



## UAS and SmallSat Weekly News

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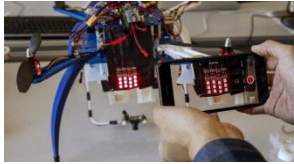
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### Ford Announces Bold Plans for Drone Future March 15, 2018 Audrey Zhang



Known internationally for its vehicles and the founder's concept of the assembly line, Ford Motor Company is now turning its eyes to the fast growing drone industry to see if it can't get in on the future of transportation on the ground level.

In a **surprising move**, the automaker has detailed plans to develop a platform for autonomous drone movement and testing.



A [blog post](#) from Ford Research and Advanced Engineering's John Luo and Adi Singh detailed how the company had become inspired by the rise of UAVs. "As researchers, we were intrigued by the relationship between our vehicles and drones and how we might serve our customers in the future, so we embarked on a mission to find out more," the two researchers wrote.

Ford's UAV systems development group created a platform that allows for testing of applications involving drones and automobiles. Best of all, it will be an **open-source platform** that will allow independent teams to do their own work on it.

"As drone adoption accelerates, we think many of our customers will want to use these devices as part of their lifestyle, whether to pursue hobbies or even as a tool for their business—no different than how they use an F-150 or Transit on a job site." The addition of Ford's commercial transportation expertise with the disruptive opportunities offered by drone technology should prove a potent combination indeed. <https://www.wetalkuav.com/ford-announces-bold-plans-drone-future/>

### US Military Plans to Make VR and Drones Standard Part of Troop Equipment and Training March 14, 2018 Feilidh Dwyer



Virtual reality and drone technology are set to play a much greater role in the training and equipping of US military personnel. Although drones have become an integral feature of modern military hardware, the average ground-based troop has limited access to drones for scouting purposes.



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That's where the PD-100 drone comes in. Capable of a maximum range of a mile-and-a-half and weighing less than an ounce (18.5 grams). This drone has a tiny front-facing camera, **is virtually silent** (making it very difficult for enemy troops to see), can fly for 25 minutes on a single charge and only takes several minutes to set up and deploy. Such devices are so cheap that troops could treat them as a form of munition rather than indispensable tech.

<https://www.wetalkuav.com/us-military-will-train-new-recruits-using-vr-drones/>

### US Dept. of Interior Expands Capabilities With 50 Fixed-Wing VTOL UAS March 15, 2018



The U.S. Department of the Interior will soon have the use of up to 50 Vertical Take-Off and Landing (VTOL) fixed wing unmanned aircraft systems (UAS). A contract was awarded to Birdseyeview Aerobotics of Andover, New Hampshire to produce and train on the new UAS.

"These new fixed-wing aircraft are another weapon in our arsenal as we remain committed to **preventing the spread of catastrophic wildfires**," said U.S. Secretary of the Interior Ryan Zinke.

The aircraft weigh less than 10 pounds and are capable of carrying a variety of modular sensors. In addition to being able to take off and land vertically in confined spaces, the new aircraft have a service ceiling of 12,000 feet and are able to operate in winds up to 25 knots. With an approximate wingspan of five feet, they can be quickly launched from spaces with a limited area, such as a boat. [http://uasweekly.com/2018/03/15/us-dept-of-interior-expands-capabilities-with-50-fixed-wing-vtol-uas/?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=uasweekly\\_newsletter\\_2018\\_03\\_15&utm\\_term=2018-03-15](http://uasweekly.com/2018/03/15/us-dept-of-interior-expands-capabilities-with-50-fixed-wing-vtol-uas/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_03_15&utm_term=2018-03-15)

### What do You Need to Know About Anti-Drone and Counter Drone Technology?

João Antunes March 13, 2018



One of the reasons counter drone/anti-drone technology [has become such a big issue in 2018](#) relates to scenarios where drones could be used to threaten the privacy of people, protected places, large events or critical infrastructure. What kinds of options are available to organizations that want to get a better sense of the threats that are in their airspace and take action around them?



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These are the sorts of questions [Dedrone](#) has been designed to answer. The San-Francisco-based company uses hardware and software to create an awareness of the airspace, and allows users to **take countermeasures**.

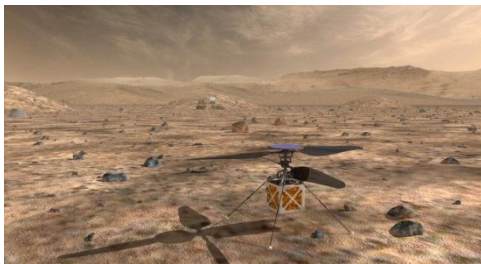


In late 2017, Dedrone launched the second edition of the [Airspace Security Insights Report](#) which discusses various security issues drones cause in different situations: Disaster Responders, Airports, Correctional Facilities, Stadiums, Arenas and Public Events, Enterprises and Data Centers and Private Individuals. Many of the [predictions for 2018](#) that Dedrone laid out were focused on where and how these threats will be taken to the next level.

