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Wing Loong II's Paris Presence Underlines China's UAV Market Gains

China's UAVs are selling well in Asia and the Middle East

Jun 23, 2017 **Tony Osborne** | ***Aviation Week & Space Technology***

The Dragon Rising

It was not the most dynamic of exhibits on display at this year's Paris Air Show, but the unexpected appearance of a Chinese-built armed UAV in the static display is perhaps a reminder that China's unmanned systems are beginning to grab a significant chunk of the international export market.

A full-scale mock-up of the Wing Loong II below, the latest UAV design to emerge from the Chengdu Aircraft Industry division of Avic, surrounded by a large number of indigenously developed weapons, attracted significant attention at Paris.

Regular air show visitors are now familiar with the lineup of scale models of these platforms in booths, but the display of a full-scale model at a major Western trade show clearly demonstrates China's growing confidence in its unmanned capabilities.

The Wing Loong II, which flew for the first time in February, clearly bears more than a passing resemblance to the General Atomics MQ-9 Reaper/Predator B platform and was developed from the Wing Loong I that first flew in 2009, which was clearly a clone of the MQ-1 Predator.
http://aviationweek.com/defense/wing-loong-ii-s-paris-presence-underlines-china-s-uav-market-gains?NL=AW-05&Issue=AW-05_20170626_AW-05_81&sfvc4enews=42&cl=article_1&utm_rid=CPEN1000003332045&utm_campaign=10608&utm_medium=email&elq2=9a08a503723149d5958b102f45901090

Scientists develop drones that can plant one billion trees every year, advancement to help combat deforestation

IndiaPTIJun, 25 2017 12:47:48 IST

Melbourne: Scientists have developed new drones that can identify ideal places to grow trees and sow one billion plants every year, an advance that may help combat deforestation.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Deforestation and forest degradation make up 17 percent of the world's carbon emissions - more than the entire world's transportation sector, according to the United Nations.

Researchers from UK-based company BioCarbon Engineering helped build a drone system that can scan the land, identify ideal places to grow trees, and then fire germinated seeds into the soil. The firing drone follows a pre-set planting pattern determined from an algorithm, which uses information from a separate scanning drone, they said.
http://www.firstpost.com/india/scientists-develop-drones-that-can-plant-one-billion-trees-every-year-advancement-to-help-combat-deforestation-3743457.html

Africa is now the world's testing ground for commercial drones

Lily Kuo June 24, 2017 Quartz Africa

The world's first commercial drone delivery service operates from a hill almost smack dab in the middle of **Rwanda**. A barbed wire fence surrounds a field, a white tent, and a control tower. From here, Zipline, a San Francisco-based robotics company, delivers blood by drone to almost half of all Rwanda's blood transfusion centers. Orders are made online, by text, phone, or WhatsApp. A technician sits in a refrigerated room where the blood—specifically red blood cells, platelets, plasma, and cryoprecipitate—are stored, communicating with his team over Slack. An order has come in for a hospital about two hours away by car. The drone delivers the package in 20 minutes. African countries like Rwanda, Cameroon, Malawi, South Africa, and Kenya are increasingly open to the use of drones in tourism, health services, and e-commerce.


Preparation for launch. (Reuters/James Akena)

Kenya recently said it would allow the commercial use of drones. In **Malawi**, drones have been deployed to transfer HIV tests to and from rural parts of Malawi. Elsewhere they're being used to combat poaching or to augment safaris. A **Cameroonian** start up named Will & Brothers recently raised $200,000 to begin assembling and producing within the country parts for drones. In **Rwanda**, another drone company has plans to build what would be the world's first civilian "drone port" for commercial deliveries and ferrying health supplies.

