



UAS and SmallSat Weekly News

Contents

- 2 [Frankfurt Airport closes for an hour following drone sighting](#)
- 2 [Virginia Unmanned Systems Center at CIT Forms Board of Advisors](#)
- 3 [DroneDeploy Receives Rigorous, Comprehensive Security Certification](#)
- 3 [How Not to Stop Rogue Drones: FAA Addresses FAQ about Airport Security Systems](#)
- 4 [Counter-drone company likely violated federal law during Ultra Music Festival](#)
- 4 [More than 500 public safety officials trained on drone operations in NY state](#)
- 5 [Students in New Mexico map dinosaur tracks with drones](#)
- 5 [Boeings' Cargo Air Vehicle Completes First Outdoor Flight](#)
- 6 [XAG Launched JetSeed™ Granule Spreading System to Battle Grassland Degradation](#)
- 6 [Unmanned aerial vehicle equipped with sensors and communications for law enforcement](#)
- 7 [FAA to Debut Remote ID Rule in July](#)
- 7 [Hamburg to invest EUR850,000 in urban air mobility projects](#)
- 8 [How Wing won the right to deliver fresh food in Canberra](#)
- 8 [Mars helicopter to fly with a boost from NASA Langley](#)
- 9 [Kenya releases draft UAS rules and will integrate UTM within the ATM network](#)
- 9 [Europe's Drone Industry Set to Receive Harmonized Rulebook](#)
- 10 [FAA Drone Webinar: What is Class E airspace and how do I operate in it?](#)
- 10 [DARPA to launch competition for AI-powered aircraft dogfighting](#)
- 11 [Oil Spill Response Limited Announces New Global UAV Service for Members](#)
- 12 [RETURN TO HOME\(STEAD\). AERIAL PHOTOS CONNECT PRAIRIE PAST AND PRESENT](#)
- 13 [Is Flight Over People the Tipping Point for the Commercial Drone Industry? Maybe.](#)
- 13 [High demand from oil and gas industry prompts new Terra Drone branch](#)
- 14 [Cape: Aerial Telepresence Changes the Definitions of Pilot and Commander for Drones](#)
- 14 [FAA UAS Symposium, Next Month in Baltimore](#)
- 15 [Next SpaceX Launch To Carry 60 Satellites](#)
- 16 [Electric 'flying taxi' prototype unveiled by German start-up](#)
- 16 [Drone pilot charged with violating secure airspace over two NFL games](#)
- 17 [K-State Hosting Midwest Big Data Hub with Focus on UAS for Digital Agriculture](#)
- 18 [WATCH: Everdrone demos First Responder UAS](#)
- 18 [TORUS: Atmospheric Scientists Using Drones to Understand Tornadoes](#)
- 19 [NASA to show off drone traffic management testing to media](#)



UAS and SmallSat Weekly News

11May19

Frankfurt Airport closes for an hour following drone sighting Associated Press May 9, 2019



Flight	Code share	nach - über to - via	Zeit - time 07:59	Gate	Status
H 230	UA 8800	Rome-Fiumicino			cancelled
H 812	SK 3600	Gothenburg			cancelled
H 126	TG 7964				annulliert
H 1004	TG 7696				cancelled
H 1346	TG				annulliert
H 004					annulliert
H 952					cancelled
H 12					annulliert
H 2018				T6	train
SA 7508					annulliert
					cancelled
					cancelled

A file photo shows a passenger standing in front of a Frankfurt airport departure board

FRANKFURT, Germany (AP) — Officials in Germany say a drone sighting has closed Frankfurt's busy international airport for an hour.

An airport spokesman said Thursday that a pilot reported seeing a drone and the airport was closed down from about 7:20 a.m. until 8:20 a.m. while German federal

police searched for the drone and its operator with a helicopter. The airport has since reopened. Police are continuing to investigate the incident.

[This is the second time in less than two months](https://www.usatoday.com/story/travel/news/2019/05/09/frankfurt-airport-closed-hour-following-drone-sighting/1150125001/) that flights to and from Frankfurt Airport were interrupted by drone activity in the area. <https://www.usatoday.com/story/travel/news/2019/05/09/frankfurt-airport-closed-hour-following-drone-sighting/1150125001/>

Virginia Unmanned Systems Center at CIT Forms Board of Advisors May 8, 2019
News



The Virginia Unmanned Systems Center at the Center for Innovative Technology which serves as the primary information resource and growth catalyst for unmanned systems in Virginia, has established a Board of Advisors to support rapid market expansion. The 24-member advisory board brings together expertise and leadership from across the Commonwealth to guide strategies and priorities within the four domains of the unmanned systems market: land, sea, air, and space.