[https://www.expouav.com/news/latest/need-know-anti-drone-counter-drone-technology/?utm\\_source=informz&utm\\_medium=email&utm\\_campaign=newsletter&utm\\_content=newsletter](https://www.expouav.com/news/latest/need-know-anti-drone-counter-drone-technology/?utm_source=informz&utm_medium=email&utm_campaign=newsletter&utm_content=newsletter)

## NASA to decide soon whether flying drone will launch with Mars 2020 rover

March 15, 2018 Stephen Clark



Testing of a lightweight robotic helicopter designed to fly in the alien atmosphere of Mars has produced encouraging results in recent months, and NASA officials expect to decide soon whether the aerial drone will accompany the agency's next rover to the red planet set for liftoff in 2020.

Jim Watzin, director of NASA's robotic Mars exploration program at the agency's headquarters, said last month that an engineering model of the helicopter **has completed 86 minutes of flying time in a test chamber** configured to simulate the Martian atmosphere.

The helicopter weighs about 4 pounds, or 1.8 kilograms, on Earth. An internal battery is capable of powering the drone for flights lasting between 90 seconds and 2 minutes — enough time to travel up to 1,000 feet, or 300 meters — and solar panels can recharge the battery for subsequent flights. <https://spaceflightnow.com/2018/03/15/nasa-to-decide-soon-whether-flying-drone-will-launch-with-mars-2020-rover/>



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### Walmart Wants To Revolutionize Farming With A New Generation Of Drones March 18, 2018 [Feilidh Dwyer](#)



American retail giant Walmart is looking to increase their role in the food-growing business by investing in new drone technology to monitor and take care of crops.

[Reuters reports](#) that **Walmart filed six patents** with the US Patents and Trademark Office in 2017, all of which pertain to fertilizing or crop-dusting drones. The proposed drones will pollinate (think fake bees), distribute fertilizers precisely and monitor the health of the crops – finding pests and applying pesticides at targeted spots rather than spraying the entire crop.

Grocery sales makes up 56 percent of Walmart's overall revenue. Their investment in drone technology may be emblematic of a general shift towards automation in the agricultural industry. <https://www.wetalkuav.com/walmart-wants-to-revolutionize-farming-drones/>

### Aerones makes really big drones for cleaning turbines and saving lives Brian Heater@bheater



Most of the jobs we've seen drones perform are focused on the camera — from wildlife surveying to monitoring cracks on power plant smokestack.

[Aerones](#) is working on something much larger. The Y Combinator-backed startup is building giant drones with **28 motors and 16 batteries**, capable of lifting up to **400 pounds**. That kind of payload means the drones can actually perform a broad range of potential tasks. The company was bootstrapped with its founders money, but has since raised around half a million euros. **Founded in Latvia**, Aerones has **relocated to Mountain View** in search of seed money, after signing on with Y Combinator.

The drone looks like four quadcopters tethered together — using this configuration, the craft can put out fires, perform search and rescue missions and clean the sides of tall buildings. After over a year of showing off the product's sheer brute strength in a series of videos, the drones





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are ready to be put to real world use. <https://techcrunch.com/2018/03/17/aerones-makes-really-big-drones-for-cleaning-turbines-and-saving-lives/>

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### **China to offer commercial recoverable satellites in next two years** SCIENCE NEWS

MARCH 17, 2018 Reuters Staff

SHANGHAI (Reuters) - China plans to begin offering recoverable satellites to commercial users between 2019 and 2020, the official state news agency Xinhua reported.

The country **has successfully brought back more than 20 satellites from space since 1975** and is confident its technology is highly reliable, said Zhang Hongtai, president of the China Academy of Space Technology, a satellite and spacecraft maker. "We plan to upgrade this technology to satisfy the needs of commercial users."

The satellites allow scientists to send experiments into space on unmanned missions and recover the results. China has used these satellites in the past to send seeds into space, developing new types of plants from seeds that have been exposed to zero gravity and cosmic radiation. [www.reuters.com/article/us-china-space/china-to-offer-commercial-recoverable-satellites-in-next-two-years-xinhua-idUSKCN1GU01Z](http://www.reuters.com/article/us-china-space/china-to-offer-commercial-recoverable-satellites-in-next-two-years-xinhua-idUSKCN1GU01Z)

### **FAA Projects Fourfold Increase in Commercial Drones by 2022** *Andy Pasztor* March 18, 2018

#### ***Agency predicts drone pilots will far exceed private manned aviators in a few years***



U.S. regulators expect the number of commercial drones and people flying them to quadruple over the next five years, the latest positive indicator for the industry.

Updated Federal Aviation Administration numbers released last week project about 450,000 such unmanned aerial vehicles will be operating in domestic airspace in 2022, versus today's roughly 110,000. The agency also expects the ranks of commercial-drone pilots to climb past 300,000 over the same period, up from roughly 70,000 now.

