## UAS and SmallSat Weekly News

**Contents**





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**8May21**

## How are Drones Used on Jobsites? – These are the Top Commercial Applications Miriam McNabb May 06, 2021

The latest report from Drone Industry Insights lists 237 commercial application examples.

Some companies focus on sectors: public safety, energy, or construction. Within those sectors, however, are a wide variety of ways that commercial drones can be applied. How exactly are enterprise customers in each sector using UAV?

In the energy industry, the top applications center around inspections: in construction, surveying and mapping is the primary use. Both sectors use the technology for both purposes, however – as well as a variety of other uses, including the emergence of drone delivery on some construction jobsites.

"In the **Energy** sector, roughly 83% of the time drones are used to carry out inspections that could be life-threatening to a human or would cost companies millions of dollars in lost revenue…. Another inspection industry is Real Estate, Rental & Leasing, and Industrial Plants (67%)," Alvarado writes.

"Meanwhile, in **Construction**, drones are mostly (80%) used for mapping and surveying (e.g. aerial planning, inventory management, topographic mapping, 3D reconstruction of sites or ongoing construction projects). This enhances worker safety, provides digital data that was not available before, makes project management more efficient, and speeds up projects while decreasing cost." https://dronelife.com/2021/05/06/how-are-drones-used-on-jobsites-from-droneii-these-are-the-top-commercial-applications/

## Virgin Orbit will livestream its first fully commercial launch Eric Mack May 6, 2021 PT

Richard Branson's midair satellite-launching outfit says it's now preparing for its next mission to launch six small satellites for three customers in June. The mission is nicknamed Tubular Bells, Part One after the smash 1973 Mike Oldfield album, which was the first record released by Branson's Virgin Records.



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A LauncherOne rocket carrying each mission's payload is lifted to a high altitude attached to the belly of a modified Boeing 747. Once at launch altitude, the jet drops the rocket, which then ignites to begin the rest of the trip to orbit, powered by a pair of engines that fire up in two stages.

The Tubular Bells mission will take off from Mojave Air and Space Port in California, with LauncherOne detaching at a drop point over the Pacific Ocean. On board will be three cubesats for the US Department of Defense, one for the Royal Netherlands Air Force and two more for SatRevolution, a Polish company building a real-time Earth observation constellation. https://www.cnet.com/news/virgin-orbit-will-livestream-its-first-fully-commercial-launch/

## FLIR Provides Additional Black Hornet Nano-UAVs to U.S. Army 06 May 2021 Mike Ball

FLIR Systems has been awarded an additional contract to provide the U.S. Army with its Black Hornet 3 Personal Reconnaissance Systems. The nano-UAVs are being used to augment the Army's squad and small unit-level surveillance and reconnaissance capabilities as part of the Soldier Borne Sensor program.

The U.S. Army began acquiring Black Hornet 3 UAVs in September 2018, and since then has placed orders totaling more than $85 million with FLIR for the nano-sized unmanned aircraft.

The combat-proven Black Hornet PRS is a lightweight, pocket-sized system that is designed for operations in contested environments. With almost silent flight and an endurance of up to 25 minutes, it can transmit live video and HD still images back to the operator. Its information feed provides soldiers with immediate covert situational awareness to help them perform missions more effectively. FLIR has delivered more than 12,000 Black Hornet nano-UAVs to defense and security forces worldwide. https://www.unmannedsystemstechnology.com/2021/05/flir-provides-additional-black-hornet-nano-uavs-to-u-s-army/

## Wisk, Blade to Partner on Air Taxi Ops Kate O'Connor May 5, 2021

Air taxi developer Wisk Aero has announced plans to provide up to 30 electric vertical takeoff and landing aircraft for short-distance routes in Blade Urban Air Mobility's U.S. network. Pending certification of its design, Wisk says the aircraft will be chartered by Blade while being owned, operated and maintained by Wisk. The partnership agreement also includes the



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formation of a working group to "engage with regulators and municipalities and pursue charging infrastructure and next generation air traffic control systems."

Blade currently offers flights in the Northeast and West Coast regions of the U.S. operating primarily helicopters and amphibious aircraft. Wisk, a joint venture between Boeing and Kitty Hawk, is currently developing the Cora autonomous eVTOL. The aircraft is expected to have a range of about 25 miles plus reserves and travel at approximately 100 MPH. According to the company, it has completed around 1500 test flights to date and plans to begin initial test flights in Blade's service areas "when possible." https://www.avweb.com/recent-updates/evtols-urban-mobility/wisk-blade-to-partner-on-air-taxi-ops/?MailingID=606&utm_source=ActiveCampaign&utm_medium=email&utm_content=Dassault+Unveils+Falcon+10X%2C+SpaceX+Lands+Starship+Prototype&utm_campaign=Dassault+Unveils+Falcon+10X%2C+SpaceX+Lands+Starship+Prototype+-+Friday%2C+May+7%2C+2021

## FAA To Host Second Virtual UAS Symposium Kate O'Connor May 5, 2021

The FAA has announced that it will be hosting a second virtual edition of its two-part unmanned aircraft systems symposium later this year. The first segment, called Episode III, is scheduled June 9-10 followed by Episode IV Sept. 14-15. As previously reported by *AVweb*, Episodes I and II were held in July and August 2020, focusing on UAS traffic management, global harmonization, the FAA's UAS Integration Pilot Program and public safety operations.

