UAS and SmallSat Weekly News

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30Apr21

Back to the Future: Drone-like hoverboards that carry people are taking off Scott Simmie Apr. 28th 2021

One of the amazing things about drone technology is how people have quickly found other applications for its use. And one of those areas that really grabs our attention? Hoverboards.

Drone technology continues to improve by leaps and bounds. It seems there are always better flight controllers, more powerful batteries, more efficient motors. And it's never long before someone smart takes that same technology and applies it elsewhere. In the example we're about to see, it's hoverboards that can carry an adult.

We have no idea what the regulations are around hoverboards, but suspect this may well become a topic of conversation before long. Why? Because we're starting to see more videos of these devices. This one, from a TikTok user, caught our attention:

And that got us looking at Hunter Kowald's TikTok account. The entrepreneur, who is about to market this hoverboard.

You can see Hunter is holding a wireless throttle controller in his hand, and it's a safe assumption that a flight controller used in drones is keeping the drone stable.

Well, we saw a price of $20,000 float by the other day in a post somewhere. There's no official price listed on the Omni Hoverboards website. The site does allow you to sign up for news about the commercial version, and we're on the list. We would seriously fly one of these, given the chance. And, undoubtedly, there are more designs to come. See the videos: https://dronedj.com/2021/04/28/hoverboards-are-nearly-here-and-yes-you-can-fly-on-them/#more-56606

Watch Nurk chase a fast R/C jet with a drone Scott Simmie Apr. 28th 2021

Must be fun to be Nurk. Not only is he an amazingly good First Person View pilot and builder, but he always seems to be up to something cool. The guy's a top-level pilot, an influencer, and he's always doing something interesting. And you can certainly say that about the video we're about to see, which involves

chasing a remote control jet. By the way, that jet can fly more than 210 mph.

Nurk just happened to stop by an R/C field in California and saw the jet. Everyone started talking, and soon there was a plan to try to chase the jet.

Specs?

- Length: 10.2 feet
- Wingspan: 7.5 feet
- Turbine: k320 75 pounds of thrust
- Weight, 55 dry, 80 wet 3 gallons of fuel
- Max Speed: 210+ MPH
- Jeti DS24 with Cortex Pro Gyro

Enough words, show the video. That jet, by the way, is worth about $10,000. And wow, is it ever fast! https://dronedj.com/2021/04/28/watch-nurk-chase-a-fast-r-c-jet-with-a-drone/#more-56626

Drone with flapping wings: Could this be the ultimate flying machine? Ishveena Singh Apr. 28th 2021

A whimsical 200 mm wingspan dragonfly drone in flight

Researchers are convinced that the drones of the future could very well mimic a 300-million-year-old superior flying machine: the dragonfly.

Recognizing the dragonfly's superior flight performance compared to most other insects, a team of researchers at the University of South Australia decided to spend a good part of their COVID-19 lockdown designing and testing dragonfly-inspired drones. Their findings were recently published in the journal *Drones*.

It appears that flapping wings for lift and propulsion would allow the drone to soar effortlessly on rising air currents. With direct actuation enabling exquisite hover control, the abdomen containing the fuel cell would double as a rudder and ballast and provide a means to dynamically alter balance.

Stressing how numerous engineering lessons can be learned from the dragonfly's mastery in the air, Javaan Chahl, a professor of Sensor Systems at University of South Australia, says:

Their flying abilities have evolved over millions of years to ensure they survive. They can turn quickly at high speeds and take off while carrying more than three times their own body weight. Dragonfly wings are long, light, and rigid with a high lift-to-drag ratio.

Researchers insist that a bio-inspired design would allow drones to operate more safely near people. As such, a dragonfly lookalike drone could have many uses, including collecting and delivering awkward, unbalanced loads, and executing long-range survey and surveillance missions. These drones would presumably be better at exploring delicate natural environments as well. See the video… https://dronedj.com/2021/04/28/dragonfly-drone-future/#more-56546

Using drones to see what seabirds see: a look into tidal turbulence Ishveena Singh

Apr. 29th 2021

Drones are playing an instrumental role in helping scientists to document and tackle climate change. And the latest example of their resourcefulness comes from Northern Ireland, where researchers are using drones to understand what birds see when they look down.

The study, which is a collaborative effort by scientists from the UK and Germany, is first of its kind. It was conducted in a tidal channel that is a known foraging hotspot for seabirds called terns.

The researchers flew drones at an altitude of 100m across the wake of a tidal turbine monopile. Then, from the drone data, they mapped the changes in local flow patterns, identifying features like swirling vortices (patches of water) and eruptions of upwelling water. The next step was to track individual terns using machine learning and apply statistical modeling methods to quantify their foraging habits with the underlying tidal flows.

Researchers soon discovered that terns were more likely to actively forage over vortices. And upwelling boils ahead of their flight path prompted the birds to stay on course as they approached.

Dr. Alex Nimmo-Smith, associate professor in marine physics at the University of Plymouth, who led the computational development of tern tracking and mapping the underlying turbulent features, comments: *Upwelling boils and swirling vortices, characteristic of strong tidal flows, can bring potential prey items (such as small fish) to the water surface and trap them there. providing foraging opportunities for the terns.*

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The findings from this research give scientists the ability to predict how different species may respond to environmental changes arising from coastal erosion, climate change, and ocean renewable energy sites. See the video: https://dronedj.com/2021/04/29/drones-seabirds-tidal-turbulences/#more-56688

Absolutely insane footage of FPV drone melting inside an active volcano Ishveena Singh Apr. 29th 2021

For about six weeks now, drone pilot Bjorn Steinbekk's life has been consumed by the Fagradals Mountain volcano in southwest Iceland. When the long-dormant volcano on the Reykjanes Peninsula erupted violently last month, Steinbekk was one of the first drone pilots to capture the once-in-a-lifetime event through his new DJI FPV drone.