"Our mission at CIT is to grow the unmanned systems customer base in Virginia and, thereby, grow the industry. We are very grateful for the commitment of our advisors, who are leaders from Commonwealth businesses, universities, and economic development organizations – they are a great representation of Virginia's unmanned systems ecosystem," said Tracy Tynan, Director, VUS at CIT. "We have several significant initiatives and opportunities already



UAS and SmallSat Weekly News

underway and we look forward to working with the advisory board to fine tune and move these initiatives forward most effectively.” The Advisory Board met for the first time on March 28, 2019. To see a full list of all members, please visit <https://www.vus.virginia.gov/ums-advisory-board/>. https://uasweekly.com/2019/05/08/virginia-unmanned-systems-center-at-cit-forms-board-of-advisors/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_05_09_2019&utm_term=2019-05-09

DroneDeploy Receives Rigorous, Comprehensive Security Certification May 8, 2019 News



[DroneDeploy](#), the leader in commercial drone software, announced that it has received ISO-27001 security certification —the only internationally accepted security standard. The company manages data on the millions of acres mapped by more **than 4,000 customers across 180 countries.**

Considered a security certification that goes beyond IT concerns, ISO-27001 requires a suite of security protocols designed to maximize the security of customer and employee data.

https://uasweekly.com/2019/05/08/dronedeploy-receives-rigorous-comprehensive-security-certification/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_05_09_2019&utm_term=2019-05-09

How Not to Stop Rogue Drones: FAA Addresses FAQ About Airport Security Systems Miriam McNabb May 10, 2019



The FAA is working hard to communicate with airports about what can and can't be done with airspace security. This week, the FAA [clarified their position](#) and provided [more information](#) for airport authorities.

“...The FAA is acting on the known concerns of drones at airports, but there is still much to be decided in terms of who is responsible on the federal, state and local levels for creating and implementing airport drone detection programs. The door is open for airports to enquire about how to create their own programs, but in the meantime, the FAA must move quickly to adopt formal drone detection technology standards for US airports.”

Airspace security firms, the FAA, and airport authorities are all working to get working systems in place – but they are in a race against time and bad actors who may take advantage of the gap



UAS and SmallSat Weekly News

to do more damage to air traffic, and the drone industry. <https://dronelife.com/2019/05/10/how-not-to-stop-rogue-drones-faa-addresses-faq-about-airport-security-systems-and-legal-countermeasures/>

Counter-drone company likely violated federal law during Ultra Music Festival

Haye Kesteloo May 9th 2019



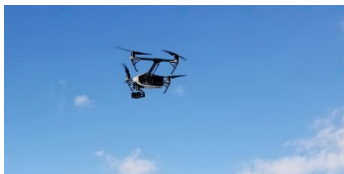
The FAA said the invitation of a counter-drone company by the Miami Police to keep the skies free of drones at The Ultra Music Festival on Virginia Key may have broken federal law by jamming drone signals in the area.

The agency “looked into a report that the Miami Police Department hired a company to provide counter-drone services during a recent music festival in Key Biscayne. MPD stopped the operations after the FAA advised the department that the use of counter-drone technologies may create possible conflicts with federal law.” Jamming drone signals can only be legally performed by government agencies such as the Department of Homeland Security and the Department of Defense.

The Miami Police Department denies hiring the counter-drone company but did accept their invitation to do a demo. The police said they were unaware such counter-drone jamming activities would be against federal law. Reportedly, the FAA is looking into the matter, and the FCC is likely to get involved as well since the jamming of radio signals falls under [their authority](https://dronedj.com/2019/05/09/counter-drone-company-violated-federal-law/#more-16420). <https://dronedj.com/2019/05/09/counter-drone-company-violated-federal-law/#more-16420>

More than 500 public safety officials trained on drone operations in NY state

[Haye Kesteloo](#) May 9th 2019



New York State Governor Andrew M. Cuomo announced that more than 500 students have been trained in the use of drones for public safety operations at the State Preparedness Training Center since September 2017. The Division of Homeland Security and Emergency Services expects to add **several hundred more drone operators by 2020**.

“Governor Andrew M. Cuomo today announced more than 500 students have been trained in the use of unmanned aircraft systems, or drones, for public safety operations at the State Preparedness Training Center. The Division of Homeland Security and Emergency Services reached the **milestone** in April during its UAS Awareness workshop, one of four courses offered



UAS and SmallSat Weekly News

on UAS operations. The courses help educate public safety officials and first responders on how to integrate drones into their public safety operations. New York State has made great strides in implementing this technology into the state's public safety operations," Governor Cuomo said. "The training available at our State Preparedness Training Center equips first responders with an expanded ability to assess emergency situations and fine-tune operations and response plans like never before." <https://dronedj.com/2019/05/09/500-public-safety-officials-drone-operations-ny-state/#more-16406>

Students in New Mexico map dinosaur tracks with drones Haye Kesteloo May 9th 2019



New Mexico State Parks announced it is teaming up with Central New Mexico Community College students and the New Mexico Museum of National History and Science to map the footprints of dinosaurs at Clayton Lake State Park.