A **Morocco**-based startup Atlan Space has developed software to use drones for monitoring illegal maritime activity (video) like illegal fishing or oil spills. **Ugandan** authorities have also been open-minded, according to Moses Gichanga, founder of Autonomous Systems Research, a **Kenya**-based tech consultancy. With consent from the country's aviation regulator and local authorities, his company has been doing aerial drone tests in the Uganda's eastern districts as well as in Malawi. https://qz.com/1003810/the-worlds-first-commercial-drone-delivery-operates-from-a-hill-in-rwanda/

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Senators look to boost safe drone use in new legislation

FedScoop StaffJUN 23, 2017 | FEDSCOOP

New legislation introduced Friday would grant the Federal Aviation Administration the authority to require registration and marking of small drones, bringing the emerging technology a step closer to widespread use.

The Safe Drone Act of 2017 aims to further the development of unmanned aircraft systems and help clarify the safety and privacy concerns that cities and states must address as they begin to embrace the possibilities proffered by the now-affordable technology. The bill was co-authored by Democratic Sens. Mark Warner, Va.; John Hoeven, N.D.; Catherine Coretz Matso, Nev.; and Republican Sen. Dean Heller, Nev.

The bill would require NASA and the Secretary of Transportation to create an implementation plan for UAS air traffic management, due within a year of the bill's passage in addition to establishing a working group to recommend federal policy for future communications.

It also sets plans to establish an interagency working group including the FAA and DHS to discuss safety and security recommendations. The FAA would release proposal to modify drone regulations within one year of the bill's passage that include "operations over people, operations beyond the visual line of sight of the operator, operations at night, and operations of multiple unmanned aircraft systems by a single remote pilot." https://www.fedscoop.com/senators-look-boost-safe-drone-use-new-legislation/

Drones to be deployed in offices as night watchmen

Japanese consortium envisions cost-saving devices as part of the security team

YUMA IKESHITA, Nikkei staff writer

A prototype of a T-Frend office monitoring drone

TOKYO -- Intruders beware. Three companies are teaming up to launch a nighttime drone patrol service for offices later this year.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

T-Frend, a drone-based monitoring service, is the creation of Taisei, a Nagoya-based office building operator, Nippon Telegraph and Telephone East (NTT East), and Tokyo-based drone startup Blue Innovation. Actual in-office operations will be handled by Taisei with NTT East charged with building a fast, high-capacity network. Blue Innovation is providing hardware and automatic flight control systems.

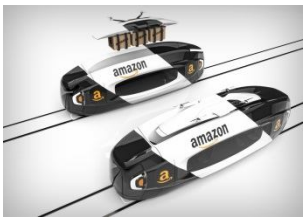
Like night watchmen, drones will do the rounds in offices after working hours, flying down halls periodically to keep an eye on things. They will record video that is transmitted to the cloud via NTT East's communication services.

Building administrators can monitor drone flights in real time or review recorded video later.

Blue Innovation has developed an autonomous flight control system that **does not require global positioning technology**. Navigation is controlled through infrared sensors that measure the distance from floors and imaging sensors that can detect obstacles. The drones will be designed to stay at a certain height so that documents will not be blown away by wind from propellers. http://asia.nikkei.com/Business/Companies/Drones-to-be-deployed-in-offices-as-night-watchmen

AMAZON MEETS DRONE MEETS HYPERLOOP!

BY SARANG SHETH 06/23/2017



These massive electric trains would carry Amazon cargo via rail to different parts of the country. However, upon reaching a destination, last-mile delivery of packages would be made via drones that dock inside the top of the train. Iris aims at using current infrastructure like railroads as their mode of operations, and hopefully becoming effective enough to democratize itself and offer its services to the likes of FedEx and UPS. The concept aims to tackle the entire delivery chain by creating one single solution that takes care of the entire A to Z (Amazon joke!) of deliveries. http://www.yankodesign.com/2017/06/23/amazon-meets-drone-meets-hyperloop/

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A new FAA bill could bring drone deliveries closer to reality

Daniel Keyes Jun. 26, 2017

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

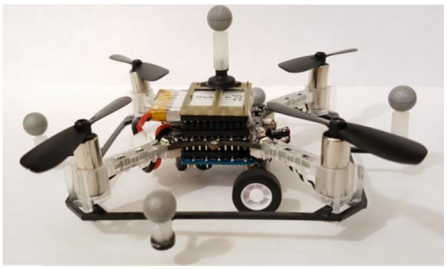
Senate legislators directed the Federal Aviation Administration (FAA) and US Department of Transportation to enact new rules to accelerate the development of drone delivery within US borders as part of a new FAA reauthorization bill, Bloomberg reports.

