
## UAS and SmallSat Weekly News

**Contents**





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**17Aug19**

## The FAA is Seeking Stakeholder Input on Recreational Drone Operator Testing

Miriam McNabb August 16, 2019

The passage of the FAA Reauthorization Package opened the way for new regulations for recreational operators which had previously been considered "model aircraft" and exempt from any new laws. The repeal was lauded by many in the defense industry and the commercial drone industry, who felt that similar aircraft should be subject to the same regulations, regardless of purpose. Perhaps most importantly, the repeal of Section 336 opened the way for all drones to be required to comply with Remote ID standards as they are developed, allowing for a more transparent view of the airspace and helping drone integration into air traffic management systems.

One of the more contentious topics raised was the issue of licensing or certification for remote pilots. FAA Reauthorization calls for recreational pilots to be subject to an aeronautical knowledge test, ensuring that all flyers understand the basic safety rules of flight. Model aircraft and recreational pilots advocacy groups, however, have called for the test to be easily accessible and not as comprehensive as that required for commercial operators, pointing out that a barrier to entry that is too high for young flyers will limit entry into the hobby – and limit potential innovators as hobbyists move into the commercial sector.

The FAA is developing the test, and asking for stakeholders to come forward and apply to participate in training and test administration. https://dronelife.com/2019/08/16/the-faa-is-seeking-stakeholder-input-on-recreational-drone-operator-testing/

## EHang to Build Autonomous Drone Network to Cover Chinese Metropolis Jason Reagan August 15, 2019

Residents of Chinese metropolis Guangzhou can soon expect to see autonomous drones flitting over the city after drone manufacturer EHang announced the launch of its first urban air mobility pilot city program this past week.

UAM is a low-altitude aviation transportation network that shuttles passengers and goods in what EHang officials describe as a "safe, fast, environmentally friendly, cost-efficient and intelligent way."



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EHang will assist Guangzhou officials in set-up of a command-and-control center to ensure that multiple AAVs flying simultaneously in the city can remain in the air in a safe manner and can potentially respond to urban emergencies. A corporate release states:

"EHang plans to use the pilot program in Guangzhou to test more flight routes and vertiports based on practical application scenarios before moving into commercial operations. Next, EHang plans to work with partners to expand the operations to cover more areas in Guangzhou and transport a wider variety of high-value low-weight goods, including blood and organs for emergency medical use." https://dronelife.com/2019/08/15/ehang-to-build-autonomous-drone-network-to-cover-chinese-metropolis/

## FAA Approves Kansas Department of Transportation for First BVLOS Drone Flight August 14, 2019 FAA & Drone Laws News

The Kansas Department of Transportation (KDOT) received permission to conduct the first ever beyond-visual-line-of-sight (BVLOS) drone operation in the nation leveraging only onboard detect-and-avoid systems. This is the first-ever FAA authorized operation to fly without a requirement for visual observers or ground-based radar.

In collaboration between Kansas State University Polytechnic Campus, Westar Energy, Iris Automation and KDOT, the IPP team will fly a nine-mile track to evaluate technologies to inspect power lines in rural Kansas.

"The ability to fly BVLOS missions without ground-based radar or visual observers is a significant advancement, and Westar Energy views this as an opportunity to play a key role in shaping the future of UAS operations within the utility industry," said Mike Kelly, Westar Energy Senior UAS Coordinator.

The Applied Aviation Research Center on the K-State Polytechnic Campus, which assisted in development of the safety case that ultimately led to FAA approval, will be responsible for the training and flight operations with a cross-functional team from the KDOT IPP. Flights will take place over the next few months, providing the FAA with much-needed data on true BVLOS activity. https://uasweekly.com/2019/08/14/faa-approves-kansas-department-of-transportation-for-first-bvlos-drone-flight/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_08_15_2019&utm_term=2019-08-15



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## Researchers crashed drones into test dummies, and here's what they found Aug 15 Lee Roop lroop@al.com

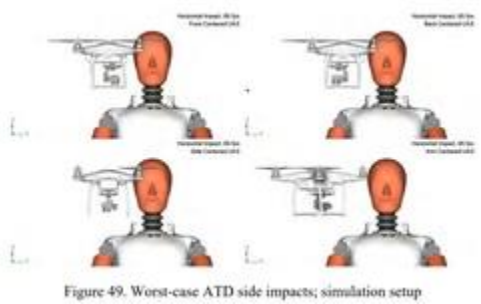

Figure 49. Worst-case ATD side impacts; simulation setup

*This illustration shows how scientists tested the results of impacts of unmanned aerial vehicles during a broad safety study.*

A study on the public risk from drones led by an Alabama university has arrived at few conclusions, because of the wide variety of unmanned aerial vehicle available and the many ways they can collide with humans.

But the study led by the University of Alabama in Huntsville suggests a methodology for future analysis of collision injuries. It found the bigger and "stiffer" the drone, the greater the risk of injury to a human during a collision. The worst-case scenarios used in current regulations are very hard to re-create in live tests, suggesting that rules based on those scenarios may be too conservative.

The study was conducted by the Alliance for System Safety of UAS through Research Excellence (ASSURE). The ASSURE research team included Mississippi State University, the National Institute for Aviation Research at Wichita State University and Ohio State University.