Clayton Lake State Park is located in northeast New Mexico, about 4.5 hours from

Albuquerque and is well known for its abundance of dinosaur footprints. New Mexico State Parks partnered with Central New Mexico Community College students and the New Mexico Museum of National History and Science to map out the footprints and provide key information to scientists about the ancient reptiles.

Rick Watson who is one of the instructors from the central New Mexico community college says that students will be flying their drones at different altitudes to record various levels of detail when mapping out the dinosaur footprints. The hundreds of tracks at Clayton lake are about 100 million years old along an ancient seacoast and are from four different species of dinosaurs made within a single year. <https://dronedj.com/2019/05/09/students-new-mexico-map-dinosaur-tracks-drones/#more-16394>



UAS and SmallSat Weekly News

Boeings' Cargo Air Vehicle Completes First Outdoor Flight May 9, 2019 News



In a safe and controlled environment, the electric vertical takeoff and landing unmanned aerial vehicle took off, hovered, transitioned to forward flight and landed safely. Powered by an electric propulsion system, it is designed to carry a payload up to 500 pounds. Since it was unveiled in 2018, the CAV has evolved from an initial concept to a prototype. A team of Boeing researchers and engineers refined the design through indoor testing, flight simulations and lab research.

The vehicle features six dual-rotor systems and **12 propellers**. It measures 17.5 feet long, 20 feet wide, 5 feet tall and weighs **1,100 pounds**. https://uasweekly.com/2019/05/09/boeings-cargo-air-vehicle-completes-first-outdoor-flight/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_05_10_2019&utm_term=2019-05-10

XAG Launched JetSeed™ Granule Spreading System to Battle Grassland Degradation May 9, 2019 News



China's leading agri-tech company XAG has just launched a patented granule spreading system JetSeed at its Special Event held in Ruoergai Grassland, Aba, Sichuan. It is designed to dispense granules such as seeds, fertilizers and pesticides precisely through high-speed airflows. It combats grassland degradation, one of the world's biggest environmental challenges, using AI prescription maps and accurate spreading solutions.

At the launch event, XAG introduced this technology in Ruoergai Grassland, one of China's most primitive nature reserves, by spreading grass seeds on 670 hectares of degraded land with a fleet of P30 Plant Protection UASs configured with the JetSeed Granule Spreading System. This is the first time that drones, AI and airflow seeding technologies were harnessed to restore the grassland biomes in the plateau area. https://uasweekly.com/2019/05/09/xag-launched-jetseed-granule-spreading-system-to-battle-grassland-degradation/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_05_10_2019&utm_term=2019-05-10



UAS and SmallSat Weekly News

Unmanned aerial vehicle equipped with sensors and communications for law enforcement AIR FORCE



For law enforcement patrol officers, stopping and interviewing an individual along the road can be a very dangerous situation.

Researchers at the Air Force have developed a small UAV, deployable from the officer's vehicle, which can interact with the subject of interest. The officer can issue instructions to the subject through the

UAV, capture images of the subject and documents, and compare those to database records. On-board sensors can also identify suspicious objects such as weapons. This vehicle-deployed UAV includes a base station mounted on the roof of the patrol vehicle where the UAV is launched, retrieved, and secured during transport. US patent 9,481,459 is available for license with collaboration with Air Force scientists and engineers.

https://techlinkcenter.org/technologies/unmanned-aerial-vehicle-uav-equipped-sensors-communications-specific-law-enforcement-use/?utm_source=uas_newsletter&utm_medium=email&utm_campaign=technology

13May19

FAA to Debut Remote ID Rule in July Nick Zazulia May 10, 2019



The remote ID rules — often compared to license plates for drones — would allow the FAA, police officers and other public officials to look up a UAS by a broadcast unique identifier and find information about the operator.

Remote ID has its detractors, who say it exposes too much private information of operators, but the FAA determined that it is necessary since the operator is not present, and there needs to be some accountability attached to that anonymity. Industry and regulators are trying to figure out who gets access to what information, but everyone has largely been waiting for the FAA to release its verdict after it put out a request for information on the topic at the end of last year.