"The theme for this year's virtual event is 'Above and Beyond,'" the agency said. "Each episode will feature keynote presentations, expert panels, networking discussions, one-on-one meetings with experts in the FAA UAS Support Center, and sessions with live Q&A."

Episode III will highlight international operations, STEM, public safety operations, recreational drone operations and commercial drone operations. Episode IV is slated to cover UAS traffic management, technology, the FAA BEYOND program, advanced air mobility and international operations. More information about the symposium, which will be co-hosted by the Association for Unmanned Vehicle Systems International, can be found at faauas.auvsi.net/program. https://www.avweb.com/recent-updates/unmanned-vehicles/faa-to-host-second-virtual-uas-symposium/?MailingID=606&utm_source=ActiveCampaign&utm_medium=email&utm_content=Dassau



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## AUVSI Xcellence Awards: Swoop Aero Named Finalist for Humanitarian Drone Missions Miriam McNabb May 05, 2021

As the first part of AUVSI Xponential gets underway, the applications have been evaluated. At the AUVSI Xcellence Awards Swoop Aero has been named a finalist for their humanitarian drone missions for the third year in a row.

The Australian drone-powered logistics company is focused on humanitarian drone delivery including delivering vaccination and other medical supplies on the remote islands of Vanuatu. – and this year, has moved forward in offering COVID-19 vaccine supplies in Swoop Aero's African service areas. This year, Swoop Aero commenced operations in Australia, New Zealand and the United Kingdom to transport the COVID-19 vaccine and related health supplies including tests, results, PPE and routine medications with minimal human interaction.

The AUVSI XCELLENCE Awards honors individuals and organizations that are innovators in the unmanned systems industry with a demonstrated commitment to advancing autonomy, leading and promoting safe adoption of unmanned systems, and developing programs that use these technologies to save lives and improve the human condition.

Other finalists in the Humanitarian category are: **UNICEF African Drone & Data Academy (ADDA) / Virginia Tech; ALTI UAS (Pty) Ltd,** *ALTI Unmanned Aircraft Systems Operation Blacktip in Misool;* **DroneUp,** *Residential Drone Delivery of At-Home COVID-19 Test Kits;* **MissionGO,** *Completes Longest UAS Human Organ Delivery Flight;* **Northrop Grumman,** *Northrop Grumman Firebird with Overwatch Imaging Assists Cal Fire During 2020 Wildfire Season*

Winners will be announced at AUVSI Xponential on August 16-19, at the Georgia World Congress Center in Atlanta. https://dronelife.com/2021/05/05/auvsi-xcellence-awards-swoop-aero-named-finalist-for-humanitarian-drone-missions/

## Irish DJI Mini 2 pilot discovers three ancient logboats Bruce Crumley May. 7th 2021

Anthony Murphy was flying his drone in search of a bottle-nosed dolphin nicknamed Kevin. Instead, he found three ancient, possibly Neolithic Irish log boats on the floor of the River Boyne.

A professional writer and photographer during working hours, Murphy is also an avocational archeologist and drone enthusiast who publishes his findings on the Mythical Ireland Blog. He made the discoveries in his Drogheda hometown – about 56 miles north of Dublin – when strong oceanic tides had considerably lowered the Boyne's level.

*With the drone flying a short distance above the river, I noticed an object in the shallow low-tide water of the Boyne… I thought it looked suspiciously like a logboat or dugout canoe. I was aware that one such logboat had been discovered in this stretch of the river in 2016, and that boat turned out to be Neolithic in date, making it around 5,000 years old.*


Alas, archeological experts quickly checked the spot and said the boat had been previously reported and dated back to between 400 and 1654 AD. Undaunted, Murphy continued his flights over the Boyne and within three days turned up two more of the vessels. As news of the discoveries spread, Murphy (and logboats) gained international attention.