Researchers conducted more than 512 impact tests and simulations using 16 different multi-rotor and fixed-wing drones. The drones carried various kinds of payloads ranging in weight up the 13 pounds.

Study director Stephen P. Luxion said "Earlier testing of injury data strongly supported our assessment that long-standing fatality data was overly conservative and largely not applicable to injuries resulting from impacts by more elastic (drones)."

"The injury impacts were controlled impact tests of the worst case, using those variables capable of transferring the most energy to a human," said David Arterburn, director of the Rotorcraft Systems Engineering and Simulation Center at UAH and leader of the investigation. "Even in these controlled studies, slight variations of the vehicle orientation or location of impact with the human, just prior to impact, reduced the injury potential. These results showed that these worst-case impacts are very difficult to achieve, even under controlled impact test



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conditions." https://www.al.com/news/2019/08/researchers-crashed-drones-into-test-dummies-and-heres-what-they-found.html

**19Aug19**

## AFRL's robotic pilot flies Cessna for 2 hours 16 AUGUST, 2019 FLIGHTGLOBAL.COM

GARRETT REIM LOS ANGELES

The US Air Force Research Laboratory and Dzyne Technologies have developed a robotic system that successfully flew a 1968 Cessna 206 for 2h during a demonstration at Dugway Proving Ground in Utah on 9 August.

To fly the aircraft, Robopilot grabs the yoke, pushes on the rudders and brakes, controls the throttle, flips switches and reads the dashboard gauges in the same physical way a pilot would, says AFRL. To maintain situational awareness, it uses sensors, such as a GPS and an Inertial Measurement Unit device. A computer processes information from those devices to decide the best way to control the aircraft.

"Imagine being able to rapidly and affordably convert a general aviation aircraft, like a Cessna or Piper, into an unmanned aerial vehicle, having it fly a mission autonomously, and then returning it back to its original manned configuration," says Alok Das, senior scientist with AFRL's Center for Rapid Innovation. "All of this is achieved without making permanent modifications to the aircraft."

The installation involves replacing a pilot's seat with a frame holding equipment necessary to control the aircraft, including actuators, a robotic arm, sensors, cameras, power systems and various other electronics. https://www.flightglobal.com/news/articles/video-afrls-robotic-pilot-flies-cessna-for-2-hours-460333/

## Romanian Engineers Have Created a Fully Functional Flying Saucer Tim McMillan

Aug 7 2019

The "All-Directional Flying Object" is a proof of concept that's the result of more than two decades of engineering work.



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Without question, the All-Directional Flying Object, or ADIFO, looks exactly like a stereotypical flying saucer.

In his first interview with American media, inventor Razan Sabie said the ADIFO isn't the work of audacious mad science. "The aerodynamics behind this aircraft is the result of more than two decades of work and is very well reasoned in hundreds of pages and confirmed by computer simulations and wind tunnel tests."

Operating like a quadcopter, ADIFO handles "take-off, landing, and slow speed maneuvers" through four ducted fans. A pair of jet engines located at the rear of the flying disc provide horizontal thrust. The dual-propulsion system can vector individually, affording a high degree of agility during level flight. A pair of lateral thrust nozzles located on each side of the disc, allow it to rapidly push itself sideways in either direction, or quickly rotate while in flight.

Sabie and Taposu unveiled a 4-foot operational prototype in spring of this year. Sabie claims the unusual shape "is 'natural born' for supersonic flight." The design should "reduce shock waves on the disk's surface" thus preventing the occurrence of sonic booms during transonic flight. He believes the disk will be capable of "sudden lateral transitions and sudden yaw," in addition to "smooth transitions during subsonic to supersonic flight."
https://www.vice.com/en_us/article/kz4qey/romanian-engineers-have-created-a-fully-functional-flying-saucer-adifo

