



## UAS and SmallSat Weekly News

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### Raytheon Further Develops Multi-Mission Coyote UAS by [Bill Carey](#) - June 17, 2017



*Raytheon exhibited the Coyote last year at the Association of Unmanned Vehicle Systems International conference in New Orleans. [Photo: Bill Carey]*

Raytheon is developing a “Block 2” update of the Coyote tube-launched unmanned aircraft system (UAS) it acquired more than two years ago. The aim is to produce a low-cost, multi-mission-capable air vehicle that users will ultimately dispose of once it completes a mission.

The National Oceanic and Atmospheric Administration (NOAA) has used the Coyote as a sensing platform to conduct hurricane research. The agency first deployed the small UAS in a hurricane in September 2014 when it launched the Coyote from a Lockheed WP-3D Orion turboprop into the eye of Hurricane Edouard. The Lockheed Martin C-130 and Cessna Caravan have also served as launch platforms for the Coyote. <http://www.ainonline.com/aviation-news/defense/2017-06-17/raytheon-further-develops-multi-mission-coyote-uas>

### This smartphone controlled paper airplane is so much more fun than a drone [Maren Estrada](#) June 18th, 2017



Drones? Pffff, quadcopters are old news. They’re great if you want to spend thousands of dollars on a professional-grade model that you use for high-resolution aerial video recording or something. But if you’re just looking to have some fun, we’ve got a great alternative to your run-of-the-mill drones that you’ll definitely want to check out. The [PowerUp 3.0 Smartphone Controlled Paper Airplane](#) is exactly what it sounds like, a motor-powered paper airplane that you can actually fly around and control with your phone! It’s a ton of fun, and it can fly for up to 10 minutes per charge, which is comparable to



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similarly priced quadcopters.

Here are some key details from the product page:

- The world's first remote controlled paper airplane conversion kit has a 180 feet/ 55 meter range and a crash-resistant design
- Contains Bluetooth Smart Technology controlled by your smartphone (check compatible models below)
- Special template paper to ensure easy folding and flying spare, micro USB cable for charging, spare propeller and rudder
- Control by tilting smartphone or tablet right or left for maneuvering and ascend or descend using the throttle lever
- Features battery level indicator charging status indicator and range indicators and an Air Traffic Control attribute

<http://bgr.com/2017/06/18/paper-airplanes-design-amazon-iphone-plane/>

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### **UAVs will be managed like existing air traffic control systems.** [Cherlynn Low](#), [@cherlynnlow](#)

For years, countries have been coming up with ways to regulate the use of drones. The US recently [flip-flopped](#) on whether people have to register their non-commercial unmanned aerial vehicles (UAVs) with the FAA at all, while China made it mandatory to [register drones heavier than 0.55 pounds](#). Those are just small steps on the journey towards a full-fledged set of regulations for drone use, but Europe has just taken a major step in that direction. **The European Commission has released a blueprint** of standards that it [proposed in November](#), which will unify laws across the EU and be up and running by 2019.

Right now, drone-related laws are [different across EU countries](#) such as France, Italy and Germany. The new measures would create a common low-level airspace called [the U-space](#) that covers altitudes of up to 150 meters. The U-space will be governed by a system similar to existing air traffic control management, which will be automated using tools like e-identification and geo-fencing so that the information can always be accessed even by autonomous drones.

The European Aviation Safety Agency (EASA) is working with member states and the industry to come up with safety rules that are as all-encompassing as possible, and will include the EU's basic aviation safety regulations. The European Commission will also finance the integration of drones into the existing aviation system, while a group of experts will be assembled to weigh in on future policy recommendations. The Commission proposes to have the systems for registering drones and drone



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operators, e-identification and geo-fencing up by 2019.

<https://www.engadget.com/2017/06/19/eu-wants-clear-drone-regulations-in-place-by-2019/>

### Dubai's flying taxi drones to begin trials in late 2017

BY [BRETT WILLIAMS](#)

The "[Future City](#)" is about to add another space-age service you won't find anywhere else in the world: autonomous passenger drones.

Dubai's much-hyped autonomous aerial taxi (AAT) service, which made waves [back in February](#) when it was announced as part of its World Government Summit, is finally, officially on track. The city's Roads and Transport Authority (RTA) [just announced](#) a new testing schedule for the program and signed a new deal with German aviation company [Volocopter](#), which will provide the aircraft for the program.