The FAA document sketches out growth possibilities as new drone designs "become operationally more efficient and safe, battery life expands and regulatory constraints are reduced." Package delivery and other new business models, according to the agency, represent an "enormous potential" that could boost cumulative annual growth rates close to 50%.



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Beyond the impressive outlook for commercial drones, proponents already are enjoying an unprecedented surge in attention and political influence across Washington. "We're committed to helping our greatest innovators develop, test and deploy their technologies here in the U.S.," Michael Kratsios, the White House's deputy chief technology adviser, told a federal-industry drone conference in Baltimore earlier this month. The U.S. **"cannot allow the promise of tomorrow to be hamstrung by the bureaucracy of the past."** <https://www.wsj.com/articles/faa-projects-fourfold-increase-in-commercial-drones-by-2022-1521407110>

### **Drone Delivery Canada conducts first test flights in the US** Haye Kesteloo Mar. 19th 2018



Drone Delivery Canada (DDC) completes first ever test flights in the USA. The flights took place at the Griffiss International Airport located in Rome, New York on March 5th, 2018.

In a [press release](#), Paul Di Benedetto, Chief Technology Officer of Drone Delivery Canada said: *"Testing at Griffiss was a natural extension for continued progress with our platform in a **BVLOS** non-segregated airspace environment. An active runway with large aircraft, helicopters, and general aviation aircraft is the latest advancement to our operations team **airspace integration** efforts."*

Griffiss International Airport is one of the seven FAA-designated UAS Test Sites that provide Beyond Visual Line of Sight (BVOLS) Research and Development capabilities as well as long-distance testing corridors with active airspace.

DDC is one of many players who is working on **making drone deliveries a reality** sooner rather than later. Other companies that are getting ready to deliver packages by drone are Amazon, Google, and Boeing. Zipline, a San Francisco-based company, has been operating drone deliveries successfully for some time in Rwanda. <https://dronedj.com/2018/03/19/drone-delivery-canada-conducts-first-test-flights-in-the-us/>

### **Upcoming North Carolina drone workshop shows growing interest by government** Colin Wood MARCH 16, 2018 5:13 PM

As the federal government works to put drones in the sky for everyday use by industry, state governments like North Carolina are preparing internally.



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The North Carolina Department of Transportation announced this week that it will hold a **free workshop on April 19** to share information, projects and new information from vendors with government agencies.

The state's upcoming workshop is reflection of an increased interest by government in the potential of the emerging technology. In September, [NCDOT released study results](#) showing that drones are four times faster at scanning car crash scenes than traditional methods.

The workshop is expected to include a session hosted by the FAA, NCDOT and law enforcement officials on the latest regulations, presentations by companies about their work and latest capabilities, and agencies will also share the details of how drones are advancing their work.

The department's registration page [can be found here](https://statescoop.com/drones-north-carolina-workshop-ncdot). <https://statescoop.com/drones-north-carolina-workshop-ncdot>

## Swedish, US researchers model urban airspace capacity limits for drone operators

March 15, 2018 Philip Butterworth-Hayes UAS traffic management news



*Image: Noise footprint over Norrköping municipality, overlaid with the population density grid*

Understanding how multiple drone operations impact urban airspace capacity levels is a key objective of research from Swedish Air Navigation Service provider LFV, the Department of Science and Technology of [Linköping University \(LiU\)](#) and the [University of California, Berkeley](#).

The UTMOK project seeks to understand the role of *volume*, *noise* and *spectrum* considerations in airspace demand/capacity balancing. Researchers are developing methods to estimate capacity thresholds for drone traffic in very low level (VLL) uncontrolled urban airspace, and apply their algorithms to Norrköping municipality in Sweden and Bay Area in the US.

UTMOK researchers are testing higher autonomy and automation levels in UTM by suggesting *distributed* traffic management schemes.

In an spin-off project, LFV and LiU will pave the way for establishing performance based navigation (PBN) in UTM by designing algorithms for *smart geo-fencing* (maintaining and





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updating efficient representations for the airspace constraints imposed by owners, users, authorities, et al) and *deciding locations of vertiports/vertistops* for drone taxis. These identify optimal locations where higher-flight-level VTOL traffic may cut through the lower layers while minimally disrupting traffic in the layers.

Project reference groups include local regulators and drone manufacturers, as well as air traffic controllers. <http://www.unmannedairspace.info/uncategorized/swedish-us-researchers-model-urban-airspace-capacity-limits-drone-operators/>

**Airways New Zealand integrating air taxis into its UTM programme** March 13, 2018 Philip Butterworth-Hayes UAS traffic management news

The trial of the AirMap drone traffic management platform currently underway in Canterbury and Queenstown is the first step in this development. AirMap allows drone pilots to plan their flights, seek authorisations and get information about the areas they're operating in. In the next phase, Airways is planning to develop tracking tools that allow UAVs to be accurately monitored once they are beyond the pilot's line of sight.