## Successful Drone Tests Add to County UAS Experience Aug 16, 2019


*Drone prepares to deliver cargo to Coast Guard cutter during July test flight*

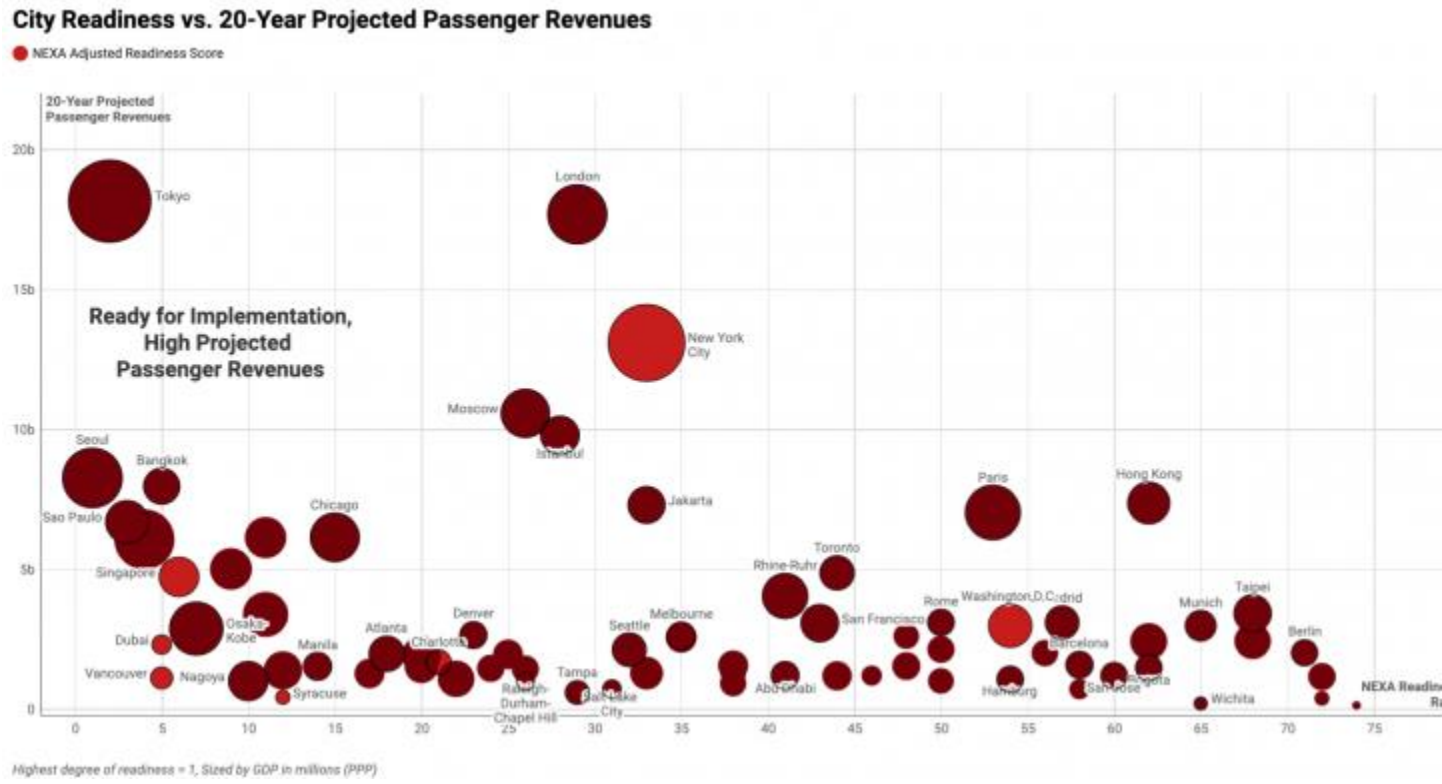
NORTH CAPE MAY - Cape May County was the venue for July 24-25 flight tests by the Defense Logistics Agency in its mission to utilize unmanned aircraft systems to deliver emergency supplies to first responders after disasters. The tests were led by American Aerospace Technologies, Inc. and its subsidiary company Sky Scape Industries.

The recent flights tested whether a UAS could launch and land vertically carrying a payload consisting of First Strike Ration meals and a case of water totaling 50 pounds. In one, a custom-designed UAS took off from the ferry terminal and moved land-to-land carrying the payload. On

its second mission, the aircraft carried the same payload from the terminal to a Coast Guard cutter off the coast of Cape May. Both target locations were located approximately one mile away from the takeoff zone.

Nate Ernst, the operation's mission commander, stated “The DLA is looking to new methods of emergency response, and we are honored to help provide solutions that may one day save lives utilizing unmanned aircraft systems.”
https://www.capemaycountyherald.com/news/government/article_d3a99c62-c02d-11e9-9835-0b087eb908d0.html

## New study details global urban air mobility costs, revenues and infrastructure requirements August 16, 2019 Philip Butterworth-Hayes Urban air mobility




The first global, detailed, city-by-city analysis of urban air mobility investment costs, revenue potential and infrastructure requirements has been completed by Washington DC-based corporate and strategic financial consultancy NEXA Advisors.

NEXA has researched infrastructure requirements for 74 cities around the world which are most likely to pioneer urban air mobility operations. The upfront infrastructure investments for UAM



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heliports, vertiports, mega-ports and airport landing sites – including passenger services, security and UAS traffic management services – will require more than USD30 billion in capital between today and 2040 but will generate direct income of around USD 318 billion, say the report authors, and total direct and indirect income of around USD600 billion.

"The full potential of UAM will be achievable only with higher levels of automation of eVTOL flight, dynamic airspace access through geofencing, UATM oversight, sense-and-avoid surveillance and vehicle interoperability." https://www.unmannedairspace.info/urban-air-mobility/new-study-details-global-urban-air-mobility-costs-revenues-and-infrastructure-requirements/

## US Air Force Research Laboratory tests high power microwave technology to bring down drones August 13, 2019 Jenny Beechener Counter-UAS systems and policies

The US Air Force Research Laboratory is testing high-power microwave technology in collaboration with US manufacturers to provide deployable Counter-UAS systems. The technology can operate over a wider range than existing net gun or firearm systems. Two programs are underway, intended to respond to short-range targets and long-range threats. The Tactical High-Power Operational Responder (THOR) is designed to pursue multiple short-range targets, while the Counter-Electronic High-Power Microwave Extended-Range Air Base Air Defense (CHIMERA) is a more powerful transportable system designed to take out middle to long range targets.