Logboats were long, narrow canoe-like craft made from a single tree hollowed out with axes. They began appearing in the region during the Neolithic era, with the youngest relic found dating to 1793 AD.
https://dronedj.com/2021/05/07/irish-dji-mini-2-pilot-discovers-three-ancient-logboats/#more-57403

## Sky Drone launches first G5-connected, RTF UAV Bruce Crumley May. 7th 2021


Hong Kong-based Sky Drone has revealed what it calls the world's first ready-to-fly drone controlled entirely via 5G mobile network connection. A traditional radio controller is not required for takeoff, landing, or in-flight navigation.

Sky Drone Mk1's 5G connectivity gives it virtually unlimited control range. In theory, the craft could be flown by a pilot half the world away. The company believes



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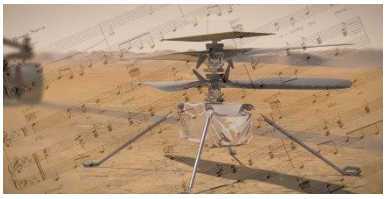
that liberty will be a huge asset for enterprise clients expected to be the Mk1's primary market – especially those often flying Beyond Visual Line of Sight missions.

Production of the Mk1 came in the wake of last August's partnership between Sky Drone and China Mobile Hong Kong, as the latter evolved its networks from G4 to G5 technologies. As part of that push, China Mobile created an innovation platform. Through that, various partners accompanied China mobile's tech evolution by adapting their remote capabilities that stood to benefit from 5G integration.

The 5G Mk1 requires only a data-enabled SIM-card from any major carrier in the world to connect. It can be controlled from a PC or tablet-based ground station with an optional joystick or gamepad. https://dronedj.com/2021/05/07/sky-drone-launches-first-g5-connected-rtf-uav/

**What does a drone sound like on Mars? Now we know** David MacQuarrie May. 7th 2021



For the first time, a spacecraft on another planet recorded the sounds of a separate spacecraft. The Perseverance rover used one of its two microphones to listen as the Ingenuity helicopter flew on April 30. The audio comes from a microphone belonging to the rover's SuperCam laser instrument. The laser zaps rocks to study their vapor with a spectrometer. Its microphone also records the sounds of the laser strikes, which can provide information on the physical properties of the rocks. But it can also listen to ambient noise, like the Martian wind. Or a Martian drone.

Perseverance was 80 meters away from the drone's takeoff point, and engineers were not sure it would actually hear anything. But the drone *drones* alright. The helicopter's blades spin at 2,537 rpm, and the sound is a little muffled by the thin Martian atmosphere. But you can still hear the drone faintly above the sound of those winds. "This recording will be a gold mine for our understanding of the Martian atmosphere."

Scientists made the audio easier to hear by isolating the 84 hertz blade noise from the background hum. It's loudest when the helicopter passes through the field of view of the camera. And here it is: https://dronedj.com/2021/05/07/what-does-a-drone-sound-like-on-mars-now-we-know/#more-57490



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## TSA Tests Drone Detection Technology at Miami International Airport *May 8, 2021* Homeland Security Today

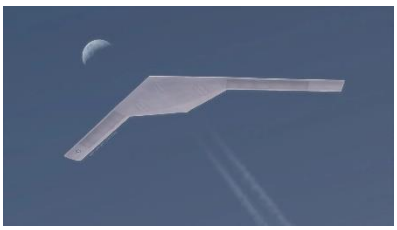
The Transportation Security Administration has selected Miami International Airport for its initial test of technologies that will detect, track, and identify drones entering into restricted airspace.

"The UAS threat to airports has increased exponentially over the last several years, which is why it is vital we begin assessing the effectiveness of UAS DTI technologies in live airport environments." said TSA Counter-UAS Capability Manager Jim Bamberger. "We are thrilled to partner with MIA on such a mission critical project that will pave the way for future technology assessments and help protect airports nationwide against UAS threats."

TSA chose MIA as the first UAS DTI testbed due to an ongoing perimeter intrusion technology pilot as well as the strong existing partnerships with the airport. https://www.hstoday.us/subject-matter-areas/airport-aviation-security/tsa-tests-drone-detection-technology-at-miami-international-airport/

**10May21**

## Global Hawk Drones To Be Retired In Favor Of Secretive Penetrating Spy Aircraft JOSEPH TREVITHICK MAY 7, 2021 THE WAR ZONE



The U.S. Air Force is looking to get rid of all of its remaining Block 30 RQ-4 Global Hawk drones in the next year or two. The service says that it plans to replace those unmanned aircraft with a mixture of alternatives, including "penetrating" platforms and "5th- and 6th-generation capabilities." Those terms generally refer to stealthy platforms able to get past hostile air defense works to conduct operations in denied areas. This comes amid an increasing number of reports that a new, secret stealth spy drone, commonly referred to as the RQ-180, which also looks set to act as a communications and data-sharing gateway, is close to entering operational service, if it hasn't already.