UAS Integration Office Executive Director Jay Merkle has previously said that the FAA learned a lot from its grappling with drones — a learning curve which he believes will help it more smoothly deal with the urban air mobility industry — and that it is now in a place of effectively facilitating industry. <https://www.aviationtoday.com/2019/05/10/faa-remote-id-drones/>

Hamburg to invest EUR850,000 in urban air mobility projects May 9, 2019 Philip Butterworth-Hayes Urban air mobility



UAS and SmallSat Weekly News



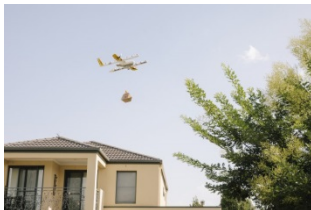
The City of Hamburg is significantly expanding its activities supporting the development of urban air mobility and the civilian use of drones. Senator Michael Westhagemann, Minister for Economic Affairs, Transport and Innovation, announced the move on Tuesday night at a Parliamentary Evening in Hamburg's state representative office in Berlin.

The "Windrove 2.0" program builds on the Network for Promoting Drone Activities in Metropolitan Regions, launched in Hamburg in 2017. Within the Hamburg Aviation Cluster and the ZAL Centre of Applied Aeronautical Research, the aim for "Windrove 2.0" is to continue networking and open up potential application scenarios for urban air mobility. Hamburg State, the European Regional Development Fund, and ZAL will be providing almost EUR 850,000 to fund project management between now and 2022. Since last year, Hamburg has been one of the five German model regions in Europe's Urban Air Mobility initiative.

<https://www.unmannedairspace.info/urban-air-mobility/hamburg-to-invest-eur850000-in-urban-air-mobility-projects/>

How Wing won the right to deliver fresh food in Canberra May 13, 2019 Philip

Butterworth-Hayes Urban air mobility *By Michael Doran*



Australians spend around AUD2.6 billion (\$1.8 billion) each year on delivered meals and place 68 million online food orders. The ordering process takes minutes, but delivery is slow and costly. For 100 homes in the Australian capital, Canberra, that is about to change as drones take the place of motorbikes and delivery times shrink to not much more than the time it takes to boil a jug.

In April, Australia's aviation safety agency, the Civil Aviation Safety Authority, granted approval for Wing Aviation, a company owned by US giant Alphabet, to commence commercial drone delivery operations in Canberra. The approval follows five years of testing including trials for the last 18 months involving more than 3,000 deliveries. While the primary focus of CASA is safety, it also has an obligation to take account of the impact aircraft use and operation will have on the environment.

CASA spokesperson, Peter Gibson, says that although aviation safety is their first consideration, factors such as noise, the environment and privacy are considered when a license is granted. "It certainly goes into our consideration that the operator is aware of potential negative impacts and prepared to do something about them, as Wing has done on the noise issue," he says.



UAS and SmallSat Weekly News

"However these factors are not the central part of our approval process, which is the safety of people on the ground and in the air" <https://www.unmannedairspace.info/latest-news-and-information/how-wing-won-the-right-to-deliver-fresh-food-in-canberra/>

Mars helicopter to fly with a boost from NASA Langley Tamara Dietrich May 12, 2019



NASA's Mars Helicopter, a small, autonomous rotorcraft, will travel with the agency's Mars 2020 rover, currently scheduled to launch in July 2020, to demonstrate the viability and potential of heavier-than-air vehicles on the Red Planet. This "marscopter" is set to launch on the Mars 2020 rover mission scheduled for next summer.

The copter body is a cube roughly the size of a softball, weighing less than 4 pounds, propped on four splayed "legs." "Its sole purpose is to show we can fly that helicopter on Mars," Gorton said. "After that is demonstrated, it will get a little bigger, it will carry more payload, it will have a little more capability. So it really opens up the exploration of a planet."

The project is led by NASA's Jet Propulsion Laboratory in California, but it required the expertise at **Langley** — for more than a century NASA's premiere facility for aeronautics — to make it work. https://pilotonline.com/news/local/science/article_5ca3a068-7424-11e9-9da3-8bd91bf01c91.html

Kenya releases draft UAS rules and will integrate UTM within the ATM network

May 13, 2019 Philip Butterworth-Hayes UAS traffic management news



Drone operators in Kenya have until 21 May 2019 to respond to new UAS regulatory proposals announced by the Kenya Civil Aviation Authority to enable the full and safe integration of drone operations in the country. As part of these proposals the national "Air Navigation Service Provider shall establish procedures, acceptable to the Authority, for integration of

UAS operation into the airspace to ensure aviation safety and such procedures shall include communication and surveillance detection."

See https://www.kcaa.or.ke/images/Draft_CiviAviation_Unmanned_Aircraft_Systems_Regulations_2019_Revised.pdf.

According to the proposals, every operational drone and drone import will have to be registered with the KCAA and commercial operators will require a Remote Aircraft Operators



UAS and SmallSat Weekly News

Certificate . “The issuance of an ROC by the Authority is dependent upon the UAS operator demonstrating an adequate organization, method of control and supervision of flight operations, training program as well as ground handling and maintenance arrangements consistent with the nature and extent of the operations specified and commensurate with the size, structure and complexity of the organization,” says the text of the proposal rules.