AFRL is running an accelerated development program funded by the Office of the Secretary of Defense and began testing prototype equipment in the first half of 2019. Tests have been carried out at White Sands Missile Range in New Mexico and Kirtland Air Force Base in Albuquerque in cooperation with equipment suppliers including Raytheon, BAE Systems, Leidos and Verus Research. The AFRL hopes to field an initial development system in 2020 under a $15 million program. https://www.unmannedairspace.info/counter-uas-systems-and-policies/us-air-force-research-laboratory-tests-high-power-microwave-technology-to-bring-down-drones/

**20Aug19**

## Rocket Lab launch fulfills initial block of BlackSky Earth-imaging satellites August 19, 2019 Stephen Clark

The fourth and last spacecraft in BlackSky's initial flock of commercial Earth-imaging microsatellites successfully launched Monday aboard a Rocket Lab Electron rocket with three



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other payloads, setting the stage for the final assembly and launch of at least 20 more BlackSky orbiting surveillance platforms starting later this year.

The 123-pound BlackSky Global 4 spacecraft lifted off aboard Rocket Lab's kerosene-fueled Electron booster at 8:12 a.m. EDT Monday, riding into orbit with three CubeSats — two for the U.S. Air Force and one for the French startup UnSeenLabs.

Powered by nine Rutherford engines generating nearly 50,000 pounds of thrust, the 55-foot-tall Electron launcher climbed through a cloud deck and arced east from Rocket Lab's Launch Complex 1 on Mahia Peninsula, a locale on the eastern coastline of New Zealand's North Island.

The privately-developed rocket shed its first stage around two-and-a-half minutes after liftoff. A data recorder was programmed to capture information on the first stage's re-entry, informing Rocket Lab's initiative — **announced earlier this month** — to eventually recover and reuse Electron boosters. https://spaceflightnow.com/2019/08/19/rocket-lab-launch-fulfills-initial-block-of-blacksky-earth-imaging-satellites/

## Researcher Flies Drones Over Iceland to Study Mars Aug. 20, 2019

*Paul Knightly prepares a drone for flight in Iceland.*

Iceland is a lot like Mars in some ways. Both are polar deserts that have landscapes shaped by volcanism and ice. The island nation makes a good analogue for scientists studying surface features of the red planet.

That's what drew Paul Knightly, a doctoral candidate at the Arkansas Center for Space and Planetary Sciences, to Iceland this summer. Knightly is studying features called patterned ground, which are geometric shapes formed by freezing and thawing of the soil in periglacial regions. The unique features can be found in Iceland's interior and on the surface of Mars, but Iceland is easier to get to. "They come in a wide variety of forms, but what I am specifically looking for are sorted circles, and then some larger polygonal shapes that have also been identified on Mars."

Knightly conducted 35 drone survey flights over a period of eight days at various sites across Iceland, examining patterned ground, polygonal terrain and both active and relic glacial

moraines. Next he'll compare his findings to patterned ground seen on Mars. The research was funded by Europlanet, a consortium of European space and planetary scientists.
https://news.uark.edu/articles/49676/researcher-flies-drones-over-iceland-to-study-mars?mkt_tok=eyJpIjoiWVRReFpUQmhPRFUwTkRNeiIsInQiOiIwTkJRS3R5OHBibWpKZDJSU1RQRmloRCtpbjRGK1g3bkFYcnJDUGFWQ29NTFYxQlFnclwvNG1TMVNpeGF6XC9MSFdMMVlDVE5SYWZWeVUxMmlaV1o0Sk9HS3M3bU5XMnZXMHc5T28zNkl1SmZEeEJpSHlyYWFXWWZmcmVjY1lrdWYxIn0%3D

## Witnessing the Growth of the Commercial Drone Market in Europe Will Tompkinson

April 17, 2019


A small confession: since I'm more focused on the downstream applications of data collected by drones, I tend to leave commentary on flight regulations to the people that specialize in that area, and there are plenty of people who have a lot to say about all of it, especially in North America. Given all this talk about regulation, it's easy to get caught up in the hysteria about how it's changing and restricting the commercial application of drone technology.

Thankfully, this year's Commercial UAV Expo Europe has yet again demonstrated numerous pragmatic approaches to the technology in Europe which are being positively impacted and enabled by current and future drone regulation.

Michal Mazur of PwC opened the conference outlining 7 trends for the coming year. These were:

1. Generation of UAV related revenues by telcom operators
2. Energy grid operators scaling up autonomous detection of failure modes
3. UAV photogrammetric/lidar capture becoming standard insight tools for mining
4. UAV urban mobility pilots spreading across Europe
5. UTM model(s) to be confirmed and rolled out
6. Rapid growth of counter-drone solutions market
7. BLVOS waivers and regulation becoming standard in Europe

Trends 1-3 indicate that the technology has become a mature application and can be relied on to deliver results in a meaningful way for numerous projects. Regulation will of course impact this further maturation, which is why the update on the European regulatory state-of-play in subsequent presentations by Koen De Vos on U-Space (automated UAS Transportation Management protocols) and Lorenzo Murzilla on the JARUS SORA framework were so essential.