Air Force General Charles Brown, the service's Chief of Staff, offered these details in a hearing before the House Appropriations Committee on May 7, 2021.



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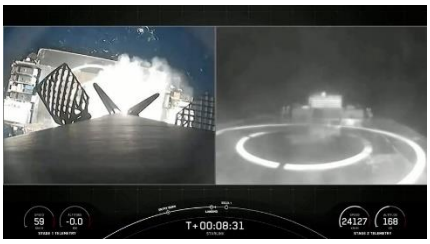
"Legacy ISR [intelligence, surveillance, and reconnaissance] platforms, once considered irreplaceable to operations, are often unable to survive or deliver needed capabilities on competition-relevant timelines.These legacy platforms must be phased out, with resources used to invest in modern and relevant systems." https://www.thedrive.com/the-war-zone/40505/global-hawk-drones-to-be-retired-in-favor-of-secretive-penetrating-spy-aircraft

## SpaceX sets booster reuse milestone on Starlink launch Jeff Foust May 9, 2021




WASHINGTON — SpaceX launched a set of Starlink satellites May 9 on a Falcon 9 whose first stage was making its tenth flight, a long-awaited goal in the company's reusability efforts.

The Falcon 9 lifted off from Space Launch Complex 40 at Cape Canaveral Space Force Station at 2:42 a.m. Eastern. The rocket's upper stage deployed its payload of 60 Starlink satellites into low Earth orbit nearly 65 minutes later.

The launch, the third in less than two weeks for SpaceX, brings the total number of Starlink satellites in orbit to more than 1,550. The company is gradually expanding its beta test program for the broadband internet service as the constellation grows. SpaceX noted on the launch webcast that it opened up that beta test program in the last week to people in Austria and France. https://spacenews.com/spacex-sets-booster-reuse-milestone-on-starlink-launch/

## Japan addresses safety standards, licensing and infrastructure requirements for 'flying cars' May 10, 2021 Jenny Beechener Emerging regulations, UAS traffic management news, Urban air mobility


Japan's transport ministry plans to establish standards on required performances and safety to put flying cars into practical use, as well as a licensing system, by the end of 2023, according to a report in the *Japan Times*.

In April this year, the ministry set up a dedicated department that will draw up guidelines as early as this autumn on procedures needed for companies to conduct test flights of vehicles currently under development.



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"The ministry hopes to establish related technologies and systems in 2023 and for such vehicles to start flying in safe areas where there are no people around. After gradually introducing such vehicles to transport goods, save lives at times of disaster and as a method of transportation in underpopulated areas and remote islands, the ministry plans to start flying car operations in urban areas in the 2030s. "The ministry ultimately aims to introduce vehicles that are cheaper than helicopters, easy to maneuver and fit for daily use.
https://www.unmannedairspace.info/emerging-regulations/japan-addresses-safety-standards-licensing-and-infrastructure-requirements-for-flying-cars/

## Asylon and Boston Dynamics Partner on Robotic Security Combing Air and Ground Drones Miriam McNabb May 07, 2021

PA-based Asylon has developed an automated drone solution for perimeter security. Now, through the partnership with robotic company Boston Dynamics, they'll add a "DroneDog" – the Boston Dynamics unmanned ground vehicle named Spot.

The automated Remote Perimeter Security platform is known as DroneCore and utilizes a security drone and a base station that autonomously replaces low batteries for 24/7 surveillance. "Through automated security patrols, the drone can integrate with sensors or detect anomalies by itself that require a response, such as intruders or overheating machinery, and enable human response teams to be prepared for potentially dangerous threats," says the company.

Now, the solution will add a "mobile and versatile" DroneDog, to provide customers with both automated ground and aerial surveillance. "Spot's legged design makes it capable of traversing uneven and unpredictable terrain with organic, life-like motion," says Asylon. The intelligent machines can support multiple payload options and deliver remote control, monitoring, and intelligence services. The DroneCore system can be controlled from anywhere in the world, and the video feed can be viewed in real-time." https://dronelife.com/2021/05/07/asylon-and-boston-dynamics-partnership/

## Royal Mail tests drone deliveries to Isles of Scilly May 10, 2021 News

The Government-funded project, which has been developed in partnership with DronePrep, Skyports, Consortiq Limited, the University of Southampton, Excalibur Healthcare Services and

Windracers Limited, will initially focus on delivering personal protective equipment and testing kits to the islands' most vulnerable and remote communities.

Parcels will be flown to the islands' airport in St Mary's by drone which can carry up to 220lb of mail at a time – equivalent to a typical delivery round. A smaller drone will then be used to transport items to several delivery points throughout the islands. The autonomous flight route involves being 70 miles out of sight before it reaches its destination.