The autonomous drone taxis will fly passengers on predetermined routes throughout the city, serving as more of a sky shuttle service than a true go-anywhere taxi. The test period will start sometime during the fourth quarter of this year, and the RTA expects to continue on a trial basis for about five years until the proper legislation is in place for a bigger expansion.

The first version of the air taxi project used the [Ehang 184](#), a 500-pound, single-seat passenger drone. The Dubai RTA didn't say why it was now switching to Volocopter aircraft but touted the company's reputation for safety. The craft that will be used in the trials, the Volocopter 2X, is a two-seater, which could give it the edge over the smaller single-passenger Ehang.

The crafts are fully electric, with 18 rotors and nine independent battery systems that can pick up the slack to keep the craft in the air if anything fails mid-flight. Volocopter claims the quick-charge battery can be fully juiced in as little as 40 minutes for a max flight time of about 30 minutes. That's at the standard cruising speed of 50 km/h (around 30 mph) and a top speed of 100 km/h (about 62 mph).



The project was originally slated to begin next month, but the RTA pushed the trial period to the fourth quarter of the year to make sure the system is truly ready before the crafts take to the air. The RTA said it's working closely with the Dubai Civil Aviation Authority to iron out legislative and operational guidelines, along with more exact standards for potential taxi service operators to have all the pieces in place before the "commercial and official operation" of the AATs.

<http://mashable.com/2017/06/19/dubai-autonomous-taxi-service-scheduled/#RSZpMn9FQ5qT>



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### Satellites Helping To Protect Shipping Routes, Monitor For Signs Of Famine.

[Fast Company](#) (6/19) reports on how **CubeSats** have changed the shipping industry.



*Eye in the sky: A satellite from Planet captured a fire burning through one of the circular crop fields in the Toshka area of Egypt last year. [Photo: courtesy of [Planet](#)]*

Prior to the **CubeSats** era, “government-owned satellites tended to cover only the more populated areas of Earth – leaving remote corners of the ocean in the dark.” In March, Spire partnered with the National Geospatial-Intelligence Agency and Ball Aerospace “to monitor these blind spots.” Meanwhile, the Defense Department is using satellites to study food security and recently awarded image analysis company Descartes Labs a \$1.5 million contract to monitor farming operations in the Middle East and North Africa “for early signs of famine, which can precede sociopolitical discord,” and, according to the article, such use “makes it quicker, easier, and cheaper to identify such regions and try to prevent conflict.” <https://www.fastcompany.com/40425808/how-tiny-satellites-are-changing-the-way-we-do-business>

### New Commercial Drone Solution Developed for Industry 19 Jun 2017



[Identified Technologies](#) has announced an alliance with [DJI](#) to provide a fully managed commercial drone solution to its Fortune 500 clients in the construction, mining, energy, and landfill industries.

Identified Technologies has integrated its software and services with DJI’s Inspire aerial imaging platform to increase project visibility and team productivity for industrial leaders. Together, the fully-managed solution can handle everything from FAA compliance and flight planning, to automatic flight, data processing and analytics.

“Surveying projects that used to take months can now be safely gathered in minutes,” said Dick Zhang, Identified Technologies CEO.

<http://www.unmannedsystemstechnology.com/2017/06/identified-technologies-dji-develop-new-commercial-drone-solution/>



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### Virginia spaceport plan hones in on rockets, drones and student satellites [Tamara Dietrich](#) [Contact Reporter](#) [tdietrich@dailypress.com](mailto:tdietrich@dailypress.com)



Last month, when Gov. Terry McAuliffe made headlines and history by flying aboard an unpiloted Centaur aircraft on the Eastern Shore, it did more than officially kick off the state's new \$5 million drone runway. It also ticked a key box in Virginia Space's five-year strategic plan to expand its operations and customer base at the Mid-Atlantic Regional Spaceport by adding aerial and submersible drone research and development.

As McAuliffe said at the time: "I want Virginia to own the land and the air and the water."

