



UAS and SmallSat Weekly News

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17Apr21

Check out this new drone video of a massive Amazon warehouse David MacQuarrie
Apr. 15, 2021



If you've wondered where Amazon finds room for all its drones and drone supplies (more than 60,000 in its latest search results), wonder no more. A new distribution center under construction near Syracuse, New York, has room for drones, and probably other stuff as well. Take a look at this drone video of the

massive Amazon warehouse.

Amazon recently completed the shell of its five-story, 3.8-million-square-foot center in Clay, New York. It will be one of the largest distribution centers in the world when it opens this fall. If the typical football field is 57,000 square feet, you could squeeze 66 of them inside this building. The structure pretty much covers all of what used to be the Liverpool Golf and Country club.



[Syracuse.com](https://www.syracuse.com/news/article20210415/new-drone-video-of-massive-amazon-warehouse/#more-55399) shot this drone video this week. The massive Amazon warehouse is expected to employ about 1,000 people once it gets going. General hiring will begin about a month before the opening. Amazon seems to be investing seriously in the upstate New York area. This week, it donated \$1.75 million to fund robotics and computer science

programs at a new STEM high school in Syracuse. <https://dronedj.com/2021/04/15/new-drone-video-of-massive-amazon-warehouse/#more-55399>

A stunning, really stunning, drone video road trip of Iceland David MacQuarrie Apr. 16th 2021



This drone photograph of a stunning Iceland road trip won the People's Choice Award at the British Photography Awards. But if you think this still is amazing, wait until you see the Iceland road trip video.

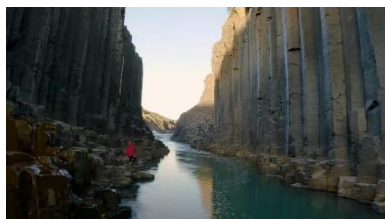
Hugo Healy is a 25-year-old photographer from



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Brighton, England. He stitched together four images for this special still. The photo emerged from a recent road trip he made to Iceland. Healy also made a video of that road trip, and it's simply not to be missed.

"I wanted to recreate it for others, portray the sense of wonder, awe, and desire to explore, as these were the feelings that I experienced in this magical location. I want to encourage others to pack their car, hit the road, and explore these wondrous hidden places of our world," he says. Both DJI and Iceland tourism should take note of his work.



Here's a few favorites: a moonscape at :12, a "rock cathedral" at :34, a "moss glacier" at :57, a striking waterfall sequence at 1:59, and of course, a geyser at 3:21.

<https://dronedj.com/2021/04/16/a-stunning-really-stunning-drone-video-road-trip-of-iceland/#more-55495>

Location, location, location: Wild Iceland volcano FPV drone video Scott Simmie

Apr. 16th 2021



Yes, you've likely seen a video taken by drone of that Iceland volcano by now. But we're betting many of you haven't seen this video, or the story behind it.

We've been watching this volcano – at least via YouTube – since all this began. And we've seen some pretty incredible videos. Today, something equally spectacular (and possibly more). A beautifully produced FPV flight over the same volcano.

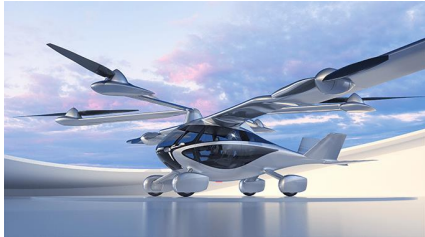
Flying in First Person View gives a pilot the ability for a far greater range of shots than a standard quadcopter. And so [Iceland Aerials](#) decided to take an FPV to the site. Iceland Aerials is a collective of three friends who live in Reykjavik. They're all total drone geeks with a real passion for flying – and who've been making the shift over the past year to more cinematic FPV work. Though they're hobbyists, they hope to work on some pro shoots in the future. Are you ready? Let's goooooooooo.... <https://dronedj.com/2021/04/16/location-location-location-wild-iceland-volcano-fpv-drone-video/#more-55685>



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Announcing ASKA The Electric Take Off and Landing Flying Car for Consumers

April 16, 2021 News



NFT Inc, today announced it is now taking pre-orders for the [ASKA™](#), **the first** electric vertical take-off and landing (eVTOL) vehicle designed for consumers.

The company has also opened **the world's first consumer flying car showroom**. Located in Los Altos, the heart of Silicon

Valley, the sales showroom features demonstration models of the ASKA™ and a learning center about urban air mobility.