This week, Steinbekk started a 12-hour live drone video stream from the volcano. But when it was time to conclude, he flew his drone right inside the active crater! Yes, the lava bath melted the drone, but its sacrifice did not go in vain. Just watch this insane footage the drone transmitted back before succumbing to the heat. What we just saw is something none of us could have ever hoped to watch with naked eyes.

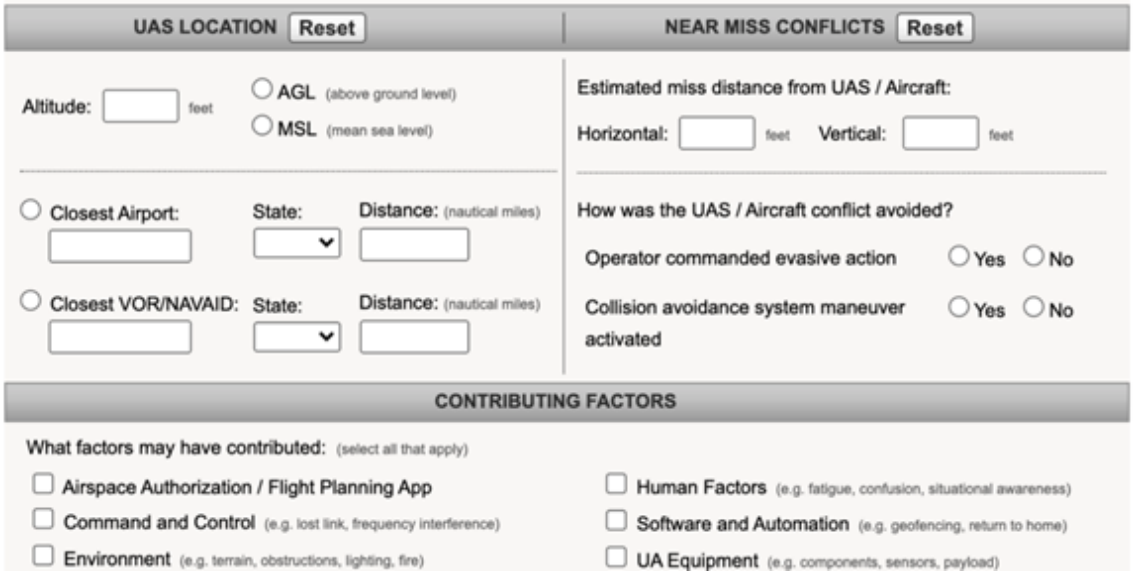
The earth's mantle is one of the biggest places on the planet. It's hiding beneath only a thin crust of rocks. And we still don't have the technology to explore it because lava temperatures can easily range from 1,500 to 2,300 degrees Fahrenheit. https://dronedj.com/2021/04/29/insane-drone-footage-melting-inside-volcano/#more-56667

FAA's Aviation Safety Reporting System (ASRS) now available for drones Scott Simmie Apr. 29th 2021

Let's say you had an issue while on a recent drone flight. Maybe you were a mission and a manned aircraft dipped below 400 feet. Maybe the drone had a flyaway. What to do? Well, the FAA is encouraging you to report it, using an anonymous and largely non-punitive system.

The Aviation Safety Reporting System is new to us. And that's not surprising, because it has only just opened its door to reporting on drone incidents. But it's a good tool to access when necessary, as it helps give regulators and others a more complete picture of incidents involving safety that it would otherwise not even know had happened. If, for example, a particular model

of drone – or even a particular location with heavy interference – was found to be associated with a number of flyaways, an identifiable pattern would emerge that could lead to the situation being remedied.



FAA via NASA Though the data is for the FAA, the Aviation Safety Reporting System is run by NASA, to keep it kind of an arm's length, third-party system. It's also anonymous, so if you report something, it's not going to result in charges except in extraordinary circumstances. https://dronedj.com/2021/04/29/you-can-now-anonymously-report-drone-safety-incidents-to-the-faas-asrs/#more-56776

DRONE STOCKS, SPACS, AND FINANCIAL MARKETS DRONE MARKET ED ALVARADO APRIL 30, 2021

From the outset, it's worth clarifying that this article is about ***drone* stocks**. It's not about massive non-drone companies that have *entered* the drone market or about other corporations that specialize in something else that is *not* drones. That is why we will not mention companies often included in other "drone stock" articles such as: Amazon, Boeing, GoPro, Nvidia, Ambarella, Autel Robotics, Kratos Defense and Security Solutions, or Northrop Grumman (NOC). Since the topic is publicly traded stocks, you also won't see private drone companies such as DJI, 3D Robotics, Yuneec, or others, unless there have been recent talks about them going public.