The bill directs the Department of Transportation to create a new certification for companies performing drone deliveries. Companies that receive the certificate would be able to operate drones for deliveries, though they would still be subject to other laws and regulations.

The bill authorizes the FAA to grant more exemptions for drone operations beyond pilots' lines of sight. In the US, drones cannot be flown out of the line of sight of the operator. This significantly curtails the potential benefits of drone delivery. If companies were able to bypass this rule, long-distance, unmanned drone deliveries would come much closer to reality in the country. http://www.businessinsider.com/new-faa-bill-could-bring-drone-deliveries-closer-reality-2017-6

Drones that drive

CSAIL team's system of quadcopters that fly and drive suggest another approach to developing flying cars. Rachel Gordon | CSAIL June 26, 2017



Researchers from MIT's Computer Science and Artificial Intelligence Laboratory (CSAIL) are aiming to develop robots that can both maneuver around on land and take to the skies. In a new paper, the team presented a system of eight quadcopter drones that can fly and drive through a city-like setting with parking spots, no-fly zones, and landing pads.

"The ability to both fly and drive is useful in environments with a lot of barriers, since you can fly over ground obstacles and drive under overhead obstacles," says PhD student Brandon Araki, lead author on the paper. "Normal drones can't maneuver on the ground at all. A drone with wheels is much more mobile while having only a slight reduction in flying time."

The project builds on Araki's previous work developing a "flying monkey" robot that crawls, grasps, and flies. While the monkey robot could hop over obstacles and crawl about, there was still no way for it to travel autonomously.

To address this, the team developed various "path-planning" algorithms aimed at ensuring that the drones don't collide. To make them capable of driving, the team put two small motors with

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

wheels on the bottom of each drone. In simulations, the robots could fly for 90 meters or drive for 252 meters, before their batteries ran out. http://news.mit.edu/2017/drones-drive-flying-cars-0626

UAS provides 'flying cell site' to bolster communications for first responders AUVSI News

First responders from New Jersey took part in a simulated post-disaster scenario on Tuesday where an unmanned aircraft provided cell phone connectivity, something often lacking in the wake of natural disasters.

The exercise was a joint venture of Verizon, drone services provider American Aerospace Technologies and the Cape May Office of Emergency Management.

"Every time there's a major incident, the biggest drawback is communications," said Marty Pagluighi, director of the Cape May County Office of Emergency Management. "So any kind of communication enhancements we're willing to look at. And if we can help them advance this technology, it gives us another tool as emergency managers."

A fixed-wing RS 20 UAS provided by American Aerospace Technologies took off from Woodbine Municipal Airport in Cape May County (accompanied by a chase plane) and then flew over the area. First responders from state police, the U.S. Coast Guard Sector Delaware Bay and Cape May County Office of Emergency Management watched the takeoff and then moved to the nearby Belleplain State Forest, where Verizon simulated a cell phone outage.

Verizon provided the first responders with Samsung S6 cell phones that were attuned to the cell phone system broadcaster located on the aircraft. When they first arrived at a recreational field in the forest, the phones had no service. Once the drone was overhead, they were able to make calls, send texts and make social media posts and even stream video. http://www.auvsi.org/blogs/auvsi-news/2017/06/20/uas-provides-flying-cell-site-to-bolster-communications-for-first-responders

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Kansas State University Polytechnic Campus receives approval to fly UAS at night AUVSI News

The FAA has granted Kansas State Polytechnic's Applied Aviation Research Center permission to fly UAS at night.