The four-seater ASKA™ drives on the road like a car, capable of vertical takeoff and landing and flies like an aircraft. A special limited edition is now available for preorder and priced at **\$789,000**. Interested buyers can register at ASKA's website www.askafly.com to start the sales process and to place a \$5000 deposit to secure their place on the preorder list. The deposit will be held in an escrow account and is fully refundable. Services included in pricing are Pilot License training, Customized interior/exterior design, and a Personalized license plate. The ASKA™ is targeted for delivery in 2026, pending standard regulatory approval and certification. https://uasweekly.com/2021/04/16/announcing-aska-the-electric-take-off-and-landing-flying-car-for-consumers/?utm_source=rss&utm_medium=rss&utm_campaign=announcing-aska-the-electric-take-off-and-landing-flying-car-for-consumers&utm_term=2021-04-16

18Apr21

UT Hosts Generals and Admirals From Every Service to Showcase Innovative Technologies

Apr 14, 2021



Marine General Gary Thomas, a 1984 graduate of UT Austin, listens to information about the capabilities and potential uses of a car-sized eVTOL aircraft developed by LIFT Aircraft.

AUSTIN, Texas — A showcase of innovative technology highlighting the work researchers at The University of Texas at Austin have accomplished with local technology companies recently brought a delegation of the U.S. Joint Requirements Oversight Council members and other top Texas officials to campus. For the **first time outside the Pentagon**, the delegation met with academia, industry, investors and defense in a combined effort to help figure out the way



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into the future. The showcase featured about 25 displays of new, next-generation technology and innovation, most with dual-use military and civilian applications, including a car-sized eVTOL aircraft developed by LIFT Aircraft, an Austin-based company. The aircraft could someday be flown into combat zones or natural disaster areas.

<https://news.utexas.edu/2021/04/14/researchers-industry-leaders-and-military-generals-come-together-for-innovation-expo/>

ANA to start drone delivery service as Japan eases regulations Nikkei staff writers April 14, 2021



TOKYO -- Japanese airline group ANA Holdings will launch a drone delivery service in the fiscal year through March 2023, using a vehicle developed by a German startup to carry daily necessities and medicines to Japan's remote islands and mountainous regions.

ANA is preparing the service as the Japanese government takes steps toward relaxing drone regulations sometime in the same fiscal year. It will be **the first time** for a domestic airline to start a drone transportation service.

ANA's German supplier is Hessen-based Wingcopter. The startup's drone has recorded a top speed of 240 kph and can travel up to 120 km, **more than 10 times farther** than general-purpose drones. ANA expects the service to transport daily necessities to remote islands as well as medicines and relief goods to disaster zones. It has been testing drone transportation on remote islands since 2018 and plans to deploy its airline expertise in flight route design and aircraft safety management. <https://asia.nikkei.com/Business/Transportation/ANA-to-start-drone-delivery-service-as-Japan-eases-regulations>

AIRT Helps Save Lives with Drones, Esri ArcGIS and other Location Intelligence Technologies April 7, 2021 News



Airborne International Response Team ([AI RT](#)), the leading 501(c)3 organization supporting Drones For Good™ for emergencies and disaster response, announces their participation in Esri's Partner Network Program. [Esri](#) is the global market leader in geographic information system software, location intelligence, and mapping. AIRT is also



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home to DRONRESPONDERS – the non-profit program supporting the use of unmanned aircraft systems by public safety and emergency services agencies.

The announcement was made during [Drones: Taking Stock of a Growing National Capability](#) presented at the InSPIRE Innovation Summit for Preparedness and Resilience, hosted by the National Alliance for Public Safety GIS Foundation. The NAPSG Foundation is a non-profit organization formed in 2005 to overcome challenges faced by Federal, tribal, state, and local public safety agencies.

As an Esri Partner, AIRT will receive access to wide array of geographic information system tools, software, and support to better enable drone teams respond to incidents such as hurricanes and wildfires. <https://uasweekly.com/2021/04/07/airt-helps-save-lives-with-drones-esri-arccgis-and-other-location-intelligence-technologies/>

Navy Puts Unmanned Vehicles to The Test in Operational Exercise That Kicks Off Monday

Times of San Diego, News Partner Apr 16, 2021



The Navy begins its **inaugural** manned and unmanned capabilities exercise Monday, led by the U.S. Pacific Fleet and executed by the U.S. 3rd Fleet. The week-long exercise, known as Unmanned Integrated Battle Problem 21 or UxS IBP21, will generate advantages for the service "by integrating multi-domain manned and unmanned capabilities into the most

challenging operational scenarios."

The Navy will work with several operational, unmanned systems during the exercise. They include the MQ-9 Sea Guardian Unmanned Aerial Vehicle, the Medium Displacement Unmanned Surface Vessels Sea Hunter and Sea Hawk, and small and medium Unmanned Undersea Vehicles with modular payloads. <https://patch.com/california/san-diego/navy-puts-unmanned-vehicles-test-operational-exercise-kicks-monday>

19Apr21

Fotokite Tethered Drone for Public Safety Wins iF Design Award: Unlimited Flight Time, Elegant Design

Miriam McNabb April 17, 2021

The [Fotokite](#) tethered drone for public safety has won a top distinction at this year's iF Design Award. "From almost 10,000 submissions, only 75 were honored with the Gold Award for outstanding design achievements by an international, independent jury of experts."