Royal Mail said if the trial is successful, the technology will be considered to support postmen and postwomen delivering to remote areas across the UK. The trial will also examine what fuel efficiencies the drones could provide, as part of the company's drive to reduce emissions associated with its operations. https://uasweekly.com/2021/05/10/royal-mail-tests-drone-deliveries-to-isles-of-scilly/?utm_source=rss&utm_medium=rss&utm_campaign=royal-mail-tests-drone-deliveries-to-isles-of-scilly&utm_term=2021-05-10

## India broadens drone tests of COVID-19 vaccine deliveries to BVLOS Bruce Crumley May. 10th 2021

The move comes a little over a week after Indian authorities cleared trial delivery flights in Telangana state. Groups of drone and tech industry companies, health experts, and government agencies participating in the last-mile testing were initially required to respect Visual Line of Sight limitations. Now those have been lifted amid the piking spread of COVID-19 across India.

The BVLOS waiver arrived earlier than anticipated and reflects the unprecedented gravity of India's current COVID-19 wave. On Monday alone, India added 366,161 new COVID-19 cases to its 22.6 million. Reported deaths for the day were 3,754, lifting the total to 246,000.

Under the new directives, trial flights will be held in successive phases over a 24-day period. For the two days, groups of four drones will make test VLOS deliveries covering a range of distances. Those sorties will shift to BVLOS mode for a second block of four days. Onboard sensors will monitor adherence to vaccine cold chain requirements, and BVLOS flights will be limited to a maximum altitude of 400 feet above ground

level. https://dronedj.com/2021/05/10/india-broadens-drone-tests-of-covid-19-vaccine-deliveries-to-bvlos/#more-57568

**11May21**

## Pentagon orders small Israeli drones for indoor special operations

Seth J. Frantzman
17 hours ago

JERUSALEM — The Pentagon has awarded Israeli company Xtend a contract to deliver dozens of small unmanned aerial systems for use indoors and in urban environments by special forces in the Navy, Marine Corps and Army. The department ordered the Skylord Xtender in partnership with the Israeli Defense Ministry.

The system is one of several drones produced by Xtend, which also makes the Skylord Griffon UAV meant to destroy other drones — a capability recently demonstrated at Yuma Proving Ground in Arizona. The system is already operational with Israeli special forces.

Xtend describes its products as "optimized for the urban warfare challenges, including Close Quarters Battle counter drone interception, counter improvised explosive device missions, and subterranean operations."

Xtender is designed for indoor use to penetrate buildings while not risking the lives of troops in an environment where IEDs may be present or enemies could be hiding. It provides situational awareness using 3D video and navigation as well as gesture control and artificial intelligence, according to a video by the company.

The technology provides operators who don't have flight experience the ability to "control cutting-edge drones within seconds of training," said Ido Bar-On, vice president of business development and sales. "The challenge is [that] you don't have GPS or lighting indoors and may have furniture or open windows with turbulence, and also propeller wash and the physics of flying in a confined space." https://www.airforcetimes.com/unmanned/2021/05/10/pentagon-orders-small-israeli-drones-for-indoor-special-operations/



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## MissionGO & Minnesota Team Transport First Human Pancreas via Unmanned Aircraft May 11, 2021

**BALTIMORE –** MissionGO, a leader in unmanned aircraft logistics; LifeSource, the organ procurement organization serving the upper Midwest; and Mercy Hospital today announced the first-ever test flight carrying a human pancreas via an Unmanned Aircraft System conducted on May 5.

This historic flight transported a research pancreas from Mercy Hospital in Coon Rapids, flew a 10-mile circuit over the Mississippi River, then returned to Mercy Hospital. This flight demonstrated the viability, value, efficiency gains and delivery speed of lifesaving organs via UAS within the Twin Cities metro area.

The pancreas was also monitored for the entire flight, using MediGO's hardware and software platform to provide the real-time location status of the organ to all critical stakeholders. A biopsy was performed by LifeSource on the pancreas before and after the flight to study the impact of UAS transportation on a human organ, revealing no changes in pre and post flight biopsies. In addition to the organ payload being tracked with MediGO, MissionGO's aircraft was monitored with AlarisPro's new flight data recorder known as the AlarisAIR which provides flight telemetry data through both cellular and Bluetooth networks.

"LifeSource has set an audacious goal of transplanting 1,000 organs in one year by 2027; last year, we facilitated 603 transplants," said Susan Gunderson, LifeSource Founder & CEO.
JDaniel@MissionGO.io

## Drone soccer tournaments are coming to the United States: registrations open

Ishveena Singh May. 11th 2021

Remember drone soccer? The sport that combines the competitiveness of soccer and the thrill and fun of flying drones? Well, come July, Colorado will play host to the US's first-ever drone soccer tournaments!