Photo Courtesy of Kansas State University Polytechnic Campus

The campus's research sector will benefit from this waiver, and the waiver will also be used in commercial flight training courses, as well as in upcoming curriculum in the UAS degree option.

According to Kurt Carraway, UAS executive director of the Applied Aviation Research Center, the waiver request was initially motivated by an ongoing research project with an electric services company called Westar Energy, but Carraway believes that the waiver will open up a plethora of opportunities in other areas, saying the waiver's "benefits will have an impact on a multitude of contributions this campus makes to the unmanned industry."

Starting on June 23, the Applied Aviation Research Center introduced night operations into its commercial remote pilot training course. The course addition includes "two hours of classroom instruction covering flight basics at night, necessary waivers and exemptions for night flight and how to set up a night operation." After classroom instruction is completed, students receive one hour of hands-on night flight training in the field using a S-1000 multirotor aircraft. http://www.auvsi.org/blogs/auvsi-news/2017/06/26/kansas-state-university-polytechnic-campus-receives-approval-to-fly-uas-at-night

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Drones in trials to deliver medicine in rural Northland 27 Jun, 2017 12:17pm

Drones could be delivering medicine to remote, rural Northland New Zealand communities by March next year.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Medical Drones Aotearoa plans to trial delivering medical supplies to Mitimiti, north of Hokianga Harbour, in November and aims to start its first regular service by March, pending Civil Aviation Authority approval.

Company founder Robyn Kamira said about 14 per cent of patients in low socioeconomic and rural areas did not pick up their medicines and more rationed their medicines to make them last longer.

Those living in Mitimiti faced a relatively bumpy three-hour return trip to the closest pharmacy, making it difficult for residents to access even basic medical supplies, Ms Kamira said.

The trial would test drones, leaving from a few different launch sites, to deliver unrestricted medicine, to Mitimiti marae where it could be picked up or delivered by trusted community members. The company had acquired the airspace to fly to Mitimiti as a drone testing space. http://www.nzherald.co.nz/the-country/news/article.cfm?c_id=16&objectid=11882592

German firms link up to tackle emerging counter-drone market

Sebastian Sprenger, June 27, 2017

LE BOURGET, France — Three German companies made their joint debut at the Paris Air Show to present a counter-drone system designed to foil anything from explosive-laden aerial robots to protecting against corporate espionage from the skies.

Rohde & Schwarz, ESG and Diehl Defence inked an agreement earlier this month to further develop the Guardion suite of systems, which already was deployed to guard the 2015 G-7 summit in Elmau, southern Germany, and the 2016 visit of U.S. President Barack Obama in Hannover.

The system consists of various sensors — radio, radar, acoustic and optical — to detect the presence of drones in the nearby air space. A command and control system, a derivative of the Bundeswehr's own Taranis suite, processes the sensor data and offers situational awareness of any incoming threats through a map-like visualization.

Depending on the drone type, system operators can initiate countermeasures ranging from shutting down the specific frequency band of the threat aircraft's radio link, jamming the GPS signal or, in the case of fully autonomous aircraft operation via inertial navigation, fry the approaching drone's electronics with a high-power electromagnetic pulse. http://www.defensenews.com/articles/german-firms-link-up-to-tackle-emerging-counter-drone-market

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

This Drone is Helping Golf Courses Stay Green

Tishin Donkersley @TishinD June 26, 2017

James Peverill, CEO **GreenSight Agronomics**, used to build drones for the military and now uses his skills to build drones that can survey the health of golf course turf and help his clients save water and chemicals needed to keep the fairways healthy.

From the drone command center, licensed pilots remotely activate the drone from its sight and make daily flights around the course. From the drone's aerial video, their platform can analyze low points of moisture, the health of the green, provide day-to-day comparisons of the turf, review renovation monitoring and give a snapshot of each hole. Ultimately this evaluation will help golf course staff manage overall turf quality and efficient use of water and chemicals to make it all green and beautiful.

