UAS and SmallSat Weekly News

Contents

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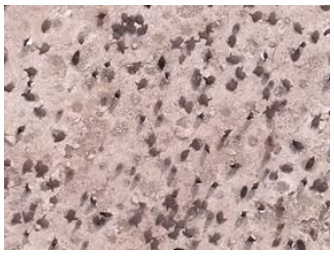
UgCS Drone Fleet Software Helps Scientists Count Penguin Chicks Miriam McNabb March 25, 2021

Scientists have been able to use multiple UAVs, managed by UgCS drone fleet software from SPH Engineering, to survey one of the largest Adélie penguin colonies in the world in under 3 hours.

UgCS drone fleet software has been used for everything from drone light shows to geospatial data applications. Scientists from Stanford University, Point Blue Conservation Science and Conservation Metrics were able to use the UgCS software to develop a system to autonomously survey a huge colony of Adélie penguins in the Antarctic. Using multiple drones, the project which would have taken 3 days was completed in a fraction of the time. "Thousands of high-resolution images were taken on each survey," says the press release. These images will be used with an AI model (Conservation Metrics) currently under development to automatically identify and count adult penguins and their chicks.

'Using UgCS with a custom route planning algorithm (Stanford) our team efficiently photographed over 300,000 breeding pairs of penguins at Cape Crozier, Antarctica. Ultimately these surveys will contribute to large scale assessments of penguin populations and breeding success, key metrics for monitoring the health of the Antarctic marine ecosystem', Annie Schmidt, a researcher at Point Blue Conservation Science, explains.



The first image shows the raw image from the drone, and the second is zoomed in on the same image to show the view when training the counting model.

The research was funded by the National Science Foundation and carried out under Antarctic Conservation Act Permit #ACA 2020-005. A multi-drone imaging system was put to the test in

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Antarctica in 2020. https://dronelife.com/2021/03/25/from-drone-light-shows-to-environmental-conservation-ugcs-drone-fleet-software-helps-scientists-count-penguin-chicks/

TindAIR: Bringing Urban Air Mobility to Europe Miriam McNabb March 25, 2021

Launched today, TindAIR is a new consortium funded by the European Union´s Horizon 2020 research and innovation program tasked with working on wide scale demonstrations of urban air mobility applications.

TindAIR, which stands for Tactical INstrumental Deconfliction And in flight Resolution, falls under SESAR's U-Space efforts, developing unmanned traffic management systems for integration of drones into the airspace. The consortium is among the first dedicated to looking at the integration of passenger drones into the airspace – a step forward for the hot urban air mobility sector. https://dronelife.com/2021/03/25/tindair-bringing-urban-air-mobility-to-europe/

3 YEAR SINGAPORE UTM TRIAL JUST ENDED, AND HERE'S WHAT HAPPENED March 26, 2021 Sally French The Drone Girl News

A three-year long test of a proposed solution for an automated unmanned traffic management system just finished its run. The Singapore UTM trial, run by private companies OneSky and Nova Systems was largely deemed a success in creating a system for what is essentially air traffic control for drones.

The Singapore UTM trial came about through a partnership between multinational engineering and tech firm Nova, as well as global UTM provider OneSky. But the Singaporean government has been actively involved; it was co-founded as part of a UAS Call-For-Proposal by the Ministry of Transport and Civil Aviation Authority of Singapore.

"It marks a significant milestone in Singapore's journey towards a future driven by UAS technology, as private and government sector stakeholders look deeper into the possibility of the large-scale, integrated deployment of such technology in Singapore's unique urban environment," according to a statement from OneSky.
https://www.thedronegirl.com/2021/03/26/singapore-utm-trial/

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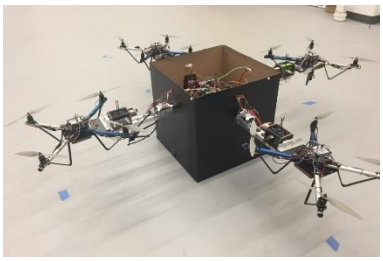
Collaborative tech lets drones work together to lift heavy loads Ben Coxworth March 22, 2021 John Toon, Georgia Tech



Currently in development at the Georgia Institute of Technology, the setup presently incorporates a 12-lb cargo box measuring 2 feet on each side. Built into that box is a docking structure that accommodates four small quadcopter drones – that said, the system could be scaled up for use with bigger boxes and larger numbers of the aircraft.

Once a package has been placed in the box, the drones simultaneously take off, proceeding to continuously communicate with one another while in autonomous flight. Doing so allows them to coordinate factors such as their thrust and orientation, so they're all flying together as one cohesive unit.