Two teams of three to five drone pilots enter a caged arena with drones that are also enclosed in plastic spheres, hence giving them a soccer ball look. The cages ensure that the drones can crash without any damage to the machines. The pilots stand just outside the field of play.



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A designated "striker" tries to pilot the drone through the opponent's goal – a brightly lit hoop suspended at the opposite end. The opponents, meanwhile, try to stop the drone by attacking it. The standard playing area fits inside a classroom or a gymnasium – a 3 x 6-meter netted arena.

The thrilling indoor team sport looks a lot like Quidditch, according to Kyle Sanders, vice president of education and development for US Drone Soccer – a national community of STEM-focused schools and community organizations. Sanders says: *I would have even called it drone hockey, because it's a fun, physical game.*

The first drone soccer tournament in North America will take place in Colorado Springs this July during the Rocky Mountain State Games. The competition is open to both adult and youth (under-17) categories.
https://dronedj.com/2021/05/11/drone-soccer-us-tournament/#more-57676

## Australia commits $28M to detect unmanned activities, trial drone deliveries

Ishveena Singh May. 11th 2021

Australia has decided to invest $28 million to establish the Emerging Aviation Technology Partnerships program. It will fall under the umbrella of Australia's National Emerging Aviation Technologies Policy Statement, which provides a consistent and coordinated approach to managing the drone sector. Drone technologies are estimated to support more than 5,000 jobs and a $14.5 billion increase in Australia's GDP over the next 20 years.

Deputy Prime Minister Michael McCormack explains in a press statement: *The program will establish strategic partnerships with industry to support aviation manufacturing jobs and encourage the adoption of emerging aviation technologies to address community needs, particularly in regional Australia. These partnerships will trial new service delivery models to create regional passenger and cargo links, providing benefit for regional communities and their economies while also increasing business efficiency, and reducing carbon emissions.*

McCormack, who is also the minister for infrastructure, transport and regional development, further points to the need for developing a Drone Rules Management System.
https://dronedj.com/2021/05/11/australia-drone-program-funding/#more-57678

## NASA's Ingenuity Space Copter Performing Beyond Expectations Mark Phelps May 11, 2021

With Ingenuity having met its early goals, NASA has expanded the experiment to an "operational demonstration," planned to stretch Ingenuity's range and explore different parts of the planet from above the surface of Mars. To date, Ingenuity had been taking off and landing close by the Perseverance rover "mother ship," which landed at the red planet's Jezero Crater in February.

Early goals for Ingenuity were limited to testing how high and how far the aircraft could go, progressively stretching the envelope with every flight. The demonstration flights were expected to end in early May. Ingenuity is also expected to fly in support of Perseverance's ongoing mission. NASA says the helicopter could explore nearby terrain to send back video of scientific interest or to help map suitable terrain for the rover to navigate. These additional unplanned flights are "a bonus and not a requirement for Perseverance to complete its science mission," according to a NASA statement. https://www.avweb.com/aviation-news/nasas-ingenuity-space-copter-performing-beyond-expectations/?MailingID=612&utm_source=ActiveCampaign&utm_medium=email&utm_content=NASA+s+Ingenuity+Beating+Expectations%2C+Avionics+Sales+Still+Up&utm_campaign=NASA+s+Ingenuity+Beating+Expectations%2C+Avionics+Sales+Still+Up%2C+Wednesday%2C+May+12%2C+2021

## Hydrogen cells extending drone flight time to two hours-plus Bruce Crumley May. 12th 2021

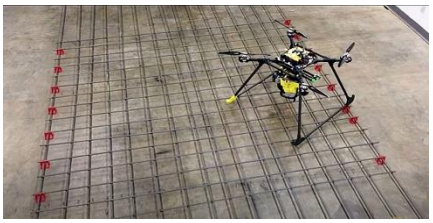

The news reflects advances in hydrogen cell power development that, for now, is too expensive for any but specialized business operators to consider. Drones powered by the technology are listed anywhere from $2,200 to $3,800.

In exchange, however, owners get three times the life of LiPo batteries of the same weight. That is, two hours or more time aloft. Hydrogen cells also have the appeal of being ecologically friendly compared to standard technologies.