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Fotokite Sigma - the tethered drone for public safety teams – provides mission-critical situational awareness with **unlimited continuous** flight time. That’s a critical differentiator for public safety teams, who may not be able to land and change batteries in the midst of an emergency event. The design also allows launching, flying, and landing “with the single push of a button helps to save team resources,” more important features for public safety teams who need all focus on the situation in front of them.

The Fotokite solution includes the Fotokite Live App, which provides real-time thermal and high-definition video streams both on and off-site, providing First Responders and off-site situation commanders immediate actionable information throughout the mission. “Fotokite Systems have saved human lives numerous times throughout search and rescue and live fire missions,” says the company. <https://dronelife.com/2021/04/17/fotokite-tethered-drone-wins-if-design-award/>

Nasa Mars helicopter flight: Ingenuity makes first ever powered flight on another planet

Andrew Griffin April 19, 2021



Data sent from the Martian surface by the helicopter showed that it had flown up into the air, hovered for **30 seconds**, before touching down again safely.

It makes history as the first time a rotorcraft has flown on another planet, and the first time a spacecraft has conducted a controlled flight of any kind.

But it also marks the beginning of a “month of Ingenuity”, in which the space agency will look to fly further and longer across the surface.



Images sent from the Ingenuity’s navigation camera, mounted on the bottom of the craft, showed its shadow as it flew over the surface.

The Perseverance rover – which carried Ingenuity to Mars and served as the relay to send data back to its engineers – also took a picture that showed the helicopter taking off.

<https://finance.yahoo.com/news/nasa-mars-helicopter-flight-ingenuity-105624411.html>



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Volocopter overhauls branding in wake of continued investor interest HEADLINE

NEWS JOE PESKETT APRIL 19, 2021



European-based Volocopter recently demonstrated its global growth course to investors and secured **€200 million in fresh capital**.

Now, with a new brand identity from the design and branding experts at Strichpunkt, the company is also preparing itself for the communication challenges of the future. The branding approach emphasizes above all Volocopter's leadership claim in the field of urban air mobility. After a multi-stage selection process, Strichpunkt Design 2020 has secured the branding budget for the eVTOL developer Volocopter.

Together, Strichpunkt and Volocopter are presenting the new corporate design, the website, and the digital brand portal. Work is also underway for applying the modular design system across three dimensional spaces. The visual leitmotif for the corporate design is "Connecting Perspectives", now visible on the new company website.

<https://www.commercialdroneprofessional.com/volocopter-overhauls-branding-in-wake-of-continued-investor-interest/>

Airborne International Response Team awarded grant Scott Simmie Apr. 19th 2021



An organization dedicated to using drones for emergencies and disaster response has been awarded a grant from the US government. A news release says the funds will be used to "support drone operations within federal, state, and local public safety agencies and emergency services organizations."

The [Airborne International Response Team](#) (AIRT) is all about using #dronesforgood. And part of that mission is to ensure that people who are using drones for these purposes are comprehensively trained to make the most of these machines during an emergency.

AIRT's [DRONERESPONDERS](#) program will be helping to implement training standards developed by NIST – The National Institute of Standards and Technology. The NIST method involves precise flying and gimbal control to "look" into multiple carefully positioned plastic buckets and



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clearly identify letters at the bottom of each bucket. If you've done it, you get it. If not, [here's a video showing the NIST process](#).

It's a great training system for improving piloting skills...The NIST method also allows those flights to be measured against the benchmarks of speed and accuracy.

<https://dronedj.com/2021/04/19/airborne-international-response-team-airt-awarded-grant/#more-55853>

20Apr21

AgEagle Acquires Measure, on Path to Offering End-to-End Drone

Solutions Miriam McNabb April 19, 2021



The combination cash and stock transaction for Measure, valued at **\$45 million**, is the latest move in publicly traded AgEagle Aerial Systems (NYSE American: UAVS) efforts to "become the company of choice for end-to-end drone solutions."

AgEagle was founded in 2010 as a services provider to the agriculture industry. Measure was founded in 2014 as a [drone services provider](#) with a franchise model. Both companies have evolved with the drone industry: AgEagle now offers drone manufacturing and development services, drone delivery services, and software and services for the agriculture sector. AgEagle acquired multispectral sensor company [MicaSense](#) in January of this year, bringing them into the sensor space.