Plans call for the final version of the system to include infrared beacons on each of the docking stations, which would make it possible for the drones to automatically locate and latch onto them. This would come in particularly handy when the aircraft were picking up parcels from places like people's homes, where no trained staff were on hand to manually attach the drones.
https://newatlas.com/drones/multiple-drones-heavy-loads/

Rugged Scout drone designed to inspect tanks for leaks Ben Coxworth March 22, 2021

The liquid-carrying tanks on tanker ships must regularly be inspected for cracks – a task which is typically performed by humans.

Norwegian startup Scout Drone Inspection has developed what it claims is a superior alternative, in the form of the Scout 137 drone. The quadcopter is equipped with a 4K video camera, a LiDAR module for mapping and obstacle avoidance, plus six LED spotlights that put out a combined 10,000 lumens.

Real-time video is relayed from the drone to its operator's control tablet via a tether that runs up and out of the tank – that tether also provides mains power to the aircraft. Plans call for the Scout to fly through the tanks autonomously.

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As it flies, the drone creates a 3D digital map of the inside of the tank. If either the operator or the Scout's cloud-based image-analysis software detect any cracks or other faults, their location can be marked on that map, so repair crews will know where to find them.

As a result, according to the company, inspections that would have taken days can be performed in a matter of hours. See the video at: https://newatlas.com/drones/scout-137-drone-tank-inspection/

Drone footage reveals tornado devastation in Alabama Scott Simmie Mar. 25, 2021

Footage is emerging from devastating tornadoes that touched down in the Birmingham, Alabama, area. It provides a glimpse of the utter destruction such storms can cause in an instant.

There are few forces of nature more terrifying than a tornado. They develop quickly, don't always follow set paths, and can obliterate nearly anything in their path. Today, a series of tornadoes tore through several areas, resulting in at least five deaths. Aerial imagery, including some drone footage, provides a glimpse of the horror these communities endured.

Tornadoes come in many shapes, sizes, and intensities. This tweet compiles multiple clips, several of which were captured by drone. They provide a sense of scale, and – at least at the end – how that devastation ultimately impacts people. You can see a victim being carried to an ambulance, as well as someone searching through the remains of a room on the upper floor or their home – which now has no roof. https://dronedj.com/2021/03/25/drone-footage-captures-the-power-and-devastation-of-alabama-tornadoes/#more-53603

Drone data company Skycatch receives $25M in funding Josh Spires Mar. 26, 2021

The funding was on top of a $13.2 million funding round all the way back in 2014.

The funding round was led by ADB Ventures and Wavemaker. It was founded in 2013 to develop a solution that allows drones to capture centimeter-accurate image data to create 3D scans.

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The company has already rolled out its Skycatch Vision Engine, Edge1, and Explore1 drone to locations worldwide, with over 10,000 sites making use of it. The countries the drone technology is currently active in include Chile, Colombia, Peru, Brazil, Australia, Canada, the US, Indonesia, China, the Philippines, Thailand, and Japan.

Skycatch focuses on two industries, for now, mining and construction. Its system can be configured with two drones, the DJI Phantom 4 RTK or the company's own Skycatch Explore1, with a dual-camera system and RTK ability through a proprietary high-accuracy module.

Both drones work with the Skycatch Edge1 ground-station that is a GNSS receiver and an edge compute module for the data captured by the drone. This allows datasets to be processed on-site without an internet connection and outputs readable data within 30 minutes. https://dronedj.com/2021/03/26/drone-data-company-skycatch-receives-25m-in-funding/#more-53612

Schools of FPV: VFX edits Vladimir Muncan Mar. 26, 2021

In this new feature we go through the different kinds of FPV styles, videos, disciplines, and "schools." Last week we took a look at cinematic FPV, explained what makes it special and talked a little bit about the gear. This week we're looking at some augmented reality and VFX edits. It's pretty obvious what makes these special.

Unlike last week, I don't have much to say about the gear and pilot expertise. The videos tend to be slow and smooth, as this makes it easier for all the camera tracking software. Any kind of quad can be used as long as it's carrying a high-quality recording camera. The more resolution, the better. With these kinds of videos it's all in the post-production.

If you're into FPV and have never watched a Stickman video, you're in for a treat. This is the guy who "pioneered the genre," and I strongly encourage you to go watch his other videos; there's only a handful of them and they're all fan-ta-stick. All the work of one massively talented individual. Very cool videos! https://dronedj.com/2021/03/26/schools-of-fpv-vfx-edits/#more-53174

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Altitude Angel launches airspace management tool for airports Josh Spires Mar. 26, 2021

The new platform will also allow airports to better equip themselves for the upcoming EASA U-Space Regulations, which are expected to go live on January 1, 2023.