But Aubrey Layne, head of the [Virginia Department of Transportation](#), said the state's 2017-2022 strategic plan for the spaceport pushes a measured approach to getting there. VDOT oversees Virginia Space. That approach includes building on anchor tenant Orbital ATK and its [NASA](#) commercial contracts to resupply the International Space Station and avoiding pricey "pie-in-the-sky" dreams.

For the next five years, he said, the plan is to focus on ISS resupply missions, line up U.S. Department of Defense missions using Minotaur rockets from Pad 0B and NASA science missions using Orbital's Antares 230 rocket from Pad OA, sign up one or two more commercial space launch customers and missions and diversify further into drones and other aerospace markets. <http://www.dailypress.com/news/science/dp-nws-strategic-plan-mid-atlantic-regional-spaceport-20170613-story.html>

### Drones hunt down rare plants in Hawaii by going where people can't

*Endangered plants were found on steep cliffs on the island of Kaua'i*

by [Alessandra Potenza](#) [@ale\\_potenza](mailto:ale_potenza) Jun 17, 2017

An uncrewed drone discovered a super-rare plant on a steep cliff on the Hawaiian island of Kaua'i. The [discovery](#) wowed botanists — and shows how technology can help conservationists in their fight against extinction.



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*One of the Laukahi plants found by a drone atop a steep cliff in Limahuli preserve in Hawaii. Photo by Ben Nyberg, Merlin Edmonds, JC Watson / National Tropical Botanical Garden*

We were really excited,” says Ben Nyberg, a GIS specialist and lead drone pilot at the [National Tropical Botanical Garden](#), a nonprofit institution [charted by US Congress in 1964](#). Nyberg was flying the drone that found the plants at NTBG’s 1,000-acre Limahuli preserve.

“It’s amazing how much of a game changer this is for field botanists,” Merlin Edmonds, a conservationist at NTBG, [said in a statement](#). Edmonds was training to be a drone pilot with Nyberg when the plants were spotted. “Discovering a population like this would usually take days of searching under life-threatening conditions, but this happened in 20 minutes.”

In Hawaii, the focus is on preserving native species, especially plants. For instance, the plant discovered by drone is a critically endangered species called Laukahi that’s being wiped out by invasive goats that love munching on its leaves. The Laukahi plants have been pushed to steep cliffs that goats can’t get to — but humans can’t get there either. So until this discovery, people thought [fewer than 25 individual Laukahi plants](#) remained in the wild. The drone footage added about 10 more plants, Nyberg says. <https://www.theverge.com/2017/6/17/15817076/drones-endangered-plants-discovery-hawaii-laukahi-conservation>

## Drone technology takes flight at Edmonton International Airport

By John Robertson, [CBC News](#) Posted: Jun 20, 2017 6:25 AM MT Last Updated: Jun 20, 2017

Aerium Analytics, a Calgary-based company which is working with Clear Flight Solutions in the Netherlands, demonstrated the new UAV technology Monday at the Edmonton International Airport.

The robirds are a pilot project that will take flight in July and continue into the fall.

The drones will be part of the existing **wildlife management system** that includes habitat relocation, pyrotechnics and a live falcon that is brought in to assist in keeping the airport runways safe.





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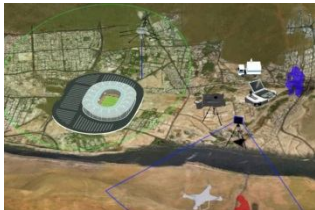
Robird UAVs will be part of Edmonton International Airport's Wildlife Management Plan. (John Robertson/CBC)

Aerium Analytics sees the robirds as a foot-in-the-door for drone technology in Alberta. The company uses drones for surveying, planning and inspecting workplace sectors like mining, forestry, agriculture as well as the oil and gas industry. <http://www.cbc.ca/news/canada/edmonton/drone-bird-airport-uav-edmonton-international-airport-falcon-1.4168404>

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## Paris Air Show: Thales tests counter-UAS solution

20th June 2017 - 11:30 by [Beth Maundrill](#) in Paris



Thales has recently tested its counter-UAS solution and successfully used its jammer to neutralise small unmanned vehicles, the company confirmed during the Paris Air Show. The demonstration took place in April 2017 at a test area in Brittany, previously an air defence base.

The French solution provider uses various sensors, radar technologies and goniometry to detect and remove UAS from the air.