But the cost limits the economic rational of hydrogen cells largely to companies running mapping, inspection, or security operations in industrial, agricultural, energy, or defense sectors, where vast areas need to be surveyed in a single flight. That is the kind of customer Korea's Doosan Mobility is targeting with the rollout of its new, second-generation DS30W. The

drone provide power to cover over 50 km total, or 4,000 km$^2$ from point of departure. That compares to 10 km and 300 km$^2$ ranges by standard batteries.
https://dronedj.com/2021/05/12/hydrogen-cells-extending-drone-flight-time-to-two-hours-plus/#more-57724

## Working drones: Quadcopters that tie rebars David MacQuarrie May. 12th 2021



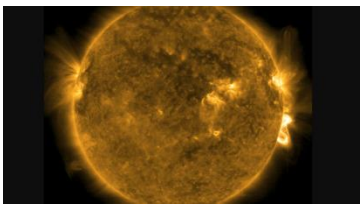
There are machines that can do this repetitive and painful work, but they need 40-foot trailers to haul them to the construction site and cost hundreds of thousands of dollars. The SkyTy system promises huge improvements in both speed and cost.

The concept uses a number of drones. A mapper drone flies over the site, building a picture of the rebar mesh and identifying the intersections. Using those coordinates, multiple drones can be deployed to do the actual tying and automatically keep out of one another's way. SkyMul says its system can mean an 84% reduction in labor, increase production speeds, and cost 32% less.

A human must keep track of logistics like swapping out batteries and keeping the tying wire loaded, but he or she doesn't actually have to fly the drones. The drones can keep assembling for 25 minutes on one charge and make about 70 to 80 ties.

It's a little difficult to see the tying process at work in the previous video, but here's a little better look at the clever knotting system. It's quick. https://dronedj.com/2021/05/12/working-drones-quadcopters-that-tie-rebars/#more-57791

## University of Illinois taps Blue Canyon for scientific cubesat mission Debra Werner May 12, 2021



SAN FRANCISCO – The University of Illinois Urbana-Champaign awarded a contract to Blue Canyon Technologies to provide cubesats for a space mission sponsored by the National Science Foundation. Under the contract announced May 12, Blue Canyon Technologies, a Raytheon Technologies subsidiary, will provide a pair of six-unit cubesat buses plus an engineering development unit for a mission designed to shed light on heating of the sun's corona.



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The mission, called Virtual Super-resolution Optics with Reconfigurable Swarms (VISORS), seeks to study the regions in the sun's corona where energy is released. "Blue Canyon Technologies is providing key components in a program that will, for the first time, reveal individual energy-release sites in the solar corona to test theories of coronal heating," said George Stafford, Blue Canyon Technologies co-founder and CEO.

If all goes as planned, the two cubesats will travel in 2023 to low Earth orbit. Once there, they will fly 40 meters apart and create a distributed telescope. The lead spacecraft will be equipped with optical elements and the trailing spacecraft will contain the detector.

The University of Illinois is working with NASA Goddard Space Flight Center and several universities on the VISORS program including the Georgia Institute of Technology, Stanford University, Washington State University, the Ohio State University, Purdue University, the University of California San Diego, New Mexico State University, Montana State University and the University of Colorado. Blue Canyon Technologies is scheduled to deliver cubesats to Georgia Tech for instrument integration in 2022. https://spacenews.com/university-of-illinois-taps-blue-canyon-for-scientific-cubesat-mission/

## Drones Take Flight to Disinfect Sports, Entertainment Venues Jason Reagan May 12, 2021

A Pittsburgh-based drone company has received the FAA's blessing to use drones to disinfect public venues. The federal agency granted a "137" certification for AERAS Drone Disinfectant Solutions, allowing the company to sanitize sports and entertainment venues such as stadiums or concert arenas against COVID and other viral pathogens. The special certification is usually reserved for spraying pesticides on crops. Company officials say this is the first such certification for COVID-related disinfection. AERAS will use patented electrostatic technology to disperse EPA-approved approved disinfectants.

"We're grateful for the support and trust we've received from the FAA in making our company the only one legally and legitimately certified to use drone technology to kill COVID-19," said Justin Melanson, co-founder and director of research and development at AERAS. "We're absolutely thrilled to be able to provide a more effective and efficient means to deploy a venue's preferred EPA-approved disinfectant." https://dronelife.com/2021/05/12/drone-take-flight-to-disinfect-sports-entertainment-venues/

## infiniDome's – Enabling Drone BVLOS Operations for Defense & Critical Missions Webinar May 13, 2021 Events

Join us on Tuesday May 25th at 11:00 AM EDT as we host a lively industry discussion about Enabling Drone BVLOS Operations for Defense & Critical Missions. Our webinar panel of highly respected UAV industry leaders will discuss how GNSS signals are enabling new applications of unmanned systems, the key vulnerabilities to be addressed and the steps needed to ensure safe and efficient BVLOS operations.

Demand for UAVs is growing exponentially across defense as well as civil and commercial organizations. Applications range from military operations and logistics missions to delivery of commercial packages, medical supplies, surveying and mapping. This webinar will present real-world views of GNSS and operating in BLOVS situations and environments. We will be reviewing platforms and technology for protecting GNSS signals in BVLOS flights.