GuardianUTM Enterprise will build the company's already popular GuardianUTM platform, giving airports access to set up access policies and create automation workflows. This will allow the airport management team to have a clear and accurate view of the sky around the airport to keep crewed aircraft safe and ensure the drones are flying legally. Key features of GuardianUTM Enterprise include:

- Digitalization of pre-flight and take-off approvals to drone operators within the airspace.
- Offers high levels of automation, including customized automated access policies and approval workflows of crewless operations.
- Supports UTM Service Discovery via Altitude Angel's developer platform – a capability that allows third-party vendors to create integrated services that can locate and submit access requests in a standardized format globally.
- Integrates with existing surveillance infrastructure to improve aerial monitoring of all airspace users within the airport's vicinity, adding intelligence to existing counter-UAS solutions.

GuardianUTM allows software developers and drone manufacturers to access tools and data that are accurate, up-to-date, and relevant to understand better active and past drone missions. The platform helps drone pilots follow local flight rules and avoid mid-air collisions with a dynamic alert system. GuardianUTM also includes data from local air authorities such as altitude restrictions, No-Fly Zones, and NOTAMs to ensure operations are as safe as possible.
https://dronedj.com/2021/03/26/altitude-angel-launches-airspace-management-tool-for-airports/#more-53580

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Chula Vista Police Drone as First Responder Program expands citywide March 23, 2021

CHULA VISTA (KUSI) – Chula Vista Police Drone as First Responder program's new FAA approval allows the police agency to launch drones from anywhere within city limits to respond to 911 calls and emergencies.

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The approval expands 33% coverage of the city to 100% providing airborne support to public safety operations in a safe, responsible, and transparent manner.

Chula Vista Police Chief Roxana Kennedy joined Good Morning San Diego to describe how the DFR program helps save lives and maintain a safe community. “Since 2018, the Drone as First Responder program has made an incredible difference in how we respond to emergency calls. It allows officers to see what is happening at a scene, including what risk may or may not exist before they round the corner and are thrust into a dangerous situation. Drones are immensely important to the future of public safety and are a critical lifesaving tool… I can’t imagine our operations without them.” https://www.kusi.com/chula-vista-police-drone-as-first-responder-program-expands-citywide/

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BVLOS Cargo Delivery Approved in Senegal: Could “Sky Lanes” Work Anywhere?

Miriam McNabb March 26, 2021

In a big step forward for cargo drone delivery, CA-based Volansi has received flight approvals to operate beyond visual line of sight in Senegal.

Volansi is currently the only cargo drone operator in Senegal with BVLOS approval to operate country-wide. To ensure safe integration with Senegal’s manned aircraft traffic, Volansi has built sky lanes, or “aerial delivery routes” for their customers. “In the near future, they plan to expand the network and become the first interconnected delivery drone network of sky lanes across the continent connecting mission points over rivers, bridges, and hills enabling reliable and quick deliveries via drone.”

In the comparatively lower density airspace over Senegal and many countries around the world, sky lanes offer a clear path forward for the safe integration of drones. Sky Lanes could provide a valuable model for use in lower density or less populated areas anywhere, which represents an enormous opportunity. https://dronelife.com/2021/03/26/bvlos-cargo-drone-delivery-approved-in-senegal-could-the-concept-of-sky-lanes-work-anywhere/

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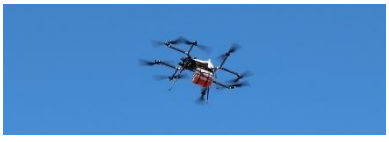
What is a Vertiport? NUAIR Brings Industry Players Together for Air Mobility Strategies Miriam McNabb March 28, 2021

What is a vertiport, exactly, and how should vertiport technology be integrated into the current transportation infrastructure? More than 70 representatives from the FAA, NASA, and industry gathered earlier this month to "further develop a strategic plan that supports NASA's advanced air mobility (AAM) efforts." "NASA awarded Oneida County this critical contract in August 2020 to conduct research in automation technology to support high-density vertiport operations that facilitate vertical takeoff and landing of large-scale unmanned aircraft across populated areas."

NUAIR manages a project team that includes Deloitte, Boeing, Crown Consulting, Mosaic ATM, 5-Alpha LLC, Helicopter Association International and the General Aircraft Manufacturers Association. The team has worked together for 8 months, developing 3 reports: a trade study, the concept of operations, and the software architecture requirements for vertiport automation. At the March meeting, the project team brought in a wide audience of industry stakeholders to review the reports and discuss next steps.