'The solution has been proven for micro and mini UAVs,' said Michel Dechanet, product manager at Thales Air Systems, 'UAVs that are less than 25kg is the main challenge we are dealing with [and] we are ready to deliver this solution.' The system has a detection range of up to 4km for micro-UAVs and with the use of the ground surveillance radar platforms can be detected at altitudes of up to 3,000ft. <https://www.shephardmedia.com/news/uv-online/pairs-air-show-thales-tests-counter-uas-solution/>



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### FAA Still Taking Names for Drone Registry after Court Ruling [Bill Carey](#) - June 20, 2017



FAA Administrator Michael Huerta discusses U.S. policy for managing drones during the Paris Air Show. (Photo: David McIntosh)

The U.S. Federal Aviation Administration is still encouraging drone hobbyists to register their names on-line, despite a recent court ruling that found its registry unlawful for model aircraft. At the same time, the agency is working with the unmanned aircraft industry to find a legal or legislative fix to the situation, FAA Administrator Michael Huerta said Tuesday at the Paris Air Show.

In a decision dated May 19, the U.S. Court of Appeals for the District of Columbia Circuit said the FAA's on-line registry violates a provision of 2012 legislation—the Special Rule for Model Aircraft—that prevents the agency from regulating a model aircraft that is used for recreational purposes, as long as it is flown safely. The agency can petition for a rehearing within 45 days of the judgment, but industry observers assume the FAA will seek a legislative remedy from Congress.

As of the court's decision, 763,678 hobbyists had registered through the FAA's on-line system, paying \$5 to obtain a single identification number for all of the small drones they fly.

<http://www.ainonline.com/aviation-news/air-transport/2017-06-20/faa-still-taking-names-drone-registry-after-court-ruling>

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### Drone Pilots Are Buying Russian Software to Hack Their Way Past DJI's No Fly Zones [BEN SULLIVAN](#) Jun 21 2017 It's an arms race.

Should drone owners be able to fly their drones wherever and however they want to? This is the question [increasingly asked](#) by the consumer drone community as drone giant DJI tightens [flying restrictions](#) on its customers.



The debate is one with property rights at its core. And in the never-ending cat and mouse game of DJI drone pilots trying to escape constraints [like geofences in the vicinity of airports](#)—no fly zones





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implemented by over-the-air updates straight to the drone's GPS —some pilots are now paying hundreds of dollars to evade DJI's watch. Enter [Coptersafe](#), a drone modification business that jailbreaks drones.

"It is very good that DJI makes a lot of effort about safety," a Coptersafe spokesperson told Motherboard, "but I think that limitations should be set according to local laws."

Coptersafe.com, a small, online business **based out of Russia**, sells drone modifications—in both hardware and software form—for a range of DJI's products. Physical modification circuits, [like this one for the popular Phantom 4 drone](#), allow pilots to trick their drone's GPS software into permitting flights inside DJI's no fly zones. Other mods are downloaded over the internet to a user's drone, like [this software mod for DJI's Mavic Pro](#), which also permits no fly zone flying. Coptersafe also sells mods that claim to unshackle DJI's drones from altitude restrictions and speed limits.

The Coptersafe spokesperson spoke highly of DJI, and told me that geofencing is very important, but said he believes DJI's restrictions aren't conforming with local law. He said that the idea for Coptersafe was created because his [aerial video company](#) faced problems filming because of DJI's geofences, despite being authorized to fly by local administrations.

[https://motherboard.vice.com/en\\_us/article/drone-pilots-are-buying-russian-software-to-hack-their-way-past-djis-no-fly-zones](https://motherboard.vice.com/en_us/article/drone-pilots-are-buying-russian-software-to-hack-their-way-past-djis-no-fly-zones)

## President Trump will talk policy with drone makers, wireless companies and tech investors on Thursday

[TONY ROMM@TONYROMM](mailto:TONY.ROMM@TONYROMM) JUN 21, 2017 [LINKEDIN](#)



*U.S. President Donald Trump greets Microsoft CEO Satya Nadella, Amazon CEO Jeff Bezos and White House Director of Strategic Initiatives Chris Liddell before a meeting of the American Technology Council in the State Dining Room of the White House, June 19, 2017. Chip*

President Donald Trump will gather the leaders of major drone manufacturers, wireless companies and venture capital firms at the White House on Thursday to discuss how the U.S. government can help advance emerging technologies.