They provided both optimism and validation of trends 4-7.
https://www.expouav.com/news/latest/commercial-drone-market-growth-europe/?mkt_tok=eyJpIjoiT1dVd05USTJPRE0yTlRRNSIsInQiOiJrZ0dJaDM1NGV3VTlrdXFPXC8rRE5vVXpqN0ExcVZFMTZ1R2VWaW16eTM1dEZzZU5ucEgrM2pYQ3VMdUdaMUZGYjZtNjJZTGdcL1o5R09DeStENDhmODlKXC9TRExxYlllVHdWK1djNkVQVTMzcFViRyszRTJzMHlrb1VURXJPXC84MjIifQ%3D%3D

## Hybrid Gas-Electric Drone Completes BVLOS Flight 19 Aug 2019

The first civilian BVLOS (beyond-visual-line-of-sight) flight by a UAV under FAA Part 107 rules has been successfully undertaken in Alaska.

It was carried out by the University of Alaska Fairbanks and the Alaska Center for Unmanned Aircraft Systems Integration. The team selected the Skyfront Perimeter 4 VTOL UAV for the mission. It was conducted under FAA Part 107 rules. The FAA scrutinized and approved all aspects of the flight including system setup, planning and GCS operation and equipment.

The long-range hybrid drone successfully flew a round-trip flight along 4 miles of the Trans-Alaska pipeline with consent from the Alyeska Pipeline Service Company and monitored by the FAA. Maintaining an above-ground altitude of 400 feet, the UAV utilized the Casia collision avoidance system by Iris Automation, to navigate the mountainous terrain. Echodyne's ground-based detect and avoid systems observed the flight, monitoring climbs of 1000 feet on 45-degree slopes. The Perimeter 4's telemetry and control links were uninterrupted throughout the mission.

The flight marks an important advancement in safe integration of UAVs into USA national airspace. Watch the video: https://www.unmannedsystemstechnology.com/2019/08/faa-part-107-bvlos-flight-by-hybrid-gas-electric-drone/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=2972d86295-eBrief_2019_Aug_20&utm_medium=email&utm_term=0_6fc3c01e8d-2972d86295-119747501

## To prevent 'window peeping,' Prairie Village advances ordinance that restricts drones Haye Kesteloo Aug. 20th 2019

Here we go again… To prevent 'window peeping,' Prairie Village, Kansas advances an ordinance that restricts drones. If the law is approved next month, violators can face up to a $500 fine or one



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month in jail. Just to be clear, the FAA is the only body in the US that controls the airspace. However, time and time again, we see towns making up their own drone restriction rules, and the same goes in Prairie Village, Kansas.

Under the proposed ordinance, it would be illegal to fly a drone:

- Near people without their consent, or in a way that could hurt someone.
- Over an event with more than 100 people, without the consent of the venue owner or event organizer.
- Over property that the operator does not own or have consent to occupy.
- To conduct surveillance.
- While under the influence of drugs or alcohol.
- When the drone is equipped with a weapon.
- In a reckless or careless manner.

Violators could be charged with a class "C" misdemeanor and could receive a $500 fine or face one month of jail time. Interestingly, the proposed law would only apply to recreational drone pilots, and not to licensed commercial operators such as construction or media companies.

How would the city enforce such a drone-restricting ordinance? This is what Jordan said:

*How do we investigate when we arrive and (the drone) is no longer there? So that's the enforcement challenge: It's finding out who the operator was and what the intent was.*

On a larger scale, you have the Uniform Law Commission working on proposed legislation to balance property owners' rights versus the drone operators' needs.
https://dronedj.com/2019/08/20/prairie-village-advances-ordinance-restrict-drones/#more-18546

## IDRLC to Host Microdrone Race Event with Largest US Prize Pool to Date August 19, 2019 Drone Racing


The IDRLC is hosting a drone racing competition in New Jersey from September 28th through the 29th for microdrone pilots and enthusiasts. The event will be hosted in Flemington at the Drone Zone racing facility and education center for FPV Drone Flying. Depending on the total participants, pilots will have an opportunity to win a portion of the largest US prize pool ever in microdrone racing, worth up to $10,000.



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"We are excited to host a microdrone racing event that is more family oriented and caters to pilots of all ages," said Dan Javan, President and Founder of the IDRLC. "While the pilots are there to compete for the largest prize pool of its kind in the country, it is also a way for them to reconnect with the reason that several of them got into drone racing to begin with — having fun and establishing the sport. We reward talent at face value irrespective of demographics like age, gender, and nationality. If you're talented and want to participate, you are more than welcome to join us."

All pilots competing must be a member of the IDRLC. Membership applications are being accepted online at https://idrlc.com/membership-registration/.
https://uasweekly.com/2019/08/19/idrlc-to-host-microdrone-race-event-with-largest-us-prize-pool-to-date/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_08_20_2019&utm_term=2019-08-20

## Boston is Getting its Very First Drone Film Festival this Fall staff August 20, 2019

Boston is DRONELIFE's hometown – so we can't wait for this new drone festival!

The inaugural Boston Drone Film Festival is set to take place the weekend of November 15th. It will include three panel discussions, eight workshops, and two demonstrations. It was founded by Jovan Tanasijevic, co-founder and director at Above Summit, one of the first production studios specializing in drone cinematography to come out of New England. Their team of drone pilots, videographers, photographers, and editors is responsible for content that has appeared in programs on networks such as AMC, NBC, and Netflix, along with films/TV series including The Society, NOS4A2, and Knives Out.