<https://www.unmannedairspace.info/news-first/kenya-releases-draft-uas-rules-and-will-integrate-utm-within-the-atm-network/>

Europe’s Drone Industry Set to Receive Harmonized Rulebook Malek Murison May 13, 2019



Among the conclusions drawn at the High Level Conference on Drones in Amsterdam last November, was that the European Commission and the EU Aviation Safety Agency would work closely with member states and industry stakeholders to continue developing a framework for continent-wide drone regulations. That process has been underway for several years. A big step toward harmonization of EU drone rules was taken when the ‘Implementing Act’ was voted through by EU Member States back in February.

Consumer and commercial drone pilots in Europe can now look forward to a clear set of rules covering most of the continent. Today marks **the end of the scrutiny period** on the EASA’s implementing rules for operational and technical requirements for drones. A unified framework will be a positive for Europe’s drone business, which has long had to deal with differing regulations across borders.

[Drone Manufacturers Alliance Europe](#), which includes DJI and Parrot, published a statement today applauding the EASA’s progress. <https://dronelife.com/2019/05/13/europe-drone-laws-rulebook-easa/>



UAS and SmallSat Weekly News

FAA Drone Webinar: What is Class E airspace and how do I operate in it?



Drone Pilots! Please join Federal Aviation Administration Safety Inspector Kevin Morris, “#FAADroneGuy” and our team of experts on Thursday, **May 23 at 4:00 p.m. ET** for a free LIVE webinar on “What is Class E airspace and

how do I operate in it?” FAA experts will explain the difference between Class E and Surface Class E airspace, why that’s important to the drone operator, and how to navigate operational requirements prior to your flight. [Register Here!](#)

24 hours prior to the event all registrants will receive two emails with a link to the webinar, one from the FAA and one from Eventbrite. Questions about the webinar? Please email socialmedia@faa.gov.

14May19

DARPA to launch competition for AI-powered aircraft dogfighting 13 MAY, 2019

FLIGHTGLOBAL.COM GARRETT REIM LOS ANGELES

The Pentagon’s Defense Advanced Research Projects Agency plans to launch a competition to teach artificial intelligence software programs to control aircraft and their weapons in dogfights.

The research agency sees the competition as the first step in developing software that would **automate air-to-air combat**. AI-controlled fighter aircraft could react faster in combat and free up pilots to spend more time managing a larger air battle.



“Being able to trust autonomy is critical as we move toward a future of warfare involving manned platforms fighting alongside unmanned systems,” says US Air Force Lieutenant Colonel Dan Javorsek, ACE program manager. “We envision a future in which AI handles the split-second maneuvering during within-visual-range dogfights, keeping pilots safer



UAS and SmallSat Weekly News

and more effective as they orchestrate large numbers of **unmanned systems** into a web of overwhelming combat effects.”

DARPA says it will hold a “proposers day” for researchers interested in pitching their ideas on 17 May in Arlington, Virginia.

The ACE program intends to train AI programs in the rules of aerial dogfighting in a similar way to how new fighter pilots are taught. It will start with basic fighter maneuvers in simple one-on-one combat scenarios before moving on to more complex and fast-changing situations. The expansion of the AI performance envelope will be monitored by human pilots in the autonomously controlled aircraft. “Following virtual testing, we plan to demonstrate the dogfighting algorithms on sub-scale aircraft, leading ultimately to live, full-scale manned-unmanned team dogfighting with operationally representative aircraft.”

<https://www.flightglobal.com/news/articles/darpa-to-launch-competition-for-ai-powered-aircraft-458138/>

Oil Spill Response Limited Announces New Global UAV Service for Members

News May 10, 2019



Oil Spill Response Ltd, the world’s largest international industry-funded response cooperative, has expanded its member offer with the launch of an Unmanned Aerial Vehicle service. The new service aims to enhance response capabilities to support members’ needs in the event of a spill.

OSRL has signed ‘call-off agreements’ with a number of third-party UAV providers around the world. Launch partners for the service include Bristow Aerial Solutions, Sky-Futures and Vertical Horizon Media. Each partner has been selected based on their relevant in-country experience, technical capabilities or geographical reach. The agreements will provide members with pre-agreed rates, defined mobilization procedures and a standardized approach to managing common preparedness and response activity.