**Image – the Cora air taxi**

Airways also intends to test the capability of New Zealand's existing telecommunications network to track the likes of Zephyr Airworks' autonomous vehicle Cora and UAVs in uncontrolled airspace and enable better telemetry for drone pilots.

Airways has had significant experience working with new entrants to New Zealand's airspace. Over the past four years the air traffic controller has developed an advanced launch services programme, enabling more than 120 stratospheric balloon launches for organisations including NASA and Google and has facilitated RocketLab's ambitious rocket launch programme. <http://www.unmannedairspace.info/uncategorized/airways-new-zealand-integrating-air-taxis-utm-programme/>

**Boeing's HorizonX invests in counter-UAS company Fortem Technologies** March 19, 2018 Philip Butterworth-Hayes Counter-UAS systems and policies

Boeing's HorizonX Ventures has announced its investment in Fortem Technologies, Inc., a Salt Lake City, Utah-based company developing advanced radar systems for unmanned and manned aircraft.



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Fortem Technologies offers airspace awareness solutions using low size, weight and power radar to ensure safe operations of unmanned aerial vehicles.



Founded in May 2016, Fortem has developed a suite of radar systems and radar-enabled product solutions to help unmanned aircraft and pilots safely operate in an increasingly crowded airspace. Its TrueView radar systems **enable autonomous aircraft** to perform various logistics applications, including cargo transport, package delivery and large infrastructure inspections.

“With support from Boeing and others, Fortem can scale more quickly to support continuous improvements in airspace safety,” said Timothy Bean, CEO of Fortem Technologies. “We look forward to continue working with Boeing as they develop autonomous air vehicles.”

<http://www.unmannedairspace.info/counter-uas-systems-and-policies/boeings-horizonx-invests-counter-uas-company-fortem-technologies/>

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### **FAA Aerospace Forecast Shows Opportunities Abound for Commercial UAS** Betsy

Lillian March 19, 2018



In its latest aerospace forecast, the Federal Aviation Administration (FAA) is **predicting “phenomenal growth”** in the unmanned aircraft systems (UAS) sector.

According to the FAA’s aerospace forecast for fiscal years 2018-2038, the small model (hobbyist) UAS fleet is forecast to more than double in size from 1.1 million vehicles in 2017 to 2.4 million units in 2022. The average annual growth rate over the five-year forecast period is 16.9%.

The small non-model (commercial) UAS fleet is forecast to grow from 110,604 in 2017 to 451,800 in 2022. The average annual growth rate over the five-year forecast period is 32.5%.

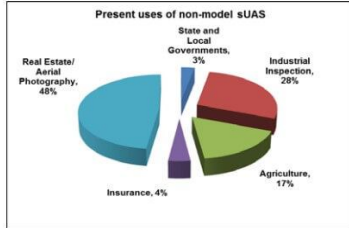
The report says the commercial sector is divided into two types of drones: consumer-grade, averaging \$2,500 per unit, and professional-grade, averaging \$25,000 per unit.

“Currently, the consumer-grade dominates the non-model sector, with a market share approaching 98 percent,” the report says. “However, as the sector matures and the industry begins to consolidate, the share of consumer-grade non-model aircraft is likely to decline but remain dominant.



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As for commercial uses, the FAA says, “A review of market analyses and industry information reveals their present uses (following chart) have not changed much from last year”:



In addition, the FAA forecasts that the number of remote pilots will increase from 73,673 in 2017 to 301,000 in 2022. The average annual growth rate over the five-year forecast period is 32.4%.

“Starting from the base of 73,673 RPCs in 2017, **non-model activities may require over 300,000 new remote pilots in five years**, providing tremendous opportunities for growth in employment associated with commercial activities of the UAS.” The full report can be found [here](#).

[https://unmanned-aerial.com/faa-aerospace-forecast-shows-opportunities-abound-for-commercial-uas?utm\\_medium=email&utm\\_source=LNH+03-20-2018&utm\\_campaign=UAO+Latest+News+Headlines](https://unmanned-aerial.com/faa-aerospace-forecast-shows-opportunities-abound-for-commercial-uas?utm_medium=email&utm_source=LNH+03-20-2018&utm_campaign=UAO+Latest+News+Headlines)

## Oceans Unmanned Launches Drone Initiative for Hawaii Whale

**Conservation** Betsy Lillian March 19, 2018



Oceans Unmanned Inc. has [announced](#) a new initiative using drones for large-whale entanglement response efforts off of Maui, Hawaii.

The freeFLY initiative was launched in partnership with the National Oceanic and Atmospheric Administration’s (NOAA) Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS), along with additional support from DJI and DARTdrones.

The network’s goals are to safely free endangered humpback whales and other marine animals from life-threatening entanglements while also gathering valuable information to reduce entanglement threats in the future.

