towards full certification for its EH 216 aircraft. As part of the "100 Air Mobility Routes Initiative," there have been roughly 2,800 operational trial flights of the EH. 216. https://www.aviationtoday.com/2022/01/05/ehang-launches-5g-air-mobility-center-evtols/

AUTEL EVO NANO AND LITE DRONES HAVE ARRIVED January 4, 2022 Sally French News

Autel's newest lineup of drones arrived at U.S. warehouses during the last week of December, according to the company, and even more drones are expected to ship globally in the coming weeks.

The Autel EVO Nano and EVO Lite drones were first announced in September 2021, and were initially slated to launch in October and be under Christmas trees for the 2021 holiday season. That didn't happen, but Autel says they're here now and in the hands of distribution partners, including B&H and Adorama.

Autel's launch gives us two separate series of drones, both of which include both a standard drone and a "plus" model that offers up better features at a higher price tag.

Among the most exciting features of Autel's fresh drone lineup:

- 4K HDR video (for Lite/Nano series) or 6K/30FPS video (for Lite+)
- 6.2 miles image transmission range (for Nano series) or 7.4 miles image transmission range (for Lite series)
- Three-way obstacle avoidance (front, rear, and downward)
- Available in colors including white, orange, gray and red

https://www.thedronegirl.com/2022/01/06/autel-evo-nano-and-lite-drones-have-arrived/

Joby Aviation Receives FAA and USAF Approval For Second Prototype Aircraft

Jessica Reed | January 6, 2022

Joby's second pre-production prototype of its eVTOL aircraft was just awarded the Special Airworthiness Certification by the FAA and given airworthiness approval from the USAF.

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FAA Special Airworthiness Certification and U.S. Air Force Airworthiness Approval were both awarded to Joby Aviation for the company's second pre-production prototype aircraft. The company achieved an initial G-1 in 2019 and went on to become the first eVTOL company to sign a G-1 (stage 4) certification basis with the FAA in 2020. After receiving these latest approvals for its second pre-production prototype, Joby will be able to ramp up flight testing in 2022 and continue working towards a commercial operations launch date in 2024.

Joby's all-electric aircraft currently has a maximum range of 150 miles and can operate at a top speed of 200 mph. It has a four-passenger capacity in addition to a pilot. Later this month, the second pre-production aircraft will begin flying as part of the company's contract with the US Air Force's Agility Prime initiative. Over 1,000 test flights have already been completed in the last decade, and that number is expected to increase dramatically to achieve Joby's goal of commencing passenger service in 2024.

Some of the company's priorities with its eVTOL aircraft are sustainability, speed, and a low operating volume to minimize disturbance to communities.
https://www.aviationtoday.com/2022/01/06/joby-aviation-receives-faa-usaf-approval-second-prototype-aircraft/?oly_enc_id=7021F0632090D7B

Drones help fix outages after Virginia winter storm leaves thousands without power Ishveena Singh - Jan. 6th 2022

It's been four days since a winter storm pounded Virginia with up to 11 inches of snow and left tens of thousands of residents without power. Crews at utility company Dominion Energy have been working ever since to ensure a swift response to the outages. But with heavy, wet snow knocking down trees and making some areas especially inaccessible by road, drones have played a critical role in giving linemen a head-start on understanding what they're dealing with.

"In some localities, the damage is so severe that some areas are not even accessible by foot, in those cases, we are using drones to assess the damage," Dominion Energy said in a statement Tuesday. As of today, nearly 90% of Dominion users who lost power have got their lights back on. But officials are quick to point out that such rapid progress on restoration would not have been possible without the use of drones. https://dronedj.com/2022/01/06/drones-fix-power-outage-virginia/#more-74581

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Dog owner spends nearly $16K on drones to celebrate pooch's birthday Ishveena Singh - Jan. 6th 2022 DRONE LIGHT SHOWCHINA

A woman in China has stirred an online frenzy after spending a small fortune to celebrate her dog's 10th birthday. This pet lover from central China's Hunan province dished out a whopping 100,000 yuan ($15,700) to organize a drone light show for her beloved pooch, but local police say the celebration was far from legal.

The woman, whose identity has not been revealed, hired 520 drones to spell out "Happy 10th birthday to Doudou" in Chinese over the Xiangjiang River in the city of Changsha, the *South China Morning Post* reports.

The drones also flew in formations to showcase patterns of a birthday cake and a jack-in-a-box-like present in the sky as the dog's owner and her friends enthusiastically sang "Happy Birthday" to Doudou.

Incidentally, the number of drones used for the feat, 520, was also determined on purpose. According to Chinese news agencies, the number is commonly used as a love phrase because the Mandarin pronunciation for the digits sounds similar to "I love you."
https://dronedj.com/2022/01/06/china-woman-spends-16k-drones-dog-birthday/#more-74502

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Scaled Composites Unveils New Encore High-Altitude Optionally Manned Aircraft Concept THOMAS NEWDICK JANUARY 6, 2022 THE WAR ZONE

A new design from Scaled Composites, the Model 412 Encore, has appeared for the first time in 3D-printed model form. The Model 412 Encore is currently a white paper concept in the "preliminary design phase." It has been pitching the concept to a number of interested customers, and is now looking for funding to continue development, including a flying prototype. Moreover, the emergence of the concept, which is optionally manned, reflects the innovative company's growing portfolio of modular designs that can be reconfigured for various

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mission sets — the Encore is anticipated as being used for a number of mission sets or as a testbed.

The public's first look at the Encore was provided by a desktop model shown on the Scaled Composites booth at the AIAA SciTech Forum and Exposition that's currently taking place in San Diego, California, as well as online. The Encore is displayed next to a model of the same company's one-off Proteus, a manned high-altitude test platform that has flown numerous experimental missions since its first flight in 1998. Since then, Mojave-based Scaled Composites has become a subsidiary of Northrop Grumman.

Like the Proteus, the Model 412 is optimized for high-altitude performance, flying missions at up to 70,000 feet, compared to up to 65,000 feet for the same company's Proteus. The new aircraft is planned to carry a payload of up to 10,000 pounds which would make it ideal for intelligence, surveillance, and reconnaissance missions as well as various experimental test missions. While we don't know what the Model 412's endurance might be, the Proteus is able to remain aloft for the better part of a day. https://www.thedrive.com/the-war-zone/43783/scaled-composites-unveils-new-encore-high-altitude-optionally-manned-aircraft-concept

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