Measure's [inspection services business](#) was acquired by AeroDyne in 2019: since then, the company has focused on their SaaS drone operating solution, Ground Control. "Ground Control is a cloud-based, plug-and-play operating system that empowers pilots and large enterprises to operate drone fleets, fly autonomously, collaborate globally, visualize data and integrate with existing business systems and processes." Measure has "Focused initially on commercial applications for drones, including agriculture, infrastructure, construction and insurance. Measure has also expanded into the government and military domain and recently announced a project with the U.S. Air Force." <https://dronelife.com/2021/04/19/ageagle-acquires-measure-on-path-to-offering-end-to-end-drone-solution/>

Tactical drone, powered by solar panels and hydrogen fuel cell, flies 24h Garrett Reim
19 April 2021



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The US Naval Research Laboratory flew a Hybrid Tiger unmanned air vehicle for more than 24h in November 2020, its longest flight demonstrated. The electric UAV was powered by a hydrogen fuel cell and solar panels on its wings, as well as using energy harvesting techniques, such as soaring on thermal updrafts, the laboratory said on 14 April. The demonstration took place at Aberdeen Proving Grounds in Maryland.



Hybrid Tiger being launched with a winch system

“The flight was effectively a performance test in worst-case conditions: temperatures falling below zero degrees Celsius, winds gusting to 20kt and relatively little solar energy as we approached the solar solstice 21 December,” says Richard Stroman, a mechanical engineer from the Naval Research Laboratory Chemistry Division. “Despite all of that, Hybrid Tiger **performed well**.” Engineers with the Naval Research Laboratory expect it could fly **more than two days continuously** in better weather and sunlight. The laboratory plans such a demonstration later this spring.

The Hybrid Tiger is powered by a high-pressure hydrogen fuel tank and fuel cell system during the night and high-efficiency photovoltaic solar panels during daylight.

“The program’s researchers are also developing **energy-aware power management algorithms**, which vary operational modes and generate a vehicle navigation strategy based on weather forecasts and locally observed opportunities for energy harvesting,” says the Naval Research Laboratory. “Autonomous soaring, for example, is used to gain altitude from thermal updrafts when they are available. Hybrid Tiger combines multiple power sources with different advantages to achieve extreme endurance.” <https://www.flightglobal.com/military-uavs/tactical-drone-powered-by-solar-panels-and-hydrogen-fuel-cell-flies-24h/143358.article>

Amazon buys nine Atlas 5 launches for Kuiper broadband constellation April 19, 2021 Stephen Clark



Amazon has selected United Launch Alliance’s Atlas 5 rocket for nine missions from Cape Canaveral to deploy satellites for the Kuiper internet constellation, a fleet designed to eventually number more than **3,200 spacecraft**, the companies announced Monday.



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The missions will lift off from ULA's facilities at Cape Canaveral Space Force Station. Amazon and ULA — a 50-50 joint venture between Boeing and Lockheed Martin — did not disclose how many satellites will fly on each Atlas 5 mission.

The Kuiper network will beam low-latency Ka-band broadband services to customers between 56 degrees north and 56 degrees south latitude. Half of the Kuiper network's **3,236 satellites** must be launched by mid-2026 for Amazon to maintain network authorization from the Federal Communications Commission. <https://spaceflightnow.com/2021/04/19/amazon-buys-nine-atlas-5-launches-for-kuiper-broadband-constellation/>

Altavation Provides On-Demand Nationwide Drone Imaging for Real Estate April 20, 2021 News



Altavation is an aerial imaging provider supporting several of the nation's leading real estate agencies. Drone photography captures breathtaking landscape views, memorable indoor videos, and shows off the most beautiful aspects of the home's exterior.

Real estate agents from across the country can easily order this service through an online website. With prices starting at only ninety-five dollars and a media return-rate of seventy-two hours at the latest, Altavation is both affordable and accessible.

"Homes with drone images sell 68% percent faster." The National Association of REALTORS states that "72% of homeowners prefer their agent uses drone imaging." Successful real estate agents use drones 3.5 times more often than less successful agents according to a study performed by SoldByAir.

With fully FAA licensed and insured pilots, Altavation makes sure they follow all legal guidelines when flying in addition to providing the highest quality of aerial media. Drone imaging is a **'game changer'** and will alter the future of competition within the nationwide real estate market. https://uasweekly.com/2021/04/20/altavation-provides-on-demand-nationwide-drone-imaging-for-real-estate/?utm_source=rss&utm_medium=rss&utm_campaign=altavation-provides-on-demand-nationwide-drone-imaging-for-real-estate&utm_term=2021-04-20



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21Apr21

As Mars helicopter flies, Russian institute looks at drones for Venus David Kaminski-Morrow 20 April 2021

Space agency Roscosmos is planning to launch the Venera-D mission towards the end of this decade, which would mark the first landing on the planet since the Soviet era. The Moscow Aviation Institute says one option is to use drones to obtain data on cloud layers at different altitudes or explore specific areas of surface interest.