Vertiports could be built on top of buildings, be a hub like an airport or they could be designed with a bus stop concept for drop-offs and pickups. "Air traffic will be a mix of piloted, semi-automated, and fully automated aircraft with multiple vertiport configurations depending on the location and type of operation." https://dronelife.com/2021/03/28/what-is-a-vertiport-nuair-brings-industry-players-together-to-develop-advanced-air-mobility-strategies/

THIS 13-HOUR ADVENTURE MIGHT BE A DRONE FLIGHT TIME WORLD RECORD March 29, 2021 Sally French The Drone Girl News



Skyfront's Perimeter 8 multirotor hybrid drone may have broken the drone flight time world record at 13 hours and 4 minutes as well as record distance traveled at 205 miles. And, the whole event was documented via the drone's onboard 360 cameras.

The record wasn't verified by any independent records agencies, though it looks like the drone flight time world record tops the former record made by South Korean company MetaVista using Intelligent Energy's 800W fuel cell power, to fly a quadcopter drone for 12 hours, 7 minutes and 5 seconds using liquid hydrogen to fuel the module.

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It makes sense that Skyfront would hold such a record, as the Silicon Valley drone maker's goal is to be the leading manufacturer of long endurance gasoline-electric hybrid drones. The company, which was founded in 2014, makes a drone called the Skyfront Perimeter 8, which is a relatively lightweight, 8-rotor drone that uses a proprietary fuel-injected hybrid gasoline-electric powertrain. "The powertrain replaces the battery and dramatically extends flight times by a factor of twenty," according to a statement from Skyfront. https://www.thedronegirl.com/2021/03/29/skyfront-flight-time-world-record/

AeroVironment Awarded $21 Million Contract for Raven Radio Frequency Modifications March 26, 2021 Military News

AeroVironment, Inc. (NASDAQ: AVAV), a global leader in Unmanned Aircraft Systems, today announced the United States Army exercised the second of three options under the Army's multi-year small UAS contract on February 25, 2021. The value of the contract option is $20,979,905 and includes avionics and data link upgrade packages to modify radio frequencies employed by the Army's existing fleet of Raven® tactical UAS.

The contract option was exercised under the Army's FCS domain awarded to AeroVironment in June 2019 with an initial order of $862,488. FCS is the first of six domains comprising the Army's existing five-year contract and has a potential value of $55 million.

The Raven system is designed for operations requiring low-altitude Intelligence, Surveillance and Reconnaissance. With a wingspan of 4.5 feet and weighing just 4.2 pounds, the hand-launched Raven provides situational awareness, day or night, with an operational range of 6.2 miles. It delivers real-time video or infrared imagery to ground control and remote viewing stations. https://uasweekly.com/2021/03/26/aerovironment-awarded-21-million-contract-option-for-raven-radio-frequency-modifications-under-existing-u-s-army-fcs-contract/?utm_source=rss&utm_medium=rss&utm_campaign=aerovironment-awarded-21-million-contract-option-for-raven-radio-frequency-modifications-under-existing-u-s-army-fcs-contract&utm_term=2021-03-29

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Drone capturing Iceland volcano eruption video melts Scott Simmie Mar. 28, 2021

HOT SHOT

Drone pilots have been producing some pretty amazing videos of that volcanic eruption in Iceland. But we've yet to see one quite like this.

The Fagradalsfjall volcano has been putting on a spectacular show, and a lot of people have been flying drones to capture the magic. In fact, we pulled together a series of those videos here. But this one is different.

Lava can be as hot as 1,250° Celsius. That's *crazy* hot. So you can imagine what that might do to a drone if it got too close. But what's an intrepid pilot to do if you want that amazing top-down eruption shot. You've got to fly over the thing, risking both that you might get smacked by lava or pumice or that the rising waves of incredible heat will cause some damage.

The pilot,Garðar Ólafs, founder of @Airstock.is, says he "melted my drone for this shot…" https://dronedj.com/2021/03/28/a-pilot-captured-amazing-video-of-the-iceland-volcano-but-melted-his-drone/#more-53676

30Mar21

Lilium Unveils SPAC Deal, Seven-Seat EVTOL Graham Warwick March 30, 2021

German regional air mobility startup Lilium is to go public in a deal expected to provide up to $830 million in funds to complete certification, begin production and launch commercial operation of its piloted seven-seat Lilium Jet air taxi in 2024.