We have identified a range of scenarios where UAVs would provide a notable advantage over existing approaches including support for containment and recovery operations, shoreline surveys, post-treatment inspections and site security. <https://uasweekly.com/2019/05/10/oil-spill-response-limited-osrl-announces-new-global-uav-service-for->



UAS and SmallSat Weekly News

members/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_daily_newsletter_05_13_2019&utm_term=2019-05-13

RETURN TO HOME(STEAD). AERIAL PHOTOS CONNECT PRAIRIE PAST AND PRESENT

May 13, 2019 Zach Ryall

A Canadian aerial photography company has grown from barnstorming roots into a thoroughly modern firm, using manned and unmanned aircraft to add fresh images to a massive archive that connects families to bygone generations and long-forgotten homesteads.



A Canadian homestead first photographed in 1955 is seen today in living color. The topographical map of the Edmonton area shows the mile-wide paths flown, along with the locations of each roll of film that was changed in flight. Each dark-outlined square was 6 miles by 6 miles.

Kim Bessette and his wife Eileen run an aerial photography business that dates to the 1950s and has stood the test of time. Camera platforms have evolved from single-engine aircraft like Piper Super Cubs to helium-filled blimps and now **drones**. Today, Homestead is leveraging its archive, more than 1.5 million images, to market prints old and new in the agricultural provinces of the Canadian prairie: Alberta, Saskatchewan, and Manitoba. Bessette said he often sells customers a framed side-by-side pairing of then-and-now images. https://www.aopa.org/news-and-media/all-news/2019/may/13/return-to-homestead?utm_source=drone&utm_medium=email&utm_campaign=190514drone

Is Flight Over People the Tipping Point for the Commercial Drone Industry?

Maybe. Miriam McNabb May 14, 2019



In *The Tipping Point: How Little Things Can Make a Big Difference*, author Malcolm Gladwell defines the tipping point as “the moment of critical mass, the threshold, the boiling point”. It’s hard to say exactly when the tipping point for the commercial drone industry will be, or what in particular might cause it – but for Avi Lozowick, Director of Policy at drone safety

system company [ParaZero](https://www.parazero.com/), regulations to allow flight over people may be the push the industry needs. “We’re kind of at an inflection point – flight over people has been limiting the industry



UAS and SmallSat Weekly News

to this point,” says Lozowick. “In order for the drone industry to get to where they need to go, we have to have flight in cities.”

As part of the UAS Integration Pilot Program, Lozowick’s company has been working on the problem. With partners [Botlink and the North Dakota Department of Transportation](#), ParaZero demonstrated flight over people successfully last year. “Now we’re trying to replicate that success with other operators.” <https://dronelife.com/2019/05/14/is-flight-over-people-the-tipping-point-for-the-commercial-drone-industry/>

High demand from oil and gas industry prompts new Terra Drone branch

BUSINESS DRONES AT WORK INTERNATIONAL NEWS ALEX DOUGLAS MAY 13, 2019



Terra Drone has opened a branch in Angola following high demand from the oil and gas industry. The firm made the decision after receiving multiple contracts from major oil and gas companies in West Africa.

The company’s expertise in drone-based flare inspection, thermal analysis, thermal leak detection, gas detection, and structural inspection allows it to provide high-quality data to oil and gas companies at a low cost.

Takumi Shiokawa, director at Terra Drone Angola, commented: “Angola is rich in both mineral resources like diamonds and underground resources like oil. The country is the second largest oil and gas producing nation in Africa.” https://www.commercialdroneprofessional.com/high-demand-from-oil-and-gas-industry-prompts-new-terra-drone-branch/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-301437-Commercial+Drone+Professional+DNA+-+2019-05-14

15May19

Cape: Aerial Telepresence Changes the Definitions of Pilot and Commander for Drones

Miriam McNabb May 15, 2019



Aerial telepresence is a relatively new concept – and [Cape](#) Aerial Telepresence™ is the **first** platform in use for commercial drones. The idea is a game changer for drone missions, changing the definition of “pilot” and “commander” for drones.



UAS and SmallSat Weekly News

When a call comes in, law enforcement officers approach the scene in their vehicles as the drone is launched from the roof of the building. (Typically, the drone arrives well in advance of the ground vehicles.) The teleoperator in the command center manipulates the drone to get the exact data that the officers need to best manage the situation – live streaming it to officers in their vehicles and allowing the law enforcement commander in charge to plan an approach for maximum safety and results. A licensed drone pilot is on the ground ensuring the drone's safe operation.

The program has proven the safety and viability of the platform. "Since launching its **Drone as a First Response** program in October 2018, drones equipped with the Cape Aerial Telepresence platform have conducted more than 312 flights, accounting for more than 75 hours of flight time without incident, and have contributed to 18 arrests. <https://dronelife.com/2019/05/15/cape-aerial-telepresence-changes-the-definitions-of-pilot-and-commander-for-drones/>

FAA UAS Symposium, Next Month in Baltimore Miriam McNabb May 15, 2019



The FAA and AUVSI will co-host this year's [FAA UAS Symposium](#) on June 3-5 at The Baltimore Convention Center.