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DRONE INDUSTRY INSIGHTS

GLOBAL DRONE STOCKS

Company		Country	Ticker Symbol	Primary Business	Founded	Current Price[1] in USD	1 month[1]	6 months[1]	1 year[1]	3 years[1]
EHANG	Ehang Holdings		EH	Hardware	2014	$ 27.91	-43.9 %	+208.7 %	+127.3 %	+123.5 %
dragonfly	Dragonfly		DFLYF	Hardware	1998	$ 1.39	-29.6 %	+209.8 %	+107.3 %	+119.2 %
AV AeroVironment	AeroVironment		AVAV	Hardware	1971	$ 108.40	-10.0 %	+42.2 %	+69.8 %	+ 97.5%
DRONESHIELD	DroneShield		DRSHF	Hardware	2014	$ 0.16	+5.6 %	+6.6 %	+105.5 %	+16.2 %
DRONE VOLT	Drone Volt		ALDRV.PA	Hardware	2011	$ 0.31	-4.2 %	-12.2 %	+193.2 %	-60.9 %
Parrot	Parrot		PAOTF	Hardware	1994	$ 6.91	-12.5 %	+34.5 %	+152.9 %	+5.4 %
DeltaDrone	Delta Drone		DLRWF	Software	2011	$ 0.03	-11.5 %	-8.0 %	-46.6 %	-93.1 %
ACSL	ACSL		6232.T	Software	2013	$ 25.62	- 2.3 %	+ 3.2 %	+17.3 %	+ 5.7 %
DEVERON	Deveron UAS		DVRNF	Services	2011	$ 0.58	-1.9 %	+103.5 %	+184.3 %	-
DRONE	Drone Delivery Canada		TAKOF	Services	2014	$ 0.94	-24.3 %	+96.4 %	+90.2 %	-18.8 %
AgEagle	AgEagle		UAVS	Services	2012	$ 5.32	-33.2 %	+110.9 %	+796.4 %	+18.1 %
NORDIC UNMANNED	Nordic Unmanned		NUMND.OL	Services	2013	$ 3.88	-2.2 %	+111.9 %	+79.1 %	-
REDCAT	Red Cat Holdings		RCAT	Services	2016	$ 4.21	-17.3 %	+301.0 %	+407.2 %	-50.6 %
UAV CORP	UAV Corp		UMAV	Services	1987	$ 5.02	-7.1 %	+96.0 %	-88.1 %	-64.2 %

[1] As of April 19th, 2021; % shows if the stock has increased or decreased since the time-frame mentioned
Sources: DRONEII.com, Yahoo Finance

April 30th 2021

DRONEII.COM
DRONE INDUSTRY INSIGHTS

It is hard to draw a line to categorize them into hardware, software, or services, given that many of them are or were active in more than one of these segments. Geographically, there are 7 companies in North America (USA: 4, Canada: 3), 3 in France, and 1 each in Norway, Japan, China and Australia. The oldest company currently offering drone stocks is AeroVironment (1971) while the youngest is Red Cat Holdings (2016), which invests in and owns several subsidiaries providing various services. Although most of these companies were established between 2010 and 2015, there are 4 companies that were founded before 2000, which suggests that drone stocks can certainly be a good long-term investment. As more companies enter stock markets in the coming years, the competition to own shares will likely increase substantially. See the analysis… https://droneii.com/drone-stocks-spacs-and-financial-markets?utm_source=email&utm_medium=newsletter&utm_campaign=drone-stocks-spacs-and-parrot&utm_content=read-blog&utm_term=continue-reading-button&mc_cid=34ca38582f&mc_eid=857447fe29

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AeroVironment Awarded $26 Million Switchblade 600 Tactical Missile Systems Contract April 30, 2021 Military | News

AeroVironment, Inc. today announced it was awarded a cost-plus-fixed-fee contract on March 31, 2021 by the United States Special Operations Command for $26,120,810 with $7,159,036 funded upon receipt. The contract includes delivery and integration of Switchblade® 600 tactical missile systems into specialized maritime platforms, scheduled to be completed by January 2023.

The Switchblade 600 is an all-in-one, man portable solution equipped with a high-performance EO/IR gimbaled sensor suite, precision flight control and more than 40 minutes of flight time to deliver tactical reconnaissance, surveillance and target acquisition. Its anti-armor warhead enables engagement and prosecution of hardened static and moving light armored vehicles from multiple angles – without external ISR or fires assets – for precise, localized effects and minimal collateral damage. https://uasweekly.com/2021/04/30/aerovironment-awarded-26-million-switchblade-600-tactical-missile-systems-contract-by-u-s-special-operations-command/?utm_source=rss&utm_medium=rss&utm_campaign=aerovironment-awarded-26-million-switchblade-600-tactical-missile-systems-contract-by-u-s-special-operations-command&utm_term=2021-04-30

MissionGO Achieves Critical FAA Milestone to Offer Unmanned Aircraft Cargo Delivery April 29, 2021 News

MissionGO Unmanned Systems announced today that the FAA certification office has approved MissionGO's MG Velos 100 airworthiness criteria as part of MissionGO's Type Certificate application. This step towards Type Certification coupled with testing, documentation, and real-world proof that will follow, will advance MissionGO to a new level of operations.

MissionGO Executive Vice President for UAS Cargo Operations Frank Paskiewicz said, "Our goal is to be certified to fly medical cargo from Point A to Point B with even more speed and efficiency than before, saving time that could literally save lives."

Type Certification coupled with Production and Part 135 Certificates will enable MissionGO to fly more conventional routes through airspace, over people, and eventually beyond visual line

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of sight. Flights containing critically important cargo, like human organs for transplant patients, will be faster and more efficient. https://uasweekly.com/2021/04/29/missiongo-achieves-critical-faa-milestone-takes-next-step-to-offering-unmanned-aircraft-cargo-delivery/?utm_source=rss&utm_medium=rss&utm_campaign=missiongo-achieves-critical-faa-milestone-takes-next-step-to-offering-unmanned-aircraft-cargo-delivery&utm_term=2021-04-30

U.S. Navy tests Vanilla unmanned aerial vehicle from moving truck NEWS AVIATION MARITIME SECURITY VIDEO Dylan Malyasov Apr 24, 2021

The VA001 Vanilla is a long-endurance unmanned aircraft system designed and built by Vanilla Aircraft for military intelligence, surveillance, and reconnaissance. It has demonstrated world-record endurance and is capable of multi-mission beyond visual line of sight operations providing days of time-on-target or thousands of miles of search capacity on a single flight.