In this webinar, we'll offer industry and government perspectives on best practices and regulatory environment for resilient BVLOS operations and the evolution to unmanned autonomous drones and services. Register here. https://uasweekly.com/2021/05/13/infinidomes-enabling-drone-bvlos-operations-for-defense-critical-missions-webinar/?utm_source=rss&utm_medium=rss&utm_campaign=infinidomes-enabling-drone-bvlos-operations-for-defense-critical-missions-webinar&utm_term=2021-05-13

## Woolpert Sets Precedent for UAS at Airports with Nighttime Operations May 12, 2021 News

Woolpert recently conducted nighttime unmanned aircraft system operations at McGhee Tyson Airport in Knoxville, Tenn., under its Federal Aviation Administration Part 107 Waiver 107.29. Woolpert also has earned the first of its kind FAA Class C airspace authorization to operate UAS anywhere on an airfield for Savannah/Hilton Head International Airport through the FAA Safety Risk Management process.

Woolpert UAS Technology Manager and Team Leader Aaron Lawrence said this waiver and this authorization enable the firm to test strategies for providing perimeter surveillance and address wildlife management.



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"Animal activity presents a threat to airport operations everywhere. Coyotes are always a problem, as are birds and deer, and as you move to different geographies you tend to see other things like gators," Lawrence said. "By being able to provide surveillance around the clock, we increase airport safety." Lawrence said that, to his knowledge, this is the first approval of its kind granted by the FAA. "We have logged more than 1,000 hours with UAS in controlled airspace at airports, mostly flown in B, C and D airspace."
https://uasweekly.com/2021/05/12/woolpert-sets-precedent-for-uas-at-airports-with-nighttime-operations-class-c-authorization/?utm_source=rss&utm_medium=rss&utm_campaign=woolpert-sets-precedent-for-uas-at-airports-with-nighttime-operations-class-c-authorization&utm_term=2021-05-13

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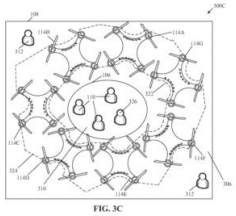
## Senate Panels Approves AAM Working-group Bill Kerry Lynch May 13, 2021

The U.S. Senate Commerce Committee approved a bill on Wednesday to establish a federal interagency working group to develop a national strategy and foster the emergence of the advanced air mobility sector. The Advanced Air Mobility (AAM) Coordination and Leadership Act, S.516, was among several bills the panel passed, clearing the measures for full Senate action.

Introduced earlier this year along with a companion bill in the House (H.R.1339), the AAM Coordination and Leadership Act calls on the Secretary of Transportation to establish the working group, which would make recommendations on the federal role in the AAM sector. In addition to certification and operations, the bill seeks a focus on economic and workforce opportunities, physical and cybersecurity risks, and supply chain and infrastructure development.

The bipartisan legislation, introduced by Sens. Jerry Moran (R-Kansas) and Kyrsten Sinema (D-Arizona), enjoys strong industry support. Pete Bunce, president and CEO of the General Aviation Manufacturers Association, said "The Advanced Air Mobility Coordination and Leadership Act directs the federal government to take a leadership role to help facilitate the highest level of societal benefit as these transformative and sustainable aircraft are more fully introduced into the national airspace system." https://www.ainonline.com/aviation-news/business-aviation/2021-05-13/senate-panels-approves-aam-working-group-bill

## Here's a Cool Idea: Sony Patents Drones for Noise Cancellation Miriam McNabb May 13, 2021



Founders Legal has reviewed the patent, which would use networked drones carrying audio equipment to create quiet spaces. "This invention seeks to enable a means of having a virtual noise cancellation barrier through a networked system of drones," write John DeStefano, Founders Technical Advisor
and Lauren Hawksworth, Marketing Administrator. "The drones are equipped with the audio equipment needed to cancel out the ambient noise of the environment and provide the users within the virtual barrier a noise-free zone."

The invention, which Founders says is "very complex," involves flying a fleet of interconnected drones carrying a payload of speakers. Part of the invention involves Sony's method of fleet control. "These interconnected drones know where to go based on an image processing algorithm. The algorithm identifies the predefined 3D area from a real-time image data feed and sends corresponding commands to the connected drones to position them correctly," says the article. "Through the use of the real-time feed, the fleet of drones is capable of following specific targets to provide a continual zone of noise cancellation." It's a unique use for "follow-me" capabilities: and as fleet capabilities develop throughout the industry, Sony's method could prove to be an advancement. https://dronelife.com/2021/05/13/heres-a-cool-ideas-sony-patents-drones-for-noise-cancellation/



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