One of the sessions will focus on **drones**, and [among the executives in attendance](#) will be Michael Chasen, the leader of PrecisionHawk; Ben Marcus, the CEO of AirMap; and Jaz Banga, the chief executive of Airspace Inc. They'll huddle with White House leaders — as well as regulators at the Federal Aviation Administration — on the sort of rules that govern how and where unmanned aerial craft can operate, said Michael Kratsios, the president's deputy chief technology officer, who previewed the meeting on a Wednesday call with reporters.



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<https://www.recode.net/2017/6/21/15848456/trump-meeting-drones-wireless-investors>

### 2017 Drone Buyer's Guide

Whether you're just getting started or a seasoned drone expert, this guide will help you navigate the different options available in the market. Download the 2017 Drone Buyer's Guide today to learn which drone model is the right choice for your business. **From DroneDeploy...**

[http://resources.dronedeploy.com/2017-drone-buyers-guide?utm\\_campaign=Newsletter&utm\\_source=hs\\_automation&utm\\_medium=email&utm\\_content=53410001&\\_hsenc=p2ANqtz-9NmWNMNZHHT1dCVYjGzNVt0QpyRzVFGW367CXd4vWjrj-9R\\_mYbGrHbZRijXkkCxeePZXvgZV2FaZsKaKijkY5lGniV4z4Sws4\\_RLqcEn9kZhOgge4&\\_hsml=53410001](http://resources.dronedeploy.com/2017-drone-buyers-guide?utm_campaign=Newsletter&utm_source=hs_automation&utm_medium=email&utm_content=53410001&_hsenc=p2ANqtz-9NmWNMNZHHT1dCVYjGzNVt0QpyRzVFGW367CXd4vWjrj-9R_mYbGrHbZRijXkkCxeePZXvgZV2FaZsKaKijkY5lGniV4z4Sws4_RLqcEn9kZhOgge4&_hsml=53410001)

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### UAV equipped with radiation detectors can assist hazmat teams

By [Patrick C. Miller](#) | June 21, 2017



BNC Scientific is adding an unmanned aircraft vehicle (UAV) equipped with radiation detectors to its suite of hazardous materials and first responder instrumentation.

The lightweight system—called the Phoenix ACE RAD Airborne Radiation Detector—is capable of detecting gamma and x-rays from a safe distance using a tablet and joystick controller. According to the company, UAV's equipped with nuclear radiation detectors are valuable tools for radiation detection and incident mitigation programs.

The Phoenix ACE RAD will be used for aerial and plume mapping, site surveying and for inspecting buildings and other structures. BNC said the combination of a UAV and radiation detector allows hazardous situations to be assessed and evaluated without putting first responders at risk. The UAV also offers the advantages of low-cost surveys and the ability to reach difficult places. <http://uasmagazine.com/articles/1707/uav-equipped-with-radiation-detectors-can-assist-hazmat-teams>



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### UAS used to provide insight into technique of national sailing teams

Finally, The New York Times published an article demonstrating how UAS are currently being used in sailing, specifically in this year's America's Cup. Nick Bowers ran a small video production company, and often filmed dramatic sailing footage using UAS. His work became well-known in the sailing world, and Team New Zealand contacted Bowers, offering him a position running the team's visual data program. While Team New Zealand trained, Bowers would record videos of their practices via UAS, and sync the videos with data collected by the boat. His work helped the team find success in designing a new boat, and the team's performance overall. Team New Zealand currently holds a 3-0 lead on Oracle Team USA in the first-to-seven series, in part thanks to Nick Bowers and his UAS technological assistance.

## Unmanned Systems Association of Virginia

Today, U.S. Sens. Mark R. Warner (D-VA), John Hoeven (R-ND), Catherine Cortez Masto (D-NV), and Dean Heller (R-NV) introduced bipartisan legislation designed to advance the development of unmanned aircraft systems (UAS) and build on the Federal Aviation Administration's (FAA) efforts to safely integrate them into the National Airspace System. The Safe DRONE Act of 2017 will ensure that the United States keeps pace in the development and implementation of unmanned technology.