Submissions are open until September 15th for the categories listed at:
https://dronelife.com/2019/08/20/boston-is-getting-its-very-first-drone-film-festival-this-fall/

**21Aug19**

## NASA testing urban drone safety over Corpus Christi August 20, 2019

CORPUS CHRISTI, Texas (AP) — NASA is flying drones over a southeast Texas city to test the safety of the unmanned devices in a dense urban environment.



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The tests are part of a four-year project with the Federal Aviation Administration to develop a national drone traffic management system.

The drones are flying at altitudes between 200 and 400 feet. A city presents obstacles that can reduce line of sight and hinder communication. Urban weather conditions can hamper flight, and cities often lack safe landing options.

NASA spokesman Darryl Waller said Tuesday that the agency is gathering and reviewing data with the aim of addressing these issues. He says the Corpus Christi testing has gone well and will conclude Friday. https://www.chron.com/news/texas/article/NASA-testing-urban-drone-safety-over-Corpus-14364431.php#photo-18133297

## Salina Hosting UAS Tech Forum KSAL Staff August 20, 2019

The City of Salina is hosting the 2019 Unmanned Aerial System Tech Forum this week. The conference is the largest annual event produced by the Unmanned Arial Systems Cluster Initiative of the U.S Small Business Administration to support the growth of the UAS industry within the two states. The 2019 Conference is the sixth UAS-focused conference in the region. Previous locations include Stillwater (twice),Oklahoma City, Wichita, and Broken Arrow.

The local effort was coordinated by the Salina community Economic Development Organization with planning and financial support by Kansas State Polytechnic, Kansas Department of Transportation Avation, City of Salina, Saline County, Salina Airport Authority and the Salina Area Chamber of Commerce/Visit Salina. An estimated 175 visitors will take part in the two-day Forum.

The Cluster Initiative's mission is to accelerate the growth of the UAS Industry by enabling established companies and emerging entrepreneurs, in particular those located in Oklahoma and Kansas, to connect, work together and gain access to national technologies, global capital, advanced business models and global markets. https://www.ksal.com/salina-hosting-uas-tech-forum/

## Little Ripper deploys croc-spotting AI drones Aimee Chanthadavong August 21, 2019

The same artificial intelligence (AI) drone technology that the Little Ripper Group used for its shark detection drones is now being used to spot crocodiles in Queensland. The company was approached by the Queensland government to help keep beachgoers safe in the water and on land from crocodiles.



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The drone technology, dubbed the Little Ripper and designed together with the University of Technology Sydney, uses an AI system that was originally designed to detect sharks in real-time.The drone technology can differentiate up to 16 different types of marine life.

The technology also features a siren and speaker system and can also deploy flotation pods during emergency rescues to support up to four people.

The AWS cloud has been able to reduce latency of its video feeds from its drones from 10 seconds to 1 second, allowing life savers to view live video feeds from their smartphones.

Last summer, 51 drones were deployed around Australia to help spot rips and swimmers in distress. https://www.zdnet.com/article/little-ripper-deploys-croc-spotting-ai-drones/#ftag=RSSbaffb68

## EHang achieves early certification of UAS safety for AAVs

BUSINESS HEADLINE NEWS INTERNATIONAL MANUFACTURER NEWS REGULATION ALEX DOUGLAS AUGUST 21, 2019

EHang has confirmed it has become one of the world's first companies to achieve certificate of unmanned aircraft system safety level II for AAVs through tests of the UAS fence.

The tests demonstrated that both the passenger-grade EHang 216 and the non-passenger-grade EHang Falcon can automatically and precisely sense the UAS fence by alerting and avoid it by hovering, landing off or returning before entering the restricted area.

Zhang Zhengiuan, senior engineer at the Civil UAS Inspection Centre of CAST, commented: "Passing these tests further establishes EHang as the leader in the UAS fence technology and marks a breakthrough in urban air mobility space."

"Significantly, EHang's command-and-control system is more intelligent in managing the AAVs' flight routes, and with real-time remote communication via 4G and 5G telecom networks, their operation is simpler and safer than conventional drones manual-controlled by radio frequency within limited distances." https://www.commercialdroneprofessional.com/ehang-achieves-early-certification-of-uas-safety-for-aavs/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-310306-Commercial+Drone+Professional+DNA+-+2019-08-21



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## Impossible Aerospace claims US-1 is the first to cross north Nevada desert in one charge APPLICATION BUSINESS NEWS UNITED STATES ALEX DOUGLAS AUGUST 21, 2019

It completed the feat in repeated 72-minute flights across the playa on August 6. With and against the prevailing winds, the US-1 flew distances of 29 and 21 miles respectively.

Spencer Gore, CEO at Impossible Aerospace, said: "The US-1 is the first major breakthrough in drone performance since the introduction of the quadcopter. More importantly, is the first battery-electric aircraft to rival the performance of a conventionally powered system."

The firm said that although many electric aircraft have flown similar distances, the US-1 differs in that it uses propellers instead of wings to fight gravity, which requires more energy per mile but allows the aircraft to hover in place.