Munich-based Lilium is to list on the Nasdaq through a merger with Qell Acquisition Corp., a special-purpose acquisition company (SPAC) led by Barry Engle, a former president of General Motors North America.

Expected to close in the second quarter, the SPAC transaction values the company at approximately $3.3 billion. Total gross proceeds are expected to be approximately $830 million, including $380 million in cash held in trust and $450 million from a PIPE, or private investment in public entity.The PIPE includes investments from Tesla and SpaceX backer Baillie Gifford and from funds managed by BlackRock, Tencent, transportation infrastructure company Ferrovial, Liechtenstein private banking company LGT, Palantir and FII Institute. Lilium has previously

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raised more than $376 million. https://aviationweek.com/aerospace/urban-unmanned-aviation/lilium-unveils-spac-deal-seven-seat-evtol?utm_rid=CPEN1000003332045&utm_campaign=27675&utm_medium=email&elq2=19caad94bda643f28b57e38356a45f82

US regulatory expert to jumpstart FAA BVLOS permissions for drone work

HEADLINE NEWS JOE PESKETT MARCH 30, 2021

US drone service provider Aerial Production Services (APS) said it was able to improve inspections and dramatically reduce costs after the FAA authorized a waiver for beyond line-of-sight flights. The waiver was achieved by enlisting regulatory professional services from Iris Automation, who cut the time taken to receive approval by an estimated six months.

APS, a drone service provider for telecommunications, natural gas and oil, and construction industries, aims to provide the safest, most innovative and precise solutions for aerial inspections of pipelines, cellular and utility towers. The company has flown over 17,000 sites in 49 states, leveraging pilots with specialized expertise flying specific, sensitive assets. However, commercial drone operations are limited by Visual Line of Sight rules, which severely restrict the distances they can cover.

APS's BVLOS waiver application was built using Iris Automation's Regulatory Resource Center (RRC). The RRC provides a structured workflow to help address regulatory and safety concerns that the Civil Aviation Authority require, with an online portal to build, test, and audit complex and advanced operational approvals supported by a team of UAS regulatory experts. https://www.commercialdroneprofessional.com/us-regulator-expert-to-jumpstart-faa-bvlos-permissions-for-drone-work/

Two Way Radio for Drones Means Rescuers Can Hear a Cry for Help Miriam McNabb March 29, 2021

A two way radio for drones from Dotterel Technologies means that drone operators could actually have a two-way conversation with people on the ground.

The sophisticated audio payload allows for communications despite the sound of the drone itself. Drones have become a critical tool for search and rescue operations, because they can cover a large area quickly. Operators seek missing

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persons through cell phone signals, thermal imaging, and visual imaging, but until now they haven't been able to locate a missing person by one of the most obvious methods: a cry for help.

Shaun Edlin, CEO of Dotterel, and his team demonstrated the application to a multi-agency search and rescue exercise in the Hunua Ranges, Auckland, New Zealand. "Dotterel has found a way to put its unique, highly directional microphone array and processor on drones so that it can capture audio while rejecting drone propellor noise and other loud environmental noise. The audio system is two-way so that the rescuers can not only hear the missing people call for help but also ask questions about injuries, other people and their location and advise of rescue actions." https://dronelife.com/2021/03/29/two-way-radio-for-drones-means-rescuers-can-hear-a-cry-for-help/

Air Force Drone Plan May Rile MQ-9 Champions THERESA HITCHENS March 29, 2021

WASHINGTON: The Air Force plans to develop a family of highly-survivable drones for multiple missions to replace the MQ-9 — but rather than the Reaper's traditional ground-attack role, the service's top priority seems to be counter-air capabilities.

This may well raise hackles among Combatant Command leaders — and many in Congress — who are wedded to the Reaper for use in ongoing operations such as in Afghanistan and the killing of high-value targets. Mark Gunzinger, director of future projects at the Mitchell Institute, said in an email that the new effort could well spark concerns among MQ-9 supporters. "But it shouldn't," he said.

First, he explained that "Reapers will be in the force for a long time." Second, "the family of UAVs the Air Force apparently wants to procure will expand — not contract — the mission capabilities of its UAV force and threat environments it will operate in." And finally, "I believe the Air Force intends to grow its overall UAV capacity over time, not reduce it. UAVs—including attritable systems—are force multipliers in many regards."
https://breakingdefense.com/2021/03/air-force-drone-plan-may-rile-mq-9-champions/

DARPA Initiates Design of LongShot Unmanned Air Vehicle March 29, 2021 Military

DARPA's LongShot program, which is developing an air-launched unmanned air vehicle with the ability to employ multiple air-to-air weapons, has awarded contracts to General Atomics, Lockheed

Martin, and Northrop Grumman for preliminary Phase I design work. The objective is to develop a novel UAV that can significantly extend engagement ranges, increase mission effectiveness, and reduce the risk to manned aircraft.