The addition of aerial imagery from on-scene, vessel-launched drones will provide responders improved situational awareness and increased safety for both the animal and responder, says Ocean Unmanned. “Cutting free a 45-foot, 40-ton free-swimming animal is **not an easy task**; it can be dangerous. Drones may likely play an important role, as they are a valuable tool toward reducing the risks involved in this type of effort,” explains Ed Lyman, NOAA’s large-whale entanglement response coordinator. <https://unmanned-aerial.com/oceans-unmanned-launches->

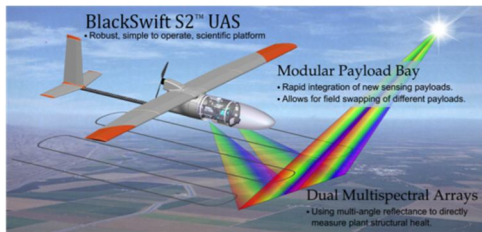


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[drone-initiative-for-hawaii-whale-conservation?utm\\_medium=email&utm\\_source=LNH+03-20-2018&utm\\_campaign=UAO+Latest+News+Headlines](https://www.axcelinnovation.com/news/drone-initiative-for-hawaii-whale-conservation?utm_medium=email&utm_source=LNH+03-20-2018&utm_campaign=UAO+Latest+News+Headlines)

### Black Swift and NASA to Develop Next-Gen Sensors for Agricultural Drones 20

Mar 2018 | Caroline Rees



[Black Swift Technologies](#) (BST) has announced the expansion of a pathfinder mission with NASA’s Goddard Space Flight Center to develop enhanced multi-angular remote sensing techniques using small Unmanned Aircraft Systems (sUAS) for **vegetation health and growth monitoring**.

Drone platforms can effectively and efficiently monitor crop health and growth monitoring through the use of a narrow spectral band used to derive vegetation photosynthesis related indices by tracking seasonally changing pigment ratios and photosynthetic rates not capable with established greenness indices.

The MALIBU (Multi AngLe Imaging Bidirectional reflectance distribution function small-UAS) pathfinder mission uses Black Swift’s advanced small Unmanned Aircraft System, the Black Swift S2™, to capture multi-angle reflectance measurements for land surface studies using multispectral imagers, oriented at different viewing angles. MALIBU’s primary subsystem – a multi-angular sensor array based on the Tetracam Mini-Multiple Camera Array’s imaging system – generates science-quality reference data sets suitable for calibration/validation activities supporting NASA’s Earth Science missions.

[http://www.unmannedsystemstechnology.com/2018/03/black-swift-nasa-develop-next-gen-sensors-agricultural-drones/?utm\\_source=Unmanned+Systems+Technology+Newsletter&utm\\_campaign=3d44d436f8-eBrief\\_2018\\_Mar\\_20&utm\\_medium=email&utm\\_term=0\\_6fc3c01e8d-3d44d436f8-119747501](http://www.unmannedsystemstechnology.com/2018/03/black-swift-nasa-develop-next-gen-sensors-agricultural-drones/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=3d44d436f8-eBrief_2018_Mar_20&utm_medium=email&utm_term=0_6fc3c01e8d-3d44d436f8-119747501)

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### FAA approves first responders to fly drones at Dallas – Fort Worth International Airport effective immediately Haye Kesteloo - Mar. 19th 2018



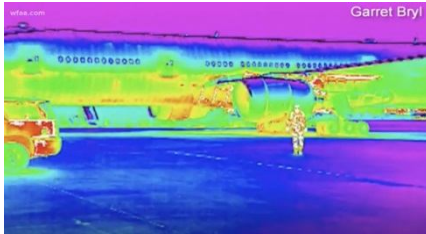
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The [Federal Aviation Administration \(FAA\)](#) just approved first responders at the fourth busiest airport in the world, Dallas/Fort Worth International Airport to fly their drones directly over the airfield.

FAA granted special approval to the first responders to operate drones a DFW Airport both inside and outside the terminals over the airfield.

Garret Bryl of the North Texas USA Response Team put a video together that was shown as a proof of concept. The short film with examples of how drone with infrared cameras can show hot spots on a running aircraft as well as the zoom capabilities of modern drone cameras was shown to airport operations staff.



Drones are not only useful outside on the airfield They can be even used inside the terminal to quickly scan a building for any possible bomb threats or suspicious packages. Bryl continued to say:

Late in February, the FAA approved drone operations by the DFW Police and Fire below 50 feet with one specific condition, the drone pilot needs to maintain a two-way communication with the control tower. **The first responders have been cleared to start flying their unmanned aerial vehicles immediately.**

For everybody else with a drone, stay away from any airports when flying your drone. Hobbyists must remain five miles away from any airport, airstrip or heliport.