With the tag line: "The FAA is getting down to business. We're not waiting for what's next, we're creating it," the agency is making it clear that they are working to get out in front of new developments in the industry.

This year's program includes sessions on getting approvals for advanced operations, with topics like "Understanding Your Options and Getting Your Operations Started," "Getting Approval to Fly Beyond Visual Line-of-Sight," and "Get Advice From the Approvers." There are **thought leadership** sessions on topics like drone delivery, drone safety around airports, and what the FAA Reauthorization Plan will mean for the drone industry.

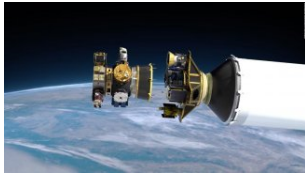
New this year is a parallel program of "How To" classes. Some are geared towards newer pilots: with courses prosaically titled "How to be a Responsible Pilot" and "How to Stay Out of Trouble," the focus is clear – understand the regulations, and follow them. Others are designed for helping commercial pilots navigate waivers, LAANC, and drone complaints. Most significantly, the FAA Symposium offers pilots and stakeholders the opportunity to meet with



UAS and SmallSat Weekly News

FAA officials face to face: to network, exchange ideas, and address questions. It's worth the trip if you can make it – registration is [open here](https://dronelife.com/2019/05/15/faa-uas-symposium-next-month-in-baltimore/). <https://dronelife.com/2019/05/15/faa-uas-symposium-next-month-in-baltimore/>

Next SpaceX Launch To Carry 60 Satellites MARC COOK



SpaceX head Elon Musk tweeted out a photo of 60 Starlink satellites packed into the nose of a Falcon rocket.

SpaceX is slated to launch the rocket Wednesday, but the photo previews Musk's desire to provide internet access around the world where ground-based infrastructure is impossible to too expensive. Musk says that at least another six launches of 60 satellites each will be needed for "minor" internet service. SpaceX hopes to have the internet service starting next year, while it continues to launch bundles of satellites through 2024. SpaceX has asked for (and received) permission to fly almost 1600 of those satellites as close as 340 miles up.

Starlink could eventually offer internet service to any location on the planet with a fleet of **12,000 satellites**. To ensure that non-functional satellites are removed from their orbits, they are designed to burn up completely as they re-enter the atmosphere.

<http://flash.avweb.com/eletter/4337-full.html?ET=avweb:e4337:2565185a:&st=email#232786>

16May19

Electric 'flying taxi' prototype unveiled by German start-up Gwyn Topham 16 May 2019

A new "flying taxi" has been unveiled by German start-up Lilium, which claims the vertical take-off craft could be the basis for an on-demand air service within six years. The electric jet-powered five-seater aircraft is designed to **travel up to 300km**, a journey that would take it an hour at top speed. A brief, remote-controlled test hover in Munich – was a "huge step".



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The firm, which has attracted more than **€100m** in investment since its founding in 2015, has set a target of offering Uber-style, [app-based air taxis](#) in multiple cities by **2025**. The latest iteration, with room for a pilot and four passengers, will be the template for Lilium's mass production model. With sufficient economy of scale, Lilium believes fares would be around **\$70** per head for a cross-city hop from, for example, **JFK airport to Manhattan**.



Lilium's founders, left to right, Sebastian Born, Patrick Nathen, Daniel Wiegand and Matthias Meiner

According to Lilium, the relatively simple design, beyond the **36 electric jet engines** needed for vertical take-off and landing, make it more safe and affordable than other planes. Once in the air, the power needed in cruise is little more than that of an electric car. The fixed wing design gives a longer range than competitors with drone-based aircraft, which consume much more energy keeping airborne.

<https://www.theguardian.com/science/2019/may/16/electric-flying-taxi-prototype-unveiled-by-german-start-up>

Drone pilot charged with violating secure airspace over two NFL games May 15, 2019 Alex Johnson and Andrew Blankstein



Tracy Michael Mapes, 56, of North Highlands, in Sacramento County, was charged Tuesday with violating temporary flight restrictions in national defense airspace at two National Football League games on Nov. 26, 2017.

According to an affidavit attached to a complaint filed in U.S. District Court in San Jose, Mapes flew a drone that dropped the flyers on spectators at a game between the San Francisco 49ers and the Seattle Seahawks at Levi's Stadium in Santa Clara. He then drove to Oakland and dropped flyers over Oakland-Alameda County Stadium, where the Oakland Raiders were playing the Denver Broncos.