LongShot will increase the survivability of manned platforms by allowing them to be at ranges far away from enemy threats, while an air-launched LongShot UAV efficiently closes the gap to take more effective missile shots.

"The LongShot program changes the paradigm of air combat operations by demonstrating an unmanned, air-launched vehicle capable of employing current and advanced air-to-air weapons," said DARPA program manager Lt. Col. Paul Calhoun. In later phases of the program, LongShot will construct and fly a full-scale air-launched demonstration system capable of controlled flight, before, during, and after weapon ejection under operational conditions.
https://uasweekly.com/2021/03/29/darpa-initiates-design-of-longshot-unmanned-air-vehicle-2/?utm_source=rss&utm_medium=rss&utm_campaign=darpa-initiates-design-of-longshot-unmanned-air-vehicle-2&utm_term=2021-03-30

Drone captures images of a reindeer 'cyclone' Scott Simmie Mar. 30, 2021

Not until today had we heard this term. But it came to us today courtesy of Science girl, a Twitter account that never fails to deliver interesting and obscure science content – along with much-needed context.

The reindeer pull into a tight little spiral, keeping the fawns at the center. And the view from above? Well, it's pretty incredible.

It seems reindeer have been doing this a long time. In fact, even the Vikings were confounded by these cyclones, which made it difficult for them to aim an arrow accurately at the moving mass.

This footage, in fact, comes from a documentary that aired on PBS in February called *Wild Way of the Vikings*. Here's an interesting snippet from that article: *This behavior is also practiced by reindeer kept in corrals, occurring in groups of at least 20 to 25 animals, researchers wrote in a 2002 study published in the journal Rangifer. Penned reindeer formed "cyclones" and were observed to run "invariably" in a counterclockwise direction, the scientists reported.*
https://dronedj.com/2021/03/30/drone-captures-images-reindeer-cyclone/#more-53882

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Aircraft-carriers take to the air Science & technology Mar 27th 2021 edition

Aircraft-carriers are juicy targets. They are also increasingly vulnerable ones. American naval planners are particularly worried about China's df-26. This weapon, which came into service in 2018, is a so-called maneuvering ballistic missile that has been dubbed a "carrier killer".

This threat is fearsome enough to keep American carriers at least 1,600km from China's coast. To that end, DARPA, the defense department's advanced research projects agency, is running a program called Gremlins, a name that also applies to the individual drones themselves. A Gremlin drone weighs 680kg and has a wingspan of nearly 3.5 meters. Once it has been dropped, deployed its wings and fired up its turbofan engine, it can fly to an area up to 500km away, "go in and create havoc" and return to its aerial mothership.

Gremlins would operate in fleets. In this, they are like the "loyal wingman" idea of drone squadrons accompanying a crewed fighter aircraft into battle. Operational Gremlins need never touch the ground. The aerial aircraft-carrier of choice for the Gremlin project is a modified C-130 cargo plane, which could carry up to four of the drones in bomb racks slung under its wings. The tricky part is fishing them out of the air when they return from a mission. For this, Dynetics has designed a special recovery system that fits above the cargo ramp.
https://www.economist.com/science-and-technology/2021/03/25/aircraft-carriers-take-to-the-air?utm_campaign=the-economist-today&utm_medium=newsletter&utm_source=salesforce-marketing-cloud&utm_term=2021-03-30&utm_content=article-link-5&etear=nl_today_5

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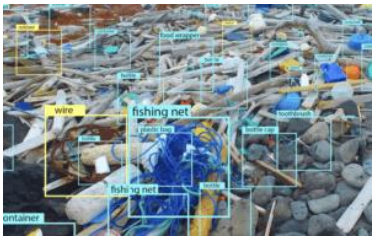
Drones Tackle Trash Problem – in the U.K. and Around the World Miriam McNabb March 30, 2021



See this image change at Ellipsis Earth

A city in the U.K. is utilizing the sophisticated technology of Ellipsis Earth to address the problem of trash with drones. Cities Today reports that a pilot program in Bournemouth, Christchurch and Poole will use drone technology to deal with litter.

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Local city government is partnering with environmental non-profit Hubbub and startup Ellipsis Earth to use drone data and AI-powered analytics to make decisions on where to place trash cans, how to set street cleaning schedules, and educate communities about litter. The partners have called the pilot "the most scientifically robust litter survey ever undertaken in the UK".