<https://dronedj.com/2018/03/19/faa-first-responders-drones-dallas-fort-worth-international-airport/>

**WRPS to use drones in collision and missing person investigations** Jackie Sharkey, CBC News Posted: Mar 19, 2018 ***The force estimates using a drone will result in an annual cost savings of nearly \$80,000***

Waterloo Regional Police are experimenting with using a drone to help in missing person searches and car crash investigations.



which was \$83,699.

The drone, also called an unmanned aerial vehicle, will cost \$94,123. That includes training through the Waterloo Wellington Flight Centre, insurance, a one-year warranty and the actual cost of the drone —





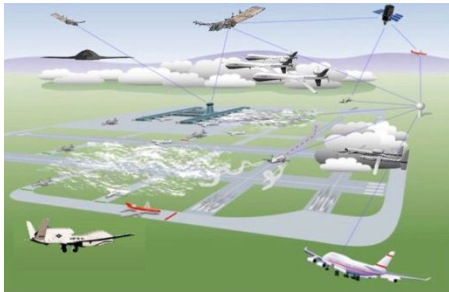
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"It is estimated that the use of an UAV will result in **an annual cost savings of \$79,050**, (i.e. collision scene surveying: \$7,000; collision aerial photography: \$6,600; missing person searches: \$65,450)," according to Police Services Board minutes. The savings will come from reduced people-hours. Currently, officers take two to four hours to survey a collision scene. Using a drone, the same work would take 15 to 50 minutes.

For missing person cases, drones are faster and more efficient than officers on the ground searching large open areas, can be used to search in areas inaccessible to officers on foot and are much cheaper than using a helicopter.

It will not be used for surveillance without "judicial authorization and completed Privacy Impact Assessment." <http://www.cbc.ca/news/canada/kitchener-waterloo/wrps-waterloo-police-drone-unmanned-aerial-vehicle-1.4582447>

### **A Single European Sky Will Include Drones** Nick Zazulia | March 20, 2018



SESAR JU, the group tasked by the European Commission and Eurocontrol with guiding Europe toward integrated free, open skies throughout the continent over the coming years, has released a subset of its master plan focusing on the integration of drones into Europe's airspace.

**Drones will be part of Europe's future**, per SESAR JU Executive Director Florian Guillermet. It's his first sentence.

Here are some highlights of the plan's recommendations:

- Drone integration relies on development of an automated set of services to interface with air traffic control and enable routine missions.
- Military will also be integrated into the wider traffic situation.
- There will be significantly increased UAS activity at airports, both using the space and performing inspections.
- UAS operating in urban areas will have more stringent requirements, e.g. navigation accuracy and detect-and-avoid capabilities.
- High-altitude flights going above FL 660 airspace will also be integrated; for example, the entry and exit procedures of high-altitude pseudo-satellites providing broadband communications access.



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The plan aims to **integrate all air traffic and all airspace** throughout participating European countries — and ultimately to expand from there — in the coming years, with specific goals and benchmarks for 2020. <http://www.aviationtoday.com/2018/03/20/single-european-sky-will-include-drones/>

### **Drone Delivery Canada Commences Development of The Condor – 400Lb Cargo Delivery Drone – Next Generation Heavy Lifting Drone** Toronto, Ontario—March 21, 2018



Drone Delivery Canada is pleased to announce that it has commenced development of its newest cargo delivery drone, 'The Condor,' with a lifting capability estimated at 400 pounds of payload.

The Condor cargo delivery drone is being engineered to provide payload capacities of up to 400lbs and designed to fly approximately 150km. The Condor boasts a considerably larger payload compartment compared to both the Raven and Sparrow. The Sparrow obtained its Declaration of Compliance accepted by Transport Canada in December 2017. The Condor looks to accept **pallet size payload shipments**, ideal for transporting bulk cargo, both in Canada and abroad. <http://www.dronedeliverycanada.com/news/press-releases/drone-delivery-canada-commences-development-of-the-condor-400lbs-cargo-delivery-drone-next-generation-heavy-lifting-drone/>

### **Israeli Company APG Unveils Quantum Leap in Tactical UAS The Peres** March 20, 2018 News



The Peres, developed by the Israeli UAS designer and manufacturer APG, can take off and land in a 16 sq. ft. area. It is among the first systems whose four engines enable it to **transition from horizontal to vertical flight**.

Tactical UASs are the ideal solution for a variety of military missions, civilian applications, and commercial



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uses, such as ship-based take-off and landing, offshore drilling-rig access, ground-force logistical support, package delivery, and precision farming.

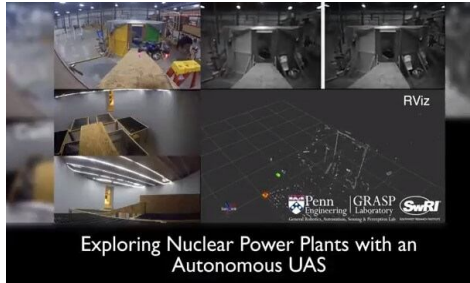
The UAS has a wingspan of more than seven feet and a maximum take-off weight of 93 lb. It has an endurance of up to **eight hours** with a payload of 7¼ lb., a 93-mile mission radius, and a cruising speed of 55 knots at an altitude of 8,000 feet with a service ceiling of 15,000 feet.