The UAS is designed to carry multi-spectral imaging sensors for aerial remote sensing missions and communications relay payload to provide reliable communication to tactical units. The drone system can be launched from a special platform installed on the pick-up. https://defence-blog.com/news/u-s-navy-tests-vanilla-unmanned-aerial-vehicle-from-moving-truck.html

Drones for Trash Clean Up in Waterways Could Save the Oceans Miriam McNabb April 29, 2021 Jim Magill

Denmark has launched a unique experimental project, combining both unmanned aerial vehicles and unmanned watercraft to combat oil slicks and floating trash in the nation's waters.

The CityShark program, designed to coordinate the use of the two different types of drones, began in July 2019, with the use by the Danish coastal city of Aarhus of WasteShark, an unmanned waste-gobbling sailing vessel, manufactured by Rotterdam-based RanMarine Technology.

In the first phase of the project, the WasteShark, owned by the Port of Aarhus, autonomously roamed the waters at the mouth of the Aarhus River where the river flows into the harbo and

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scooped up solid waste — plastic bottles, single-use cups, plastic bags and other floating debris. The WasteShark is able to collect 1,000 pounds of debris each day.

Recently the floating drone was paired with a flying drone, a DJI Mavic, owned by the city of Aarhus. The Mavic gives the system the capability of detecting and cleaning up oil spills. With its onboard camera, using an oil-detecting algorithm developed by Danish Technical University and cloud-based image-sensing software developed by Kinetica, the Mavic can detect even small amounts of oil or gasoline waste on the water's surface. The Mavic can then send a signal to the WasteShark, giving it the location to sail to to clean up the spill.

Sponsors for the waterway clean-up demonstration project are the city of Aarhus, the Danish Agency for Data Supply and Efficiency, the Port of Aarhus, RanMarine, Kinetica and Oracle. The total cost of the project, including the cost of the two drones and the software, is expected to be less than $200,000. https://dronelife.com/2021/04/29/drones-for-trash-clean-up-in-waterways-could-save-the-oceans/

1May21

Irish drone delivery startup raises $25M for US expansion, hires Wing veteran

Ishveena Singh Apr. 30th 2021

Manna, an Ireland-based drone delivery startup, has scooped up $25 million in Series A funding to scale its fleet and expand into the US market. Manna, which pitches itself as an aviation-grade B2B drone delivery "as-a-service" firm, designs, builds, and operates its own drones. The drones can carry a cargo of up to 3kgs and reach top speeds of 80kph to guarantee a delivery time of less than three minutes in catchment areas as large as 50 square kilometers.

A single Manna employee is trained to operate multiple drones simultaneously, ensuring nearly 20 deliveries per hour. This is 10 times what can be achieved with traditional road-based delivery services.

At present, the startup is conducting drone delivery trials in suburban last-mile settings of Galway, Ireland. With more than 30 percent of the town population using the service, Manna is making more than 100 deliveries a day (and night). Take a look.

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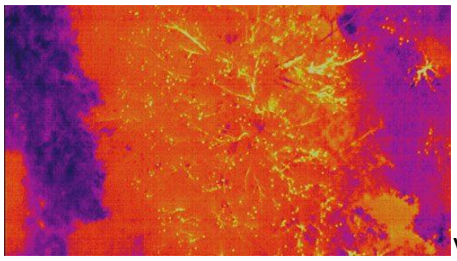
Manna has already secured partnership deals including JustEat, Samsung, Ben & Jerry's, and Tesco. And for its US operations, the company would be looking to include prescription medical supplies in its service catalog – an area where Andrew Patton's, the former Lead of Strategy and Growth at Wing, recent MedTech experience should come in handy. https://dronedj.com/2021/04/30/drone-delivery-manna-expansion/#more-56806

Why scientists are using thermal drones to count flying foxes in Australia Ishveena Singh Apr. 30th 2021

As pollinators of the forests, the iconic gray-headed flying fox, a megabat native to Australia, plays an extremely important role in the continent's biodiversity. But the species is increasingly at risk of extinction. And effective monitoring has become imperative for more reliable conservation management.

Scientists from Taronga and Western Sydney University recently deployed drone-based thermal remote sensing methods to enable reliable monitoring of flying fox populations. Armed with a DJI Inspire 1 V2.0 drone equipped with a Zenmuse radiometric thermal camera, scientists ventured out in flying fox colonies early in the morning – when the animals' body temperature is notably higher than the surroundings – and acquired thermal imagery.



Visual camera vs. thermal camera: Each dot represents a flying fox

Then, they used advanced image detection techniques, such as machine learning and computer vision methods, to semi-automate flying fox counts from the drone-acquired imagery. The average accuracy of these semi-automated wildlife counting methods from thermal drones was found to be 84%. https://dronedj.com/2021/04/30/thermal-drones-flying-foxes-australia/#more-56804

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2May21

MEMA expands drone usage in Aerial System program David Kenney May 1

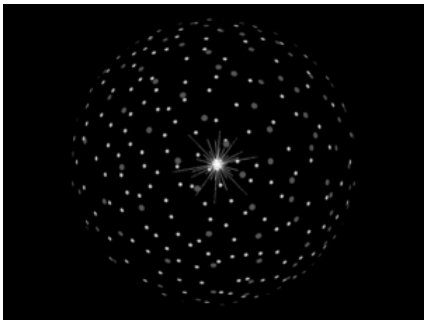
PEARL, Miss. - The state of Mississippi has added some high-tech flying devices to their arsenal of tools. The Mississippi Emergency Management Agency now has 9 drones as part of their unmanned Aerial System program. The drones are placed strategically around the state and can respond at a moment's notice. A drone was used to locate a missing man in Jefferson Davis county last week.

Several of the drones have thermal imaging which allows pilots to quickly locate heat signatures on the ground whether it's day or night. David Battaly the MEMA UAS Program Coordinator said, "The thermal imagery camera is a mission multiplier with our task at night and looking for people."