Drone imagery is processed by Ellipsis Earth software to automatically and rapidly detect discarded litter items and quantify them by type and brand to create litter heatmaps. This data, along with expert analysis and recommendations, will be shared with BCP council, Hubbub and McDonald's, to help them better understand and prevent littering.

Ellipsis Earth began to capture data over beaches, parks, shopping streets and green space last month, using lightweight commercial drones. As COVI restrictions ease, the surveys will be repeated. "This data will inform a series of litter interventions over the course of the summer and a further survey will take place in July to assess whether they have been effective," says the announcement. https://dronelife.com/2021/03/30/drones-tackle-trash-problem-in-the-u-k-and-around-the-world/

Skycatch Raises $25M in Funding March 30, 2021

Skycatch has announced a $25 million raise, led by ADB Ventures and Wavemaker. Founded in 2013, the Bay Area-based company provides centimeter-accurate 3D scanning services, primarily for construction sites and mining operations.

The service has already been rolled out in a number of different locations around the world — with north of 10,000 sites, according to founder and CEO Christian Sanz. The list includes Chile, Colombia, Peru, Brazil, Australia, Canada, the U.S., Indonesia, China, Philippines, Thailand and Japan.

The company's technology works with off-the-shelf drones. It provides the 3D mapping software, as well as a base station. Skycatch is also working with off-the-shelf lidar companies to help capture data in more difficult environments, including underground mining operations.

The funds will go toward expanding the 50-person company's sales and marketing team — both of which have been fairly small portions of the company's headcount.
https://www.uasvision.com/2021/03/30/skycatch-raises-25m-in-funding/

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AI-based system for first test of multiple drone fleets operating in the same urban airspace E&T editorial staff March 25, 2021

An Israeli software company is taking part in a two-year pilot program that will see drones operate in mesh networks to validate the safe and efficient integration of drone deliveries in urban environments.

Airwayz is taking part in the pilot that they say will see drone delivery tested "above and beyond" any other scheme of its kind. In a world-first - drone fleets from multiple delivery companies, operating in Hadera, just north of Tel Aviv.

According to Eyal Zor, CEO and co-founder of Airwayz, "Working in corridors is simply not practical for the technology to scale-up for commercial use." Zor and the team at Airwayz hope the pilot scheme will demonstrate how drones can operate in a mesh, reacting safely to real-time situations, while also maximizing delivery efficiency for a commercially viable solution to drone delivery.

The pilot program, organized by the Israeli Innovation Authority in collaboration with the Ministry of Transport and the Prime Minister's Office, began in March 2020 with drone flight tests starting for the first time last week (15 March).
https://eandt.theiet.org/content/articles/2021/03/airwayz-ai-based-system-to-support-world-s-first-test-of-multiple-drone-fleets-operating-in-the-same-urban-airspace/?utm_campaign=Energy+Drone+%26+Robotics+Coalition+Content&utm_medium=email&_hsmi=118807248&_hsenc=p2ANqtz-8QUuLVdSicrjtL6r49cixTNUGZZcsYWXMJcKFBHP9iIJAd3QPE_5746datz7woG2f58FwyQtpQF12B-iIcZBcQ-nH8fw&utm_content=118807248&utm_source=hs_email

Elistair announces $6 million Series B to accelerate expansion Josh Spires Mar. 31, 2021

The money will allow the company to accelerate its expansion plans in the United States while reinforcing its presence in Europe. Over the last few months, more than 40% of Elistair's business now comes from North America.

Elistair will soon start a campaign that will recruit around 20 people for its offices in Lyon, France, and Boston.

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Elistair currently has three products, the SAFE T2, a tether station that offers extended flight time to a range of commercially available drones. The LIGHT T4 is a smaller tether station designed to fit into a hard-shell case that can be used almost anywhere. It also works with 20 commercial drones.

The final product is the Orian tethered drone capable of flying for more than 10 hours with a data transfer rate of 200 MB/s. The drone hovers at around 300 feet and can detect vehicles up to 6 miles away. https://dronedj.com/2021/03/31/elistair-announces-6-million-series-b-to-accelerate-expansion/#more-53924

VIDEO: SwissDrones wins French power inspection challenge HEADLINE NEWS JOE PESKETT MARCH 31, 2021

A number of drone operators entered the challenge, but only SwissDrones made it to the field test stage. During the test, SwissDrones' mini helicopter overflew a 2km stretch of power lines collecting imagery data.

Engineers then inspected the photos to check they were high quality enough to show the defect in the power line.