**The Unmanned Systems Association of Virginia (USAV) applauds the introduced bill, which ensures that the United States keeps a competitive edge in the development of unmanned technology.**

The senators' press release, which includes a supportive quote from USAV, outlines these highlights of the Safe DRONE Act of 2017:

- Develops a Trained UAS Workforce
- Coordinates Federal UAS Spectrum Policy
- Advances Unmanned Traffic Management
- Enhances UAS Safety and Security
- Provides UAS Registration Authority

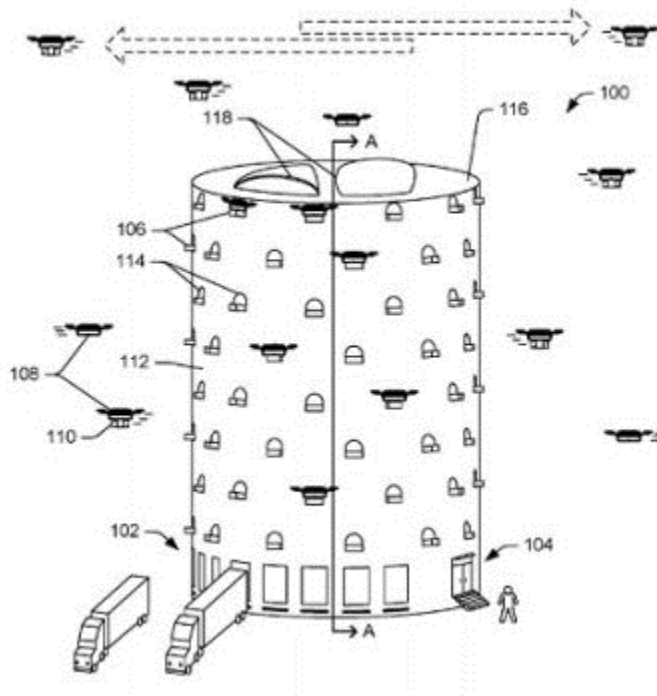
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- Extends Research Opportunities at UAS Test Sites
- Supports Emergency Operations Guidelines
- Continues Development of UAS Industry

Read the press release [here](#).

For more information on USAV, please visit [www.unmatchedva.org](http://www.unmatchedva.org)

## Amazon's giant drone hives: firm eyes massive city-center towers as delivery hubs



*Drawing of a drone-delivery tower, from an Amazon patent application made public on June 22, 2017 by the U.S. Patent and Trademark Office (U.S. Patent and Trademark Office)*

By [ETHAN BARON](#) | [ebaron@bayareanewsgroup.com](mailto:ebaron@bayareanewsgroup.com) | Bay Area News Group

PUBLISHED: June 22, 2017 at 1:15 pm | UPDATED: June 23, 2017 at 3:30 am

SEATTLE — A barrage of patent applications from e-commerce giant Amazon showcases a futuristic, hive-like drone-delivery tower fed by 18-wheelers and filled with robots. The patent bids also reveal the company's possible solutions to two major drone problems: noise, and the possibility the aircraft could fall out of the sky.



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It turns out that for Amazon, its current enormous warehouses — which it calls “fulfillment centers” — located on the outskirts of cities like Tracy are not ideal for serving the urban customers that make up a large portion of its market.

“There is a growing need and desire to locate fulfillment centers within cities, such as in downtown districts and densely populated parts of the cities,” said the patent application, made public June 22 by the U.S. patent agency, along with 10 other drone-related applications from Amazon.

“By locating the fulfillment centers within the cities, items may be more quickly delivered to the growing population of people that live in the cities, as well as the large population of people who work in the cities.”

So instead of sprawling over a million square feet like the Tracy warehouse, the drone towers would rise skyward. Amazon describes “multi-level” structures, and in the patent application drawing, the building dwarfs the tractor-trailers feeding it.

Robots inside would move goods around, and might conduct maintenance on drones, according to the application, which envisions a facility that may or may not include human workers.

The building would be pierced by multiple ports on every level, with landing docks for drones. The aerial vehicles could even fly around inside the tower, according to the application.

Drone activities might largely take place on the upper levels to minimize noise, a significant concern for urban deliveries. <http://www.mercurynews.com/2017/06/22/amazons-giant-drone-hives-firm-eyes-massive-city-center-towers-as-delivery-hubs/>