Two senior academics, Viktor Vorontsov and Mikhail Yatsenko, presented the proposal during the 45th Korolev Readings event that outlined the prospects for developing a 15kg multi-rotor vertical take-off aircraft capable of lifting 60% of its weight as a payload, but with dimensions small enough to fit into the Venera spacecraft.



NASA's 'Ingenuity' rotorcraft hovering above the surface of Mars on 19 April 2021

One or several such rotorcraft could be placed within a spherical descent vehicle similar to the Vega craft used for Venusian landings in the mid-1980s which carried balloon probes for transmitting data.

"The design of the Vega-type machine allows up to **seven** multi-rotor aircraft to be deployed to the Venusian atmosphere at the same time," says Yatsenko. The next stage will involve carrying out more in-depth studies to consider the choice payload candidates – such as physical and chemical analyzers, video cameras, and ground-penetration equipment.

<https://www.flightglobal.com/aerospace/as-mars-helicopter-flies-russian-institute-looks-at-drones-for-venus/143361.article>

INTERDRONE 2021 TO BE HELD IN-PERSON LATER THIS YEAR April 21, 2021 Sally French The Drone Girl Events



2020 was a rough year for the drone conference industry, as nearly all of them were either postponed, moved to a virtual format or [cancelled completely](#). It was especially disappointing for fans of Interdrone as 2020 was set to be the first year that it would move from its usual Vegas location to a new spot in Texas. It



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will be held at the Hyatt Regency in Dallas, Texas August 10-12, 2021.

August is set to be a spicy month for the drone industry. AUVSI XPONENTIAL 2021 will run on the heels of Interdrone 2021 from Aug. 16-19 at the Georgia World Congress Center in Atlanta, Georgia. Then, the 5th World of Drones and Robotics Congress will run on the other side of the world in Australia from Aug. 18-19. And September will follow strong — and return to Vegas — with the Commercial UAV Expo Americas from Sept. 7-9.

<https://www.thedronegirl.com/2021/04/21/interdrone-2021-to-be-held-in-person-later-this-year/>

Wingcopter in Japan: Partnership with ANA HD Trials Drone Delivery to Remote Islands

Miriam McNabb April 20, 2021



In a **first foray** of [Wingcopter](#) in Japan, the German drone manufacturer and service provider has partnered with All Nippon Airways (ANA Holdings Inc, ANA HD) to trial drone delivery to the island communities of Japan.

This is the latest big news from Wingcopter, which has risen rapidly in the drone delivery domain. Earlier this year, the company announced **a \$22 million funding round**: last year, Wingcopter scored critical partnerships [with UPS](#) and [Merck](#).

Now, this new partnership is building a drone delivery network. “ANA HD is providing insights gained from decades of aviation experience that is helping Wingcopter, in full compliance with local aviation regulations, succeed in the unique flight conditions of Japan,” says a joint press release. “Wingcopter is providing support in terms of training pilots, mission planning, operation design and maintenance. <https://dronelife.com/2021/04/20/wingcopter-in-japan-partnership-with-ana-hd-trials-drone-delivery-to-japans-remote-island-communities/>

Xwing Conducts Fully Autonomous Gate-to-Gate Cargo Flight with Cessna Aircraft



[Xwing](#), a San Francisco startup developing technologies for self-flying aircraft, announced that it has completed what it called **the world's first** fully autonomous demonstration flight of a commercial cargo aircraft from gate to gate. The Cessna Grand Caravan 208 pulled away from Xwing's hangar in Concord, California, taxied, took off, landed and returned to the gate



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entirely on its own. The flight, which took place in February, was remotely monitored from the hangar's mission control center.

Xwing has developed a [unique software stack](#) that integrates with onboard flight control systems to allow regional aircraft to navigate, take off and land without human involvement. The company, which plans to market the system to logistics companies with air cargo requirements, is going through **a lengthy process** to get its retrofit approved by the Federal Aviation Administration. https://www.uasvision.com/2021/04/19/xwing-conducts-fully-autonomous-gate-to-gate-cargo-flight-with-cessna-aircraft/?utm_campaign=Energy%20Drone%20%26%20Robotics%20Coalition%20Content&utm_medium=email&hsmi=122651450&hsenc=p2ANqtz-9lyKEmRujec_K_SIRi-xFwWUFG1XNKSemdOPFhtxCZXu1q47xSLK33FgJ1ltScOnyP6LliWaaDfrNB8u6UUSMPeIXs4g&utm_content=122651450&utm_source=hs_email

AeroVironment Awarded \$45 Million Option for Switchblade Tactical Missile Systems

April 20, 2021 Military



[AeroVironment, Inc.](#) today announced the U.S. Army has exercised an option on its Lethal Miniature Aerial Missile Systems (contract for additional Switchblade® 300 tactical missile systems for the Army and **for export to an allied nation**. The \$44,961,751 contract option increases the total value of the contract to **\$122,523,677**. Delivery will take place over a two-year period.