[http://uasweekly.com/2018/03/20/israeli-company-apg-unveils-quantum-leap-in-tactical-uas-the-peres/?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=uasweekly\\_newsletter\\_2018\\_03\\_21&utm\\_term=2018-03-21](http://uasweekly.com/2018/03/20/israeli-company-apg-unveils-quantum-leap-in-tactical-uas-the-peres/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_03_21&utm_term=2018-03-21)

**22Mar18**

### Engineers Developing Drones to Inspect Fukushima Daiichi Nuclear

**Disaster** Betsy Lillian March 21, 2018



A team led by San Antonio-based Southwest Research Institute (SwRI) is developing autonomous unmanned aircraft system (UAS) technology capable of flying into the containment vessels of damaged units at Japan's Fukushima Daiichi nuclear power station and assessing conditions.

Tokyo Electric Power Co. Holdings Inc. contracted SwRI to explore the use of drones within the containment. Working with the General Robotics, Automation, Sensing and Perception Lab at the University of Pennsylvania (Penn) School of Engineering and Applied Science, SwRI engineers are helping adapt small UAS to autonomously operate within the containment.

"This is a formidable challenge," says project manager Dr. Monica Garcia, a senior research engineer in SwRI's intelligent systems division. "The conditions inside the containment at Fukushima Daiichi are quite possibly the most challenging environment that the SwRI-Penn team has had to address. We will be pushing the envelope in terms of the technology."

[https://unmanned-aerial.com/engineers-developing-drones-to-inspect-fukushima-daiichi-nuclear-disaster?utm\\_medium=email&utm\\_source=LNH+03-22-2018&utm\\_campaign=UAO+Latest+News+Headlines](https://unmanned-aerial.com/engineers-developing-drones-to-inspect-fukushima-daiichi-nuclear-disaster?utm_medium=email&utm_source=LNH+03-22-2018&utm_campaign=UAO+Latest+News+Headlines)



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### **AFRL to experiment with lasers for counter UAS** March 21, 2018 | Rachel Karas

The Air Force Research Laboratory will launch its first experiment to use directed energy to defend bases against small, unmanned aerial systems in October, a service official said Wednesday.

Bill Cooper, director of AFRL's Hybrid Defense of Restricted Airspace (HyDRA) study, said at a March 21 Booz Allen Hamilton conference on laser weapons the Air Force will bring commercial systems to White Sands Missile Range in New Mexico for October's experiment.

*Inside Defense* [reported last year](#) the Air Force wants battle command and sensor systems that quickly detect, track and target single or multiple UAS, as well as systems that identify and classify aircraft while intervening with, defeating or denying their flight using military-operated **high-power microwave and laser weapons**. Cooper told *Inside Defense* the Air Force hopes to buy a directed-energy base defense system in a few years. <https://insidedefense.com/insider/afrl-experiment-lasers-counter-uas>

### **Drones Can Protect Us From Kim's Missiles** Arthur Herman and Stephen C. Meyer March 18, 2018



The Pentagon's Missile Defense Agency recognizes the need for boost-phase intercept capability and is developing a laser-based system. But the agency acknowledges it won't be ready to implement until 2023 at the earliest. A drone-based boost-phase system can be developed within **18 months**—soon enough to make a difference in the current standoff with North Korea.

Here's how the new system would work: Drones would circle above the Sea of Japan at roughly 45,000 feet for shifts of up to 20 hours. Detection systems the Air Force already uses on surveillance drones would pick up North Korean missiles soon after launch. Once operators identify a missile on a dangerous course, new high-speed missile interceptors launched from the drones would destroy the ICBMs during the boost phase—ensuring that any debris would fall onto or near North Korean territory.

Though Congress has [authorized](#) developing a "boost-phase defense" for the Pacific region "at the earliest practicable date," it has yet to appropriate funds for a drone-based system. Lawmakers should close this gap without delay by specifically appropriating discretionary funds from the 2018 supplemental appropriation for missile defense to build such a system. To



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prevent delays, Congress should also extend that funding with another specific appropriation for 2019. The new system would cost only \$100 million to develop—about 1% of the Missile Defense Agency's annual budget. <https://www.wsj.com/articles/drones-can-protect-us-from-kims-missiles-1521397415>

### **Flying taxis may be years away, but the groundwork is accelerating** March 16, 2018

Daisuke Wakabayashi The New York Times



*An illustration of the CityAirbus which carries up to four passengers and can reach a cruising speed of 75 mph.*

SAN FRANCISCO — A growing collection of tech companies, aircraft manufacturers, automakers and investors are betting that fleets of battery-powered aircraft will give rise to air taxi services, perhaps **as soon as the next decade**.