The state has been using the drones since 2017. They're also aiding in responding to natural disasters and hazmat situations, where they can help first responders in the ground by giving visual coverage from the air. https://www.wlbt.com/2021/04/30/mema-expands-drone-usage-aerial-system-program/

3May21

Drone Swarms: the Good, the Bad, and the Beautiful Dawn M.K Zoldi May 02, 2021



Spectrabotics LLC, a company whose tools aggregate, integrate and analyze drone data, is combining their analytics with drone swarm tech to solve tough problems including environmental ones like hazardous materials spills. Addressing HAZMAT incidents remains a challenge because of the complexity and dynamic forces at play during such an event. All incident commanders want the best information possible to understand how to manage the situation, especially before sending people into potentially dangerous situations. A fusion of different data points can provide full spectrum situational awareness.

Here's how it works now: High-definition drone video provides an understanding of the physical environment. Thermal imaging highlights the hot spots contributing to the problem. Spectral sensors map the extent of the spill. LiDAR contributes to an appreciation as to how the

disaster could spread more widely. Individually, these drones with their sensors would require multiple operators, planning software, different expert experience, a way to share all this data for each and every drone and sensor and a lot of time-consuming analysis to integrate it to form one holistic threat picture.

Here's how it could work with a drone swarm: All of these same drones, with different sensors on board, could synchronize, coordinate and share their data with each other while being controlled by one person or through pre-programmed autonomous features. When backed with decision science to provide analytics rapidly, the game has completely changed. According to Spectrabotics CEO Tim Haynie, "Our motto is to go from Precision to Decision. The analytics are everything. On a scale of 1-10 in severity of real-world problems, drone swarms, backed with decision science, can solve the level 10 problems."
https://dronelife.com/2021/05/02/drone-swarms-the-good-the-bad-and-the-beautiful/

UTM company Aeroscript "to start drone integration trials in St Petersburg airspace" May 3, 2021 Philip Butterworth-Hayes UAS traffic management news

Russian UAS traffic management company Aeroscript has announced it will shortly start trials to integrate drones into the airspace around St Petersburg, Russia, via its Skyarc UTM system. The pilot project aims to reduce the flight authorization process from the current 30 days by introducing a digital platform that links operators and regulators.

"Skyarc is the first full-fledged UTM system in Russia that uses navigation and surveillance data, meteorological information, aeronautical information, and geospatial data," says the company website. "Preventing possible collisions of aircraft in the sky, Skyarc ensures conflict-free air traffic, safety and information security of flights (protection of communication channels, resistance to cyber attacks)."

"We will increase pilot awareness of no-fly zones and situational awareness of remote pilots which will help maintain an appropriate level of flight safety. We will free up a significant amount of airspace, increase its capacity and rationality of use. The development of the industry will contribute to the improvement of the regulatory framework.
https://www.unmannedairspace.info/uncategorized/utm-company-aeroscript-to-start-drone-integration-trials-in-st-petersburg-airspace/

Storm chaser captures incredible drone intercept of tornado Scott Simmie May. 3rd 2021

An American storm chaser captured some astonishing video over the weekend. He managed to intercept a tornado with a drone, and the footage is something else.

Storm chasers are a really interesting breed. I had an opportunity, as a reporter at the *Toronto Star*, to join some chasers through the US Midwest many years ago. Some earn their living by chasing storms and selling footage, while others merely fulfill their passion by witnessing and capturing photos and videos of Mother Nature at her most spectacular. All of the chasers I met were weather geeks with really deep knowledge about forecasting. (Several, in fact, were meteorologists.) They were cautious and always acutely aware of the deadly power of tornados.Nnearly all of them carried long lenses so they'd still be able to capture footage without having to get too close.

But wow, the Holy Grail for a chaser would be a safe intercept – where they could capture the storm up close and personal without putting themselves at risk. And that's precisely what Brian Emfinger did. Brian is a very experienced chaser who works as a photographer at KATV Channel 7 in for Little Rock, Arkansas. See the video… https://dronedj.com/2021/05/03/drone-footage-tornado/#more-56959

World Press Freedom Day: How top news organizations use drone journalism

Ishveena Singh May. 3rd 2021

Journalists and news organizations love drones. On World Press Freedom Day today, let's take a quick look at some of the ways video reporters are leveraging drone journalism to gather news from a unique perspective.

1. *Wall Street Journal* captures hazardous sites from a safe distance. In this eerie and spectacular drone footage filmed between 2013 and 2016, the *Journal* shows the Ukrainian city of Pripyat and the Chernobyl nuclear facility. In 1986, a population of 50,000 people was evacuated after the reactor at the nuclear plant exploded. Today, the place is a ghost town.

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2. BBC News flies at war-ravaged historic locations. BBC News has flown drones over the historic sites of World War I and World War II to bring back haunting and moving views of places where thousands of people have died.

3. Fox Sports shows never-before-seen camera angles at sporting events. To capture the grandeur and scale of the Chambers Bay golf course in Washington, and to give viewers a unique live-action perspective on the course, the channel used tethered drones back then. Today, Fox Sports is experimenting with everything from the DJI Inspire 2 to custom first-person-view drones.

4. Ruptly brings unique aerial perspectives to local news. International video agency *Ruptly* has been using drones to provide better coverage of local news. In the video, aerial footage showcases the extent of the huge traffic jam piling at the snow-struck base of Mount Ida in Crete, Greece.

5. CBS News details the intensity and scale of natural disasters. All the big three hurricanes of 2017 – Harvey, Irma, and Maria – have gone down in US history as some of the costliest tropical cyclones. And the most striking images of natural disasters ever since have been brought to us by drones.