A statement from the UAV company said: "SwissDrones has successfully delivered the requested results (highest-resolution images of defects captured in a continuous fly-by) in a recent challenge of the French power-line operator RTE. Thank you to our partners PhaseOne and GGS, as well as RTE for the good collaboration." See the video: https://www.commercialdroneprofessional.com/video-swissdrones-wins-french-power-inspection-challenge/

A2Z Performs First Commercial Drone Delivery Flight with Its Rapid Delivery System João Antunes Drone Delivery MARCH 29, 2021

Together with DroneUp, A2Z Drone Delivery, a developer of the patented tethered freefall drone delivery mechanism, has performed its first commercial flight in residential drone deliveries. Initially designed for rapid deployment of time-sensitive first aid and life-saving medical supplies, or to deliver material to destinations where landing the drone is

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problematic such as a tossing ship or dense forest, the RDS1 helped DroneUp deliver Coca-Cola with Coffee cans via drones to residents of Coffee County, Georgia.

Aaron Zhang, founder of A2Z Drone Delivery, LLC, said, "The unique capabilities of the RDS1 were tailor-made for this type of residential delivery where our tethered freefall mechanism can accurately and quickly deposit payloads while hovering far from people, homes, trees, and utility wires."

The RDS1 reduces time-on-station to just 30 seconds per delivery with its mechanism to free-fall the tethered payload before bringing it to a gentle stop near the ground. The delivery mechanism incorporates a lidar sensing system streaming continuous data to the onboard firmware that controls the payload's rapid descent. Based on the DJI Matrice 600 Pro, the RDS1 is designed for payloads up to 2 kg (4.4 lbs.) and can fly in a range of 3.5 km (2.17 miles). Rated at 100 lbs. tensile strength, the Kevlar tether and elastic fabric pouch can be reeled back up for reuse or to retrieve materials from personnel on the ground.
https://www.commercialuavnews.com/drone-delivery/a2z-solves-some-of-drone-delivery-concerns-with-its-rapid-delivery-system?utm_source=marketo&utm_medium=email&utm_campaign=newsletter&utm_content=newsletter&mkt_tok=NzU2LUZXSi0wNjEAAAF8LZGdGVRcRASDQsiJ8HhDEHtgSd0-YGELLXpPk4DaRQO2LF3T2t0FQwQgolevJwYjF1Yihh4bTJzB_mKXno263bW7rpNxe7zAfHM_-Gw05cMe

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Telehealth Drone Brings Healthcare to Your Living Room Miriam McNabb April 01, 2021

Researchers at the University of Cincinnati have developed a new telehealth drone to improve access to healthcare.

"Inventors Victoria Wangia-Anderson, Manish Kumar, Seung-Yeon Lee and Debi Sampsel from three colleges at UC collaborated to develop a semi-autonomous prototype that can be dispatched right to people's homes," says a UC press release. "The drones are big enough to carry medicine or medical supplies but small enough to maneuver the tight confines of a home using navigational algorithms developed by UC engineers."

Professor Manish Kumar

The UC telehealth drone provides the camera and display screen so that patients can engage in a conversation with their provider. It also

performs a delivery function, carrying a small waterproof box to deliver medical supplies, or collect lab tests.

Dr. Debi Sampsel, DNP held the Drone at her home in West Chester.

Researchers from three colleges at UC collaborated on the new prototype. https://dronelife.com/2021/04/01/telehealth-drone-brings-healthcare-to-your-living-room/

Citadel Defense Scores $5M DOD Contract Jason Reagan April 01, 2021

Counter-drone provider Citadel Defense just scored another contract with the U.S. defense department in what has become a string of awards from defense agencies worldwide.

The system uses AI, machine learning and low-collateral electronic countermeasures that "blind" a rogue drone pilot from collecting intelligence and prevent the drone from penetrating protected airspace. The Titan system also generates a post mission analysis report that highlights threat activity patterns to equip ground command with mission-critical insights.

"Our team is honored to support the military's efforts by delivering operator-centric and mission-proven CUAS solutions to the front lines," Citadel Defense CEO Christopher Williams said. "Titan gives U.S. troops and allies an advantage over non-state actors using drones as a weapon."

According to Williams, senior Pentagon officials have called small drones the greatest threat to military forces since the introduction of IEDs on the battlefield. "The use of small drones has exploded and is rapidly changing the security environment. Adversaries have access to affordable and highly capable drone platforms that are easily adapted and weaponized to conduct surveillance and targeting against U.S. forces." https://dronelife.com/2021/04/01/citadel-defense-scores-5m-dod-contract/