The European aerospace company **Airbus** said last month that it was making an investment in Blade, an aviation startup in New York and forming a partnership to expand Blade's helicopter-hailing service in more cities around the world. Also last month, Dara Khosrowshahi, **Uber's** chief executive, said he expected the ride-hailing company to start flying passengers on a service called Uber Air in five to 10 years.

In November, **Boeing** acquired Aurora Flight Sciences, a company specializing in flight systems for pilotless aircraft, for an undisclosed sum. Before the acquisition, Aurora had been working with Uber to develop a flying taxi. And **Joby Aviation**, a startup in Santa Cruz, California, building its own air taxi, said in February that it had raised **\$100 million** in venture funding from a consortium of investors including the venture-capital arms of **Intel, Toyota Motor and JetBlue Airways**.

Think of a hobbyist's drone, but big enough to fit people. It would, in theory, be welcome in urban environments and affordable to more than well-heeled businesspeople.

<https://www.seattletimes.com/business/technology/flying-taxis-may-be-years-away-but-the-groundwork-is-accelerating/>

### **Chinese Drone Maker DJI Seeking At Least \$500 Million In Pre-IPO** March 22, 2018





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China's SZ DJI Technology Co Ltd, **the world's largest maker of non-military drones**, is in talks with investors for at least \$500 million in funding ahead of a planned stock market debut, people with knowledge of the matter said.

With the funding, set to be obtained via a combination of new equity and debt, the firm would be valued at about \$15 billion, nearly double its valuation in 2015, they said.

The move seeks to capitalize on robust investor enthusiasm for Chinese tech stocks which have pushed valuations to heady levels for many firms, as well as on rapid growth in demand for commercial-use drones.

Shenzhen-based DJI plans to expand into drones for sectors such as agriculture, energy, construction as well as drones for use in infrastructure inspection.

DJI, which commands 70 percent of the global commercial and consumer drone market, wants to finalize the deal in the coming months while a stock market listing either in Hong Kong or mainland China would likely take place next year, they added.

[http://uasweekly.com/2018/03/22/chinese-drone-maker-dji-seeking-at-least-500-million-in-pre-ipo/?utm\\_medium=push\\_notification&utm\\_source=rss&utm\\_campaign=rss\\_pushcrew](http://uasweekly.com/2018/03/22/chinese-drone-maker-dji-seeking-at-least-500-million-in-pre-ipo/?utm_medium=push_notification&utm_source=rss&utm_campaign=rss_pushcrew)

**23Mar18**

**DoD Seeks Underwater-Launched UAV Platform** [Joanna Crews March 23, 2018 Industry News, News](#)



The Defense Department has started to accept solution briefs for an underwater-launched unmanned aerial vehicle with interface and control features similar to those of existing consumer drones.

A [solicitation notice](#) posted on the Defense Innovation Unit Experimental's website says that DoD seeks a platform that can **process full-motion video and operate for more than one hour at a range of up to 30 miles**. The UAV should weigh less than three pounds and employ an AES-256 bit encryption method to secure communications to and from the vehicle.

Interested offerors must describe in their submissions how a UAV platform could launch, orient itself, transition to flight and traverse a water column. Proposals are due April 2.

<http://blog.executivebiz.com/2018/03/dod-seeks-underwater-launched-uav-platform/>



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### **Amazon is issued patent for delivery drones that can react to screaming voices, flailing arms** [Hamza Shaban March 22](#) [Email the author](#)

Amazon.com has been granted a new patent by the U.S. Patent and Trademark Office for a delivery drone that can **respond to human gestures**. Issued earlier this week, the patent may help Amazon grapple with how flying robots might interact with human bystanders and customers waiting on their doorsteps.

Depending on a person's gestures — a welcoming thumbs up, shouting or frantic arm waving — the drone can adjust its behavior. The machine could release the package it's carrying, alter its flight path to avoid crashing, ask humans a question or abort the delivery.

Among several illustrations in the design, a person is shown outside his home, flapping his arms in what Amazon describes as an “unwelcoming manner,” to show an example of someone shooing away a drone flying overhead. A voice bubble comes out of the man's mouth, depicting possible voice commands to the incoming machine.

“The human recipient and/or the other humans can communicate with the vehicle using human gestures to aid the vehicle along its path to the delivery location,” the patent states.

[https://www.washingtonpost.com/news/the-switch/wp/2018/03/22/amazon-issued-patent-for-delivery-drones-that-can-react-to-screaming-flailing-arms/?utm\\_term=.1e30decb42c2](https://www.washingtonpost.com/news/the-switch/wp/2018/03/22/amazon-issued-patent-for-delivery-drones-that-can-react-to-screaming-flailing-arms/?utm_term=.1e30decb42c2)