For more understanding of drone journalism, hop over to the fantastic highlight reel created by News 12 below, explaining the many ways their channel is using drones while reporting news: Impressive videos. See them all… https://dronedj.com/2021/05/03/how-journalists-use-drones/

Sanitization drones clear way for cheering Kentucky Derby crowds Bruce Crumley - May. 3rd 2021

Before the 51,800-plus crowd excitedly filed into Churchill Downs Saturday to watch Medina Spirit win the 147th Kentucky Derby, a race of another sort took place: the tag-team effort of drones to completely cleanse the venue from COVID-19 viral threats before the running began.

The company hired to pull that off was Pittsburgh-based tech firm Aeras, after it earned the Federal Aviation Administration's certification to sanitize big sports and entertainment sites.

The Atlanta Falcons led the charge last October by contracting Lucid Drone Technologies to spray FDA-approved disinfectant over its home field Mercedes Benz Stadium.

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The EPA recognizes electrostatic spray systems used by drones as the fastest and most efficient manner of misting viral threats away from large venues. Companies active in that deploy UAS to atomize a full covering of sanitization liquid over all surfaces to kill COVID-19 and other viral pathogens. The 2020-founded Aeras says its drones completed that task in Louisville ahead of Saturday's Derby in just three hours. https://dronedj.com/2021/05/03/sanitization-drones-clear-way-for-cheering-kentucky-derby-crowds/#more-56922

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The little Mars helicopter that could Jeff Foust Monday, May 3, 2021

On Friday, a tiny helicopter called Ingenuity, developed at JPL and flown to Mars along with the Perseverance rover, made its fourth flight in 12 days the tenuous Martian atmosphere for 117 seconds, going 133 meters from its landing zone and back, reaching top speeds of several meters per second.

The plan for Ingenuity was to make up to five flights in a one-month period that started when the helicopter was deployed from Perseverance in early April. Those flights would be increasingly complex, and project officials warned earlier in the month that the final flights would likely result in the loss of the helicopter. That was perfectly fine, they added: Ingenuity is strictly a technology demonstration, designed to simply see if it was possible to fly on Mars.

After three flights that went perfectly, though, NASA decided to change direction. Ingenuity, in the final days of its month-long mission, would get an extension and a new mission. The helicopter will now test the ability of a small helicopter to support a larger rover mission by serving as an aerial scout. https://www.thespacereview.com/article/4169/1

Army Wants To Accelerate FTUAS Drone SYDNEY J. FREEDBERG JR. May 03, 2021

WASHINGTON: The Army is asking industry if it can accelerate delivery of a new scout drone, Future Tactical Unmanned Aerial System FTUAS, to replace the aging RQ-7 shadow after a successful year of field tests of four competing prototypes, culminating in a rainy-day "rodeo" at Fort Benning.

It was "a great infantryman day, a cold, rainy day where we couldn't have launched the Shadow in that weather," Col. Scott

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Anderson, project manager for drones, said. “All those systems launched and flew really spectacularly in that kind of weather and got great feedback from the soldiers. “I think it’s unanimous that we got this one right,” Anderson told reporters Friday. “Now we’ve got to do a little bit more of the hard work and deliver that capability.”

A formal requirements document for FTUAS, the Future Tactical Unmanned Aerial System, should receive Army approval in July, Anderson said.
https://breakingdefense.com/2021/05/army-wants-to-accelerate-ftuas-drone/

Kroger and Drone Express Partner to Provide Grocery Delivery by Drone May 3, 2021 News

“Kroger’s new drone delivery pilot is part of the evolution of our rapidly growing and innovative e-commerce business – which includes pickup, delivery, and ship and reached more than $10 billion in sales in 2020,” said Kroger’s Jody Kalmbach, group vice president of product experience.

Drone Express technology allows package delivery to the location of a customer’s smartphone not only to a street address, simply meaning a customer will be able to order delivery of picnic supplies to a park, sunscreen to the beach, or condiments to a backyard cookout, for instance.

. As an illustration, Kroger will offer a baby care bundle with wipes and formula, a child wellness bundle with over-the-counter medications and fluids, and a S’mores bundle with graham crackers, marshmallows, and chocolate. Customers can have orders delivered within as little as 15 minutes.

Drone Express will commence test flights this week near the Kroger Marketplace in Centerville, Ohio. The flights will be managed by licensed Drone Express pilots from an on-site trailer with additional off-site monitoring. Customer deliveries are scheduled to begin later this spring, and a second pilot is scheduled to launch this summer at a Ralphs store in California.
https://uasweekly.com/2021/05/03/kroger-and-drone-express-partner-to-provide-grocery-delivery-by-drone/?utm_source=rss&utm_medium=rss&utm_campaign=kroger-and-drone-express-partner-to-provide-grocery-delivery-by-drone&utm_term=2021-05-04

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How Dominion Energy Uses Drones and Data May 05, 2021 PRECISIONHAWK

Dominion Energy used to conduct Comprehensive Visual Inspections (CVI) with ground teams and helicopters. But these methods limit up-close access to assets, pose dangers to ground and flight personnel, and release emissions into the atmosphere.

PrecisionHawk approached Dominion about replacing some of its inspection helicopters and ground crews with drones to improve data fidelity, safety, and environmental impact. Steve Eisenrauch, Dominion's Manager of Electric Transmission Forestry & Line Services, said "What we wanted to do was, at a minimum, recreate the CVI inspections that we did with a helicopter so that we weren't losing anything."

Dominion and PrecisionHawk teams worked together to set up the drone inspection program. When it was tested side-by-side against the previous inspection methods, the drone really picked up on more issues on the poles. Drones can get closer to power lines than a helicopter can and can better adjust angles to get the best view.