AeroVironment received the contract option on March 16, 2021, and it will be managed by the U.S. Army Contracting Command – Redstone Arsenal and the U.S. Department of Defense Foreign Military Sales program.

Switchblade is back-packable and rapidly deployable from ground platforms, including a multipack launcher, providing warfighters with rapid-response force protection and precision strike capabilities up to 6 miles from its launch location. Its high precision, combined with specialized effects and patented “wave-off” feature, results in the capability to minimize or even **eliminate collateral damage**. https://uasweekly.com/2021/04/20/aerovironment-awarded-45-million-option-for-switchblade-tactical-missile-systems-under-u-s-army-contract/?utm_source=rss&utm_medium=rss&utm_campaign=aerovironment-awarded-45-million-option-for-switchblade-tactical-missile-systems-under-u-s-army-contract&utm_term=2021-04-21



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Incredible video shows drones creating scannable QR code in the sky Ishveena Singh

Apr. 21st 2021



On April 17, about 1,500 drones took over Shanghai skies to commemorate the first anniversary of a Japanese video game's launch in China. The brilliant aerial dance of the drones brought the characters of the role-playing game *Princess Connect! Re:Dive* to life and narrated how the game worked.

The choreography ended with the drones forming a giant scannable QR code in the sky, **prompting viewers to download and install the game on their smartphones.**

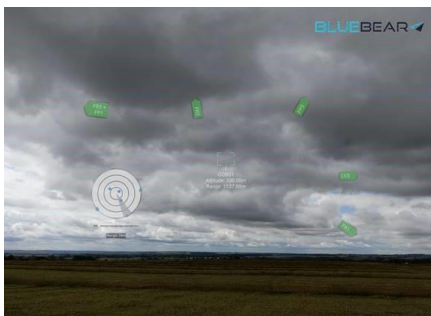
Twitterati was quick to point that the marketing stunt gave off *Blade Runner 2049* vibes. It is a neo-noir sci-fi film set in a dystopian Los Angeles saturated with marketing campaigns. In the movie, glitzy, in-your-face holographic advertisements and drone-projected ads light up the entire city, constantly prompting passersby to consume more.

<https://dronedj.com/2021/04/21/drone-qr-code-marketing/>

22Apr21

Heads-Up glasses help operators to visualize drone swarms HEADLINE NEWS JOE

PESKETT APRIL 22, 2021



The Heads-Up technology allows an operator, wearing AR glasses, to see where all the drones in the swarm are and visualize their health status and other parameters. Individual drones can be selected for a more detailed view on the system status.

This technology is particularly useful for drone swarm operators, and safety pilots, especially when multiple drones are returning to a single landing area. When operating BVLOS, the system provides valuable information and context as to where the drones are, and in poor weather could be vital to safe operations.

The next evolution of the software will add external data sources such as ADSB to enhance the situational awareness picture for the safety pilots and operators. The technology has been

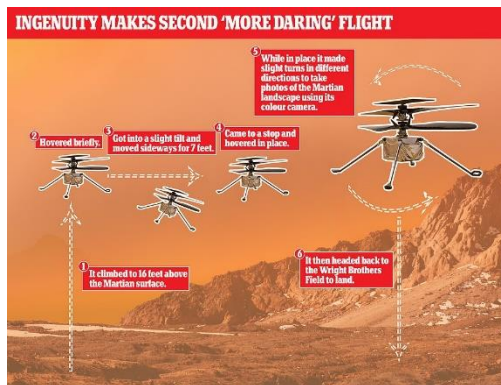


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developed with joint funding from the Defense and Security Accelerator and in conjunction with DSTL. <https://www.commercialdroneprofessional.com/heads-up-glasses-help-operators-to-visualise-drone-swarms/>

NASA's Ingenuity helicopter successfully completes its second flight RYAN

MORRISON FOR MAILONLINE 22 April 2021



[NASA](#)'s Ingenuity Mars helicopter 'went big' with its second flight, reaching new milestones with a higher altitude, flying to the side and grabbing another black-and-white photo of its shadow.

The US space agency said it climbed up to **16ft** above the surface, hovered, tilted slightly and then moved sideways 7ft. When in position it hovered again to take a series of color photos before landing.

Ingenuity made its first historic flight on Monday April 19, going up 10ft, hovering, snapping a photo, and returning to the newly named 'Wright Brothers Field'. Mission project lead, MiMi Aung, said every image of the helicopter on Mars is special, but the most iconic is the one taken by the craft showing its shadow on the surface, something Ingenuity replicated with the second flight.