An example of a flyer that was dropped over Oakland-Alameda County Coliseum

Mapes was arrested after Alameda County sheriff's deputies **tracked the drone** for a half-mile and found him, wearing a



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retrofitted helmet, piloting the aircraft with an iPad which included still images taken from video recorded by the drone. <https://www.nbcnews.com/news/crime-courts/drone-pilot-charged-violating-secure-airspace-over-two-nfl-games-n1006241>

K-State Hosting Midwest Big Data Hub with Focus on UAS for Digital

Agriculture Betsy Lillian May 14, 2019



Kansas State University's Polytechnic Campus in Salina will host the third annual [Midwest Big Data Hub](#) "Digital Agriculture Spoke: All-Hands Meeting" on Wednesday, Aug. 21.

The meeting serves as the **culmination** of a National Science Foundation project whose core focus is fostering collaboration, communication and education between academics, industry and end-users to promote work in unmanned aircraft systems, big data, genomics and phenomics. The project aims to improve food production, automate the big data lifecycle in agriculture, and reinforce remote sensing standards and conventions in the agriculture industry.

The meeting is the **finale of the three-year project** to discuss and reflect on accomplishments and start building the conversation for future work to develop what was learned.

https://unmanned-aerial.com/k-state-hosting-midwest-big-data-hub-with-focus-on-uas-for-digital-agriculture?utm_medium=email&utm_source=LNH+05-16-2019&utm_campaign=UAO+Latest+News+Headlines

WATCH: Everdrone demos First Responder UAS APPLICATION BUSINESS EMERGENCY SERVICES EUROPE NEWS ALEX DOUGLAS MAY 16, 2019



Detailing what it can do on social media a few days ago, Everdrone described how the system offers ADS-B support, iPad integration and a full **360 degree sense and avoid feature**.

It went on to say the First Responder UAS has been made possible via its software for autonomous drones.



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Part of this includes systems for visual navigation and obstacle avoidance powered by Intel RealSense. Watch the footage [here](https://www.commercialdroneprofessional.com/watch-everdrone-demos-first-responder-uas/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-301829-Commercial+Drone+Professional+DNA+-+2019-05-16): https://www.commercialdroneprofessional.com/watch-everdrone-demos-first-responder-uas/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-301829-Commercial+Drone+Professional+DNA+-+2019-05-16

TORUS: Atmospheric Scientists Using Drones to Understand Tornadoes Malek

Murison May 16, 2019

The TORUS research project ([Targeted Observation by Radars and UAS of Supercells](#)), led by the University of Nebraska-Lincoln, will be carried out by over fifty scientists and students. They will be deploying a broad suite of cutting-edge instrumentation into the US Great Plains during the 2019 and 2020 storm seasons, including four fixed-wing drones.



TORUS will use data collected by the drones to improve the conceptual model of supercell thunderstorms and the formation of destructive tornadoes. The **\$2.4-million** project will send the drones directly into the storms to gather data at an altitude of nearly 800 metres.

Over the course of the storm seasons in 2019 and 2020, twelve teams will chase supercell thunderstorms in the 950,000-square-kilometre region that stretches from North Dakota to Texas, and from Iowa to Wyoming and Colorado. The National Science Foundation is funding the majority of the project.

It will use drones alongside three mobile radars, eight mobile mesonets (trucks mounted with meteorological instrumentation), a mobile [LIDAR](#), three mobile sounding systems (balloon-borne sensor packages), and an [NOAA](#) P3 manned aircraft to uncover the composition of severe storms. The aim is to gather enough data to better understand supercell thunderstorm behavior and improve supercell and tornado forecasts in the process.

<https://dronelife.com/2019/05/16/torus-atmospheric-scientists-using-drones-to-understand-tornadoes/>

17May19

NASA to show off drone traffic management testing to media APPLICATION BUSINESS

NEWS UNITED STATES ALEX DOUGLAS MAY 17, 2019



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To show off the UTM system, NASA is inviting the media to learn more and watch drone demonstration on **May 21 in Reno, Nevada**.

The agency's research into drone traffic management focuses on operations within a city, at an altitude of 200 feet or higher, and the unique challenges presented when flying in an urban area. As part of the demonstration event, media will have the opportunity to interview NASA leadership and researchers.



The move shows progression is NASA's work which since 2015 has worked to create a research platform that can manage drone traffic safely. Through a long-standing partnership with the Federal Aviation Administration and help from many industry partners, NASA says its goal is to understand how a nationwide system for drones can safely integrate remotely-piloted aircraft into low-altitude airspace. Read the full story [here](https://www.commercialdroneprofessional.com/nasa-to-show-off-drone-traffic-management-testing-to-media%E2%BB%BF/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-301960-Commercial+Drone+Professional+DNA+-+2019-05-17): https://www.commercialdroneprofessional.com/nasa-to-show-off-drone-traffic-management-testing-to-media%E2%BB%BF/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-301960-Commercial+Drone+Professional+DNA+-+2019-05-17