The drone inspections found 42% more areas of concern, such as cotter keys backing out and flashing on insulators, than the helicopters and ground crews. Based on the successful pilot project, Dominion continued and expanded its drone based CVI program.
https://innovateenergynow.com/resources/how-dominion-energy-uses-drones-and-data?utm_campaign=Energy%20Drone%20%26%20Robotics%20Coalition%20Content&utm_medium=email&_hsmi=125231949&_hsenc=p2ANqtz-_DIGeTwSIdT-rm07eK4-w6PCd2GUjZjVHeRQph9bNQiHqdwIqhrxaFk6TUBJDxAa42HC2SQI35X0A_-QfYO9iQLVCnFQ&utm_content=125231949&utm_source=hs_email

Firefly Aerospace Raises $175M via Series A Funding Round, Secondary Sale Jane Edwards May 5, 2021 News, Technology

Firefly Aerospace has raised $75 million in a round of Series A financing led by DADA Holdings and $100 million through a secondary transaction that includes the sale of holdings owned by its major investor Noosphere Ventures, TechCrunch reported Tuesday.

Astera Institute, Canon Ball and other investors participated in the Series A round, which gives Firefly a valuation of more than $1 billion.

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The financing comes as Firefly prepares for a maiden flight of its Alpha rocket in June. In February, the Texas-based launch services startup received a contract from General Atomics to launch a satellite carrying NASA's Multi-Angle Imager for Aerosols instrument.

NASA also awarded Firefly a task order under the Commercial Lunar Payload Services program to deliver technology demonstrations and science investigations to the moon's surface using its Blue Ghost lunar lander. Firefly said it plans to raise another $300 million in funds later this year. https://blog.executivebiz.com/2021/05/firefly-aerospace-raises-175m-via-series-a-funding-round-secondary-sale/?utm_campaign=ExecutiveBiz%20Daily%20Headlines%2005.05.2021%20%28UDg8g7%29&utm_medium=email&utm_source=Ebiz%20Welcome%20Email&_ke=eyJrbF9jb21wYW55X2lkIjogIlRCS0t4UCIsICJrbF9lbWFpbCI6ICJyb2JlcnQucmVhQGF4Y2VsLnVzIn0%3D

Virginia using drone technology with chemical balls to create safe prescribed burn 2021-05-03 UAV Expert News

HIGHLANDS, Va. (WSET) — New drone technology is making required prescribed burns safer for officials starting them.

Virginia got two new drones to get the job done. Prescribed burns are done every few years, depending on the type of forest, according to officials.

Samantha Lopez, the supervisor of wildlife management for the Dept. of Wildlife Resources, said the burns get rid of debris and create new growth. "When fire isn't happening, we've lost entire generations of forests," she said.

Officials have been looking for solutions to make the process to set fires safer and more cost-effective. They feel this technology is a good solution. Sam Lindblom, the director of land management for the Nature Conservancy of Virginia, believes it's a game-changer. https://www.uavexpertnews.com/2021/05/virginia-using-drone-technology-with-chemical-balls-to-create-safe-prescribed-burn/?utm_source=Master&utm_campaign=7b984d61ae-EMAIL_CAMPAIGN_2017_12_20_COPY_02&utm_medium=email&utm_term=0_35ad7bc94d-7b984d61ae-89168672

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UK scientists using drones in selecting tidal power installations Bruce Crumley May. 5th 2021

The scientists in Scotland and Wales have identified drones as a promising improvement over ways they normally scout sites for capturing marine energy. As a result, the researchers from the University of the Highlands and Islands, Bangor University, and Swansea University have launched a 12-month program using drones to speed the effort to transform oceanic power into electricity.

The officials say the clear, powerful videos that unmanned aerial vehicles can shoot allow them to use aerial footage in their calculations. Once fed to algorithms that determine the speed of water currents filmed, the researchers determine which spots are best suited to energy-generating tidal stream turbines. That prospecting work is currently done using sea floor sensors and observation vessels – both involving a lot more time, money, and human labor than piloting drones do.

The test flights are being held in varying weather conditions in Scotland's Pentland Firth, and Ramsey Sound in Wales. Benjamin Williamson, a scientist working for UHI's North Highlands College Environmental Research Institute in the North Sea town Thurso said improved efficiencies of drones in site quests could be vital to increased use and performance of marine energy technologies. https://dronedj.com/2021/05/05/uk-scientists-using-drones-in-selecting-tidal-power-installations/#more-57060

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WANT TO INVEST IN DRONES? THESE DRONE STOCKS ARE WORTH FOLLOWING May 6, 2021 Sally French News

Looking to invest in drones? There are tons of publicly traded drone stocks. German-based drone analytics firm Drone Industry Insights took a look at some of the biggest global drone stocks. Here's a look at what they're trading at (as of mid-April 2021), how they've done over the past three years — and where drone stocks are headed.

If you want to invest in a big company that's diversified in many aspects of tech, look to large cap stocks whose companies are involved in some aspects of drones, such as Amazon or Nvidia.

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DRONE INDUSTRY INSIGHTS

GLOBAL DRONE STOCKS

Company	Country	Ticker Symbol	Primary Business	Founded	Current Price* in USD	1 month*	6 months*	1 year*	3 years*
Ehang Holdings		EH	Hardware	2014	$ 27.91	-43.9 %	+208.7 %	+127.3 %	+125.5 %
Dragonfly		DFLYF	Hardware	1998	$ 1.39	-29.6 %	+209.8 %	+107.3 %	+119.2 %
AeroVironment		AVAV	Hardware	1971	$ 108.40	-10.8 %	+42.2 %	+69.8 %	+ 97.5%
DroneShield		DRSHF	Hardware	2014	$ 0.18	+5.8 %	+8.6 %	+105.5 %	+19.2 %
Drone Volt		ALDRV.PA	Hardware	2011	$ 0.31	-4.2 %	-12.2 %	+193.2 %	-80.9 %
Parrot		PAOTF	Hardware	1994	$ 6.91	-12.5 %	+34.5 %	+152.8 %	+5.4 %
Delta Drone		DLTNF	Software	2011	$ 0.03	-11.5 %	-8.0 %	-46.8 %	-83.1 %
ACSL		6232.T	Software	2013	$ 25.62	-2.3 %	+ 3.2 %	+17.3 %	+ 5.7 %
Deveron UAS		DVRNF	Services	2011	$ 0.58	-1.8 %	+103.5 %	+194.3 %	-
Drone Delivery Canada		TAKOF	Services	2014	$ 0.94	-24.3 %	+86.4 %	+90.2 %	-18.8 %
AgEagle		UAVS	Services	2012	$ 5.32	-30.2 %	+110.9 %	+796.4 %	+18.1 %
Nordic Unmanned		NUMNO.OL	Services	2013	$ 3.88	-2.2 %	+111.8 %	+79.1 %	-
Red Cat Holdings		RCAT	Services	2016	$ 4.21	-17.3 %	+301.0 %	+437.2 %	-50.6 %
UAV Corp		UMAV	Services	1987	$ 0.03	-7.1 %	+95.0 %	-68.1 %	-84.2 %