NASA scientists say they plan to push Ingenuity 'to the limit' with every test flight between now and the end of the flight window in mid-May. <https://www.dailymail.co.uk/sciencetech/article-9499167/NASAs-Mars-helicopter-going-bigger-bolder-TODAY.html?ito=push-notification&ci=137473&si=26726678&ai=9499167>

PUBLIC SUPPORT FOR DRONE DELIVERY RAPIDLY INCREASING, WITH 89% IN

FAVOR April 22, 2021 Sally French The Drone Girl News



Public support for drone delivery has dramatically changed. These days, nearly 9 in 10 people are eager for delivery drones to help run errands for them — at least according to the results of one new survey conducted by Virginia Tech researchers. In contrast, previous surveys conducted in the U.S. found public support for drone delivery to be far lower. A [November 2019 Hawthorn Group survey](#) found that 51% of Americans said they would support neighborhood deliveries, but 49%



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felt they were too dangerous. And [a June 2020 study from the Consumer Technology Association](#) found that only 49% of consumers rate autonomous delivery technologies as somewhat or very favorable.

More than half of respondents said they “like drone delivery a great deal”, as opposed to the 26% who said they like drone delivery “a moderate amount” and the 8% who “like it a little.” Only 7% reported negative sentiment across three categories of dislike.

The survey is of note in that it only talked to residents of **Christiansburg, Virginia**, which is the site of the first service in the U.S. to deliver goods directly to residences on demand via drone-delivery company Wing. It suggests that people might fear an unfamiliar technology, but — as soon as it’s familiar — there’s little reason to fear it, in most cases.

<https://www.thedronegirl.com/2021/04/22/public-support-drone-delivery-wing/>

New rules allowing small drones to fly over people in U.S. take effect Reuters David Shepardson April 21, 2021



The Federal Aviation Administration said final rules announced in December took effect on Wednesday allowing for small drones to **fly over people and at night**, a **significant** step toward their eventual use for widespread commercial deliveries.

The FAA said its long-awaited rules for the drones will address security concerns by requiring remote identification technology. Previously, small drone operations over people were limited to operations over people who were directly participating in the operation, located under a covered structure, or inside a stationary vehicle - unless operators had obtained a waiver from the FAA.

U.S. Transportation Secretary Pete Buttigieg said Wednesday the rules "are an important first step in safely and securely managing the growing use of drones in our airspace, though more work remains on the journey to full integration" of drones.

Drone manufacturers have 18 months to begin producing drones with Remote ID, and operators will have an additional year. <https://www.reuters.com/business/aerospace-defense/new-rules-allowing-small-drones-fly-over-people-us-take-effect-2021-04-21/>



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L.A. Drone Pilot Avoids Prison 2021-04-15 UAV Expert News



The pilot of an [illegally operated drone](#) that hit a Los Angeles Police Department helicopter last year has been fined **\$500** and sentenced to **one year's probation**. Andrew Rene Hernandez was sentenced Monday after pleading guilty to a single misdemeanor charge of unsafe operation of an unmanned aircraft in January. It was the **first time** a drone operator was charged under the **federal statute**. He could have received one year in federal prison.

The charges resulted from a [flight](#) conducted by Hernandez shortly after midnight on Sept. 18, 2020. Hernandez said he launched his [DJI Mavic Pro](#) to investigate police activity at a nearby Hollywood pharmacy. While an LAPD Airbus Helicopters AStar was flying above the pharmacy at approximately 12:35 a.m., its pilot saw and unsuccessfully attempted to avoid the drone which struck the helicopter, damaging its nose, antenna, and bottom cowl.

<https://www.ainonline.com/aviation-news/general-aviation/2021-04-13/la-drone-pilot-avoids-prison>

US Air Force starts MQ-9 Reaper upgrades to keep UAV relevant against sophisticated foes Garrett Reim 21 April 2021

The US Air Force has started upgrades to its General Atomics Aeronautical Systems MQ-9 Reaper fleet. The intelligence, surveillance and reconnaissance aircraft was originally used for operations against terrorists and insurgents but has since shown to be vulnerable to surface-to-air missile batteries.



The MQ-9 program office is wrapping up fleet upgrades to diminish command-and-control jamming. It is also increasing onboard electrical power and developing a new open architecture to integrate new payloads in response to emerging threats.

The service says it also plans to upgrade the electro-optical/infrared camera and expand the types of weapons it can carry. Recently, General Atomics demonstrated a countermeasures pod, intended to help protect from surface-to-air missile attacks. The USAF has also experimented with tracking ballistic missile launches and shooting down incoming cruise missiles. The service is looking at long-endurance surveillance of Russia and China. The February deployment to Romania is not far from the Russian border.