The flight was planned to avoid operations over people and protected wilderness areas.
https://www.commercialdroneprofessional.com/impossible-aerospace-claims-us-1-is-the-first-to-cross-north-nevada-desert-in-one-charge/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-310306-Commercial+Drone+Professional+DNA+-+2019-08-21

## AeroVironment secures $45m Raven B drone contract for US Army security force assistance APPLICATION BUSINESS NEWS UNITED STATES ALEX DOUGLAS AUGUST 20, 2019

It came from the United States Army for its Security Force Assistance Brigades (SFAB) and is expected to be delivered by January 2020.

The SFAB are specialized units with the core mission to conduct training, advising, assisting, enabling and accompanying operations with allied and partner nations.

Rick Pedigo, VP for sales and business development, said: "Raven is the most widely deployed small unmanned aircraft system in the United States Department of Defense's fleet."

In a report published by the United States Army in July, Sgt. Jordan Aguiar, a cavalry scout assigned to Alpha Troop of the 2nd Squadron, 101st Cavalry Regiment, said the Raven is more agile and less detectable than larger and more costly unmanned aircraft. It detailed how



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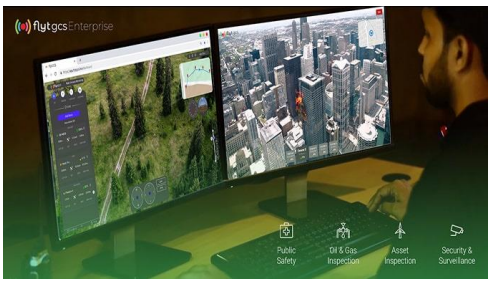
soldiers use it to conduct battlefield reconnaissance and provide their units with a greater level of security. https://www.commercialdroneprofessional.com/aerovironment-secures-37m-raven-b-drone-contract-for-us-army-security-force-assistance/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-310190-Commercial+Drone+Professional+DNA+-+2019-08-20

## Automate, Scale and Remotely Manage Enterprise Drone Fleet Operations August 20, 2019 News




Managing enterprise-wide drone programs is challenging – not only because of the reliance on skilled pilots & siloed operations but also because of the variety of stakeholders involved, across geographies and missions. Automating & scaling such commercial UAV operations requires unified, customized dashboards, real-time information sharing, sophisticated mission planning and remote access to payloads and data feeds.

The key to automating and scaling drone operations for such applications is the ability to remotely plan, control, view, execute, monitor, log and share drone missions. This, in turn, requires connectivity and control over 4G/LTE/5G, live HD video feeds, fleet management, survey planning, remote gimbal control, pre-flight checklists, geofencing, airspace compliance, image & video archives, and advanced waypoint and point-of-interest capabilities

FlytGCS Enterprise is designed to factor in the needs of a variety of stakeholders. The productivity, cost-effectiveness, and speed of drone missions in perimeter security, asset monitoring, utility inspections, emergency response, property surveillance, etc. can thus be significantly boosted – via the conversion of real-time information into well-informed decisions. https://uasweekly.com/2019/08/20/automate-scale-and-remotely-manage-enterprise-drone-fleet-operations/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_08_21_2019&utm_term=2019-08-21

## Aeromapper Talons Fly BVLOS Missions Over Turneffe Atoll Marine Reserve In Belize August 20, 2019 News

Two units of amphibian Aeromapper Talons were utilized successfully during a set of trials during an expedition to beautiful Turneffe Atoll in Belize, in a workshop lead by the Zoological



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Society of London and the Turneffe Atoll Sustainability Association. The drones, built by Canadian company Aeromao, were used to detect and document illegal fishing activities and ecology research toward conservation efforts. The Turneffe marine protected area in Belize, was delineated in 2012 but is difficult to manage, in part due to illegal fishing, its remoteness and high running costs.

The water-landing and waterproof fixed-wing, long-range, multi-camera drones were trialed to monitor and survey marine megafauna (such as turtles, dolphins, and sharks) but also as an exercise to gather evidence of illegal, unreported and unregulated fishing .

"The amphibious drone was able to fly to the site of interest at 110m altitude, gather intelligence and fly back very quickly. The UAV can fly up to one and half hours, which, flying at 62kph, is a considerable distance and area potentially covered for surveillance. The images highlighted that indeed illegal building work had been occurring. Without the UAV the conservation officers would have no way of knowing this and they were very excited at this revelation", states one of the conservation officers.

The current enforcement strategy on the Turneffe atoll involves patrols in small boats, around the atoll, to find illegal fishers. Systematic surveys for megafauna aren't regularly carried out, so the conservation officers tend to document animals they happen across on their patrol. However, boat fuel is very costly, and this limits the amount of area the conservation officers can patrol. The drones proved to be an exceptional low-cost solution to these challenges.
https://uasweekly.com/2019/08/20/aeromapper-talons-fly-bvlos-missions-over-turneffe-atoll-marine-reserve-in-belize/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_08_21_2019&utm_term=2019-08-21

**22Aug19**

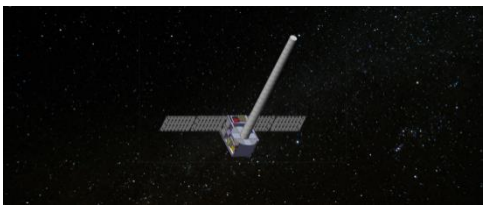
## New Russian heavy drone Altius-U takes off for the first time Pravda Report Aug 20, 2019

The Russian Defense Ministry unveiled a video of the first flight of the new unmanned aerial vehicle Altius-U. The new drone, with a weight of six tons, can stay in the air for more than 24 hours. The maiden flight of the Altius-U drone lasted for 32 minutes at an altitude up to 800 meters in fully automatic mode. All systems were working

normally during the test, and no malfunction was reported.