* As of April 14th, 2021, % shows if the stock has increased or decreased since the time frame mentioned

DRONEII.COM

A company like Nvidia allows you to invest in tons of sensor and computer graphics tech. Betting on Nvidia is a bet on the drone industry, but it's also a bet on other tech like self-driving cars.

Here are some major companies that have some involvement in drones but aren't solely centered around them: Amazon (AMZN), Ambarella (AMBA), Boeing (BA), GoPro (GPRO), Northrop Grumman (NOC), Nvidia (NVDA).

Here are some drone companies to put on your radar. Three drone companies — all of which are focused on air taxis — have announced plans to go public. Keep an eye out for these companies: **Archer Aviation** (ACHR) announced plans in February 2021 to go public through a "business combination agreement with Atlas Crest Investment Corp (NYSE: ACIC). The company, which was founded in 2018 in Palo Alto, California, recently received an order worth $1billion from United Airlines and is valued at approximately $3.8 billion. **Joby Aviation,** the Santa Cruz-based company, was founded in 2009 and has received $820 million in funding, with a $6.6 billion valuation. **Lilium** (LILM) announced a deal in March 2021 with Qell Acquisition Corp, valuing it at $3.3 billion. The German-based company was founded in 2015. https://www.thedronegirl.com/2021/05/06/drone-stocks/

Wisk To Operate Autonomous eVTOL Air Taxis for Blade Charles Alcock May 5, 2021,

Wisk Aero is developing the two-seat, all-electric Cora aircraft for autonomous operations.

Wisk Aero will supply and operate up to 30 of its eVTOLs for Blade Urban Air Mobility's passenger transportation network, the companies announced today. According to Wisk, the aircraft will be what it called its sixth-generation design rather than the two-seat, all-electric Cora currently undergoing flight testing.

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The agreement calls for Wisk to deploy its aircraft on short routes linking Blade's network of private terminals in various U.S. cities. The aircraft will be owned, operated, and maintained by Wisk, which will be paid according to flight duration based on minimum flight-hour guarantees.

In April, Blade announced an agreement under which its partner operators will acquire up to 20 Beta Technologies Alia 250 eVTOL aircraft. These five-seat vehicles will have a pilot on board and are expected to start commercial operations in the Blade network in late 2024. Blade currently provides flights in a mix of helicopters and fixed-wing amphibious aircraft. https://www.ainonline.com/aviation-news/business-aviation/2021-05-05/wisk-operate-autonomous-evtol-air-taxis-blade

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The FAA UAS Symposium: Mark Your Calendars! Miriam McNabb May 06, 2021

The FAA and AUVSI will co-host the FAA UAS Symposium again this year, at two information packed sessions held in June and September. Mark your calendars for Episodes III and IV, June 9-10, 2021, and September 14-15, 2021.

Register now for the opportunity to hear from industry experts and U.S. and international aviation authorities on the topics most important to the drone ecosystem this year "including the operations over people rule, remote identification, airspace authorizations, waivers, the part 107 small UAS rule, changes in hobbyists' drone operations, and other policies and regulations," says the FAA announcement.

This year Episode III, June 9-10, "will concentrate on international operations, STEM, public safety operations, recreational drone operations, and commercial drone operations. Episode IV is scheduled for September 14-15 with a focus on UAS traffic management, technology, the BEYOND program, advanced air mobility, and international operations."

The Symposium provides a unique opportunity for the drone industry to connect directly with representatives of the FAA to ask questions and trade information. "Each episode will feature keynote presentations, expert panels, guided and non-guided networking discussions, one-on-one meetings with experts in the FAA UAS Support Center, and informational sessions with live Q&A." For more information on the program and to register, visit the Symposium website. https://dronelife.com/2021/05/06/the-faa-uas-symposium-mark-your-calendars/

NASA Mars helicopter set to attempt its first one-way trip on Friday Amanda Kooser May 6, 2021

NASA's experimental Ingenuity helicopter hopes to take to the Martian air for its fifth flight on May 7.

The Mars rotorcraft is ready to attempt its very first one-way flight on Friday. So far, the helicopter has acted like a homing pigeon by continually returning to the same Martian roost.

NASA is targeting 12:36 p.m. PT on May 7 for the chopper's fifth flight. There are other ambitious goals for this flight besides the landing location. Ingenuity is scheduled to fly to 16 feet above the surface and then travel south 423 feet. Once it hits that mark, it will aim for a height record of 33 feet to snap some images of the terrain. It will then land after about 110 seconds of flight time.

The Ingenuity team used the rotorcraft's fourth flight to scout out the new landing spot, which NASA described in a statement as "flat as a pancake." The space agency doesn't want its experimental machine to touch down on rocks that might tilt it. https://www.cnet.com/news/nasa-mars-helicopter-set-to-attempt-its-first-one-way-trip-on-friday/

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