The USAF believes that these upgrades will keep the MQ-9 relevant to **the end of its projected service life in 2035**. By then, the service aims to have a stealthier replacement UAV, designed



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specifically to counter threats from Russia and China. That aircraft has been dubbed **MQ-Next** and is in the early stages of development. <https://www.flightglobal.com/military-uavs/us-air-force-starts-mq-9-reaper-upgrades-to-keep-uav-relevant-against-sophisticated-foes/143403.article>

New Skydio 3D scan of cell tower is pretty amazing Scott Simmie Apr. 22nd 2021



Skydio, the largest US manufacturer of consumer and Enterprise drones, is getting closer to moving its 3D Scan software from beta to a publicly available version.

When it comes to inspection, depending on what's being inspected, some people

want high resolution photos. But there are instances where more is required, such as a complete scan of the structure as a 3D model. Such scans let you see the big picture and drill down to any aspect of a scanned object where you'd like a closer look. Those scans can also be used in conjunction with other software for such tasks as volumetric calculations.

The cool thing about Skydio 3D Scan is that it doesn't really involve much operator skill. You simply draw a polygon around the object of interest and press "Go" and the Skydio 2 will do the rest.

But what about a *really* challenging structure? One where there's likely a ton of RF interference that might mess up many other drones? Skydio says its drones are immune to interference, and this scan pretty much proves it. This video appears on the [Skydio blog](#) and contains an explanation of why this particular job would be so challenging for more conventional drones:

Since the structure is made of metal and, by nature, emits significant amounts of electromagnetic interference, a manual drone would have to rely on long standoff distances and expensive zoom lenses to capture the necessary footage of the tower. The signals emitted by these towers can interfere with GPS positioning, disorient the drone's navigational systems, and cause compass errors, which all significantly increase the likelihood of an expensive manual drone crash. Not to mention, there are typically many obstacles around the tower, like trees, buildings, wires, and poles that can also make 3rd party GPS flight automation tools incredibly difficult to use. The high training and pilot skill requirements needed to fly a manual drone create barriers to entry for internalizing and scaling successful drone operations.



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We look forward to seeing more 3D scans and trying out the software ourselves. See the video: <https://dronedj.com/2021/04/22/skydios-3d-scan-software-just-blew-our-mind/>

Flirtey implements Kongsberg technology for FAA BVLOS drone delivery Certification April 21, 2021 News



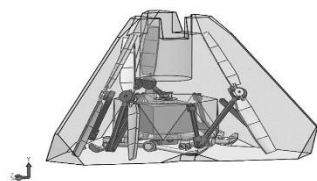
Kongsberg Geospatial and Flirtey announced today that the Kongsberg Geospatial IRIS airspace situational awareness application has been implemented by Flirtey within their autonomous software platform that conducts BVLOS flight operations. Flirtey has conducted more than 6,000 flights to date.

The Kongsberg Geospatial IRIS airspace visualization technology enables multiple drones and sensor feeds to be monitored simultaneously by a single remote operator and provides real-time calculation of aircraft separation and communications to enable BVLOS operations. IRIS provides real-time 2D and 3D visualization of all airborne track and weather data, as well as cues, alerts and warnings to enable **a single operator** to monitor the complex airspace environment.

Flirtey is focused on **completing the FAA's certification process**, in addition to scaling its operations in New Zealand (where the company's technology already has regulatory certification) and expanding US production of delivery drones to meet growing demand. https://uasweekly.com/2021/04/21/flirtey-implements-kongsberg-geospatial-iris-airspace-awareness-technology-to-enable-faa-certification-for-bvlos-drone-delivery-operations/?utm_source=rss&utm_medium=rss&utm_campaign=flirtey-implements-kongsberg-geospatial-iris-airspace-awareness-technology-to-enable-faa-certification-for-bvlos-drone-delivery-operations&utm_term=2021-04-22

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Ingenious Ingenuity Paves Way for Follow-On Mars Rotorcraft Guy Norris



Getting the vehicle to the surface of Mars will require ingenious packaging concepts such as this MSH hexacopter storage design. With arms and rotors folded origami-like into the aeroshell, the vehicle would be deployed by extending its elements either by linear—or telescoping—motions, or by unfolding uses hinged sections.



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For its second flight test on April 22, Ingenuity climbed to 16 ft. and hovered briefly before executing a lateral maneuver. To perform this the flight control system commanded a 5-deg. tilt, allowing some of the thrust from the contrarotating rotors to accelerate the craft sideways for 7 ft. The final flight, if executed as planned, could see Ingenuity fly to a site almost 2,000-ft. away from the rover before attempting to return. https://aviationweek.com/defense-space/space/ingenious-ingenuity-paves-way-follow-mars-rotorcraft?utm_rid=CPEN1000003332045&utm_campaign=28118&utm_medium=email&elq2=a6df4b2f783f46889b98b26efabf62ba