It can conduct reconnaissance activities with the use of optical, radio and radar systems. Altius-U belongs to the class of medium-altitude unmanned aerial vehicles of long flight duration. The drone is capable of performing the entire spectrum of reconnaissance missions. https://www.youtube.com/watch?v=dGxTfYdytrs

## Viasat taps Blue Canyon Technologies to build Link 16 satellite Debra Werner August 19, 2019



*This is an artist's rendering of a Blue Canyon Technologies satellite equipped with Viasat's Link 16 communications terminal*

SAN FRANCISCO – Viasat selected Blue Canyon Technologies (BCT) to design and manufacture a cubesat for a U.S. Air Force test of a military communications terminal in low Earth orbit.

BCT announced plans Aug. 19 to build a 12-unit cubesat bus equipped with Viasat's Link 16 terminal to launch in 2020. U.S. military and NATO allies rely on Link 16, an encrypted radio frequency, to relay information in a line-of-sight from aircraft, ships and ground vehicles. If Link 16 terminals work on small satellites, they could relay military communications beyond a vehicle's line-of-sight.

"Blue Canyon Technologies is honored to participate in this important pilot project," George Stafford, BCT CEO and president, said in a statement. "To date, Link 16 technology has only been capable of line-of-sight communications. By demonstrating that Link 16 can operate in a space environment on small satellites, the U.S. military can gain beyond-line-of-sight tactical advantages on the battlefield and ultimately keep our troops safer." https://spacenews.com/viasat-taps-blue-canyon-technologies-to-build-link-16-satellite/

## US military drone shot down over Yemen Reuters Wed 21 Aug 2019

A US military MQ-9 drone has been shot down in Yemen's Dhamar governate, south-east of the Houthi-controlled capital Sana'a.

A Houthi military spokesman had earlier said that air defenses had brought down a US drone.



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It is not the first time a US drone has been shot down in Yemen. In June, the US military said Houthi rebels had brought down a US government-operated drone with assistance from Iran. US forces have occasionally launched drone and air strikes against the Yemen branch of al-Qaida, known as al-Qaida in the Arabian Peninsula.

It appeared the drone had been shot down by a surface-to-air missile operated by the Iran-aligned Houthi group. The other official cautioned that it was too early to tell who was responsible for the incident. https://www.theguardian.com/world/2019/aug/21/us-military-drone-shot-down-over-yemen

**23Aug19**

**DroneUp Makes Impact at InterDrone 2019** Amy Wiegand 757-657-4886

**Virginia Beach, VA (August 22, 2019)** -- DroneUp, LLC, a drone pilot service provider for aerial data collection, will showcase its *Mission Match*$^{TM}$ platform, connecting their clients' requirements to complete drone services at Booth #311 at InterDrone 2019; held September 3-6, 2019, in Las Vegas, Nevada.

CIO, Joe Fuller, will review why DroneUp's integration and customer service provides analysis to existing processes and how extending the clients' workforce with drone services is a cost-effective, safe and efficient method to gain data and reporting requirements.

Anthony Vittone, COO, will moderate a panel on growing your drone service business. Joining Anthony on the panel are Kathleen Swain, Senior Director, UAS Programs, AOPA; Andrew Dennison, Director of Enterprise Services, DroneDeploy; Tomer Kashi, CEO & Founder, SkyWatch.AI; and Derrick Ward, CEO, Hot Shots Aerial.

CEO, Tom Walker, will take a look at why we may be ignoring our best assets during his keynote presentation. Is it possible that we have become our own biggest roadblock to success? Has the constant debate about regulations obscured the value of present-day practical solutions? Tom will share the approach that has accelerated DroneUp's growth. https://www.droneup.com/

## First FAA-Approved Long-Range UAS Test Completed in Alaska ELWOOD BREHMER

ALASKA JOURNAL OF COMMERCE AUGUST 22, 2019


Pilots and scientists from the University of Alaska Fairbanks Alaska Center for Unmanned Aircraft Systems Integration conducted the first official beyond-visual-line-of-sight unmanned aircraft flight in the country approved by the Federal Aviation Administration.

The 30-minute flight on July 31 was conducted over a four-mile section of the Trans-Alaska Pipeline System in a sparsely populated area north of Fairbanks. About half of the flight was flown under true beyond-visual-line-of-sight conditions, according to ACUASI Director Cathy Cahill.

“Needless to say we were all very excited, and we were leading the country. That was the first (flight) where we didn’t have to have a human observer with their eyes on the aircraft. We couldn’t see the aircraft, but we knew everything about the it and the airspace around it.”

The unmanned aircraft center is an arm of UAF’s Geophysical Institute, where scientists conduct research on the aurora, Arctic climate conditions, earthquakes, volcanoes and the remote sensing technologies used in unmanned flights. https://www.govtech.com/fs/automation/First-FAA-Approved-Long-Range-UAS-Test-Completed-in-Alaska.html



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