To date, the company has surveyed over 20,000 acres of golf turf, are located at close to 36 active sites, and have nearly 1000 hours of safe flight operations logged. They also have contracts with Arlington-based agencies like DARPA and ONR as well as the Air Force Research Lab, US Army and University of Maryland.

Recently GreenSight won the 2017 Startup Arlington competition and walked away with $25,000 in capital from Kiddar Capital, three months lodging at a luxury apartment in Arlington, incubator space at 1776 and access to influencers, investors and mentors from the community.
https://tech.co/drone-golf-courses-stay-green-2017-06

Spies, herders, painters: the many unusual roles of drones

Drones are proven for surveillance or delivery, but what's less widely known is their usefulness for herding elephants and seeing through walls.

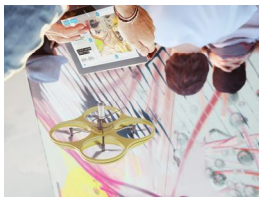
Businesses and non-profits are finding innovative ways to use drones to accomplish tasks that humans cannot do, and these developments have yielded benefits for environmental conservation, military strategy and more.

- Conservation Drones is equipping Nepal and parts of Africa with low-cost aircraft that spot elephant poachers in the forest. (Scientific American)
- Drones in Hawaii have found rare plant species by flying to precarious spots like steep cliffs. (The Verge)

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

- Researchers at the University of California in Santa Barbara have developed drones that see through walls, making them expert spies. As two drones navigate a closed structure, one emits a Wi-Fi signal, and the other picks it up. Together, they build a 3D image of the interior. (TechCrunch)
- Drones found a till-then undiscovered ancient monument in Petra. It's the size of an Olympic swimming pool. (National Geographic)

- Drones are herding elephants away from crops during harvest time in Tanzania. The pachyderms retreat when they spot the unmanned aircraft. (New Atlas)
- An Italian project, "Paint By Drone," uses the aircraft to produce murals and designs on massive vertical surfaces. (CityLab)



- In Australia, an engineer is developing drones that release germinated seeds to replace forests. She predicts the drones will be able to plant a billion trees a year to combat the climate effects of deforestation. (Australian Broadcasting Company)

https://www.axios.com/spies-herders-painters-the-many-unusual-roles-of-drones-2448494567.html

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MIT's gas-powered drone is able to stay in the air for five days at a time *Brian Heater (@bheater)*

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Last month, a team of MIT engineers launched Jungle Hawk Owl from the back of a compact car. It was the first flight for the 24-foot-wide drone, which the team believes is capable of staying in the air for five days on a single tank of gas.

The craft was designed to address a challenge posed by the U.S. Air Force. The teams were asked to design a UAV (unmanned aerial vehicle) powered by solar energy that was able to stay in the air over long periods. The idea was to design a vehicle that could help deliver communications to areas impacted by natural disasters or other emergencies. Weather balloons have traditionally been the choice, but they drift with the wind and often don't stay in the air long enough to be really effective.

"It's true that it's less appealing to be running on gasoline [than solar]," he tells TechCrunch. "But building the solar airplane would be a big boondoggle. With the design we chose, we've already had a first flight. It was easy to build compared to the other aircraft available, and the cost and fuel consumption are really low. We spent more fuel getting to the launch site than flying the airplane for three days."

The winning team designed a prototype of the drone using GPkit, a Python-based modeling tool designed by Hoburg. The final design was built out of lightweight materials like carbon fiber and Kevlar, weighing a total of 55 pounds (closer to 150 with payload and a tank full of gas). The parts can be easily dissembled and shipped to affected areas and the payload is the perfect size for carrying a shoebox-sized communication device designed by MIT's Lincoln Labs, which helped support the project.

In addition to supporting areas in the wake of a disaster, the team believes the drone could go a ways toward helping tech companies like Google and Facebook achieve their longstanding (and in one case recently abandoned) dream of delivering internet access to rural areas. But there's still a lot of work to be done, and the school is working with the FAA for permission to keep the drone in the air for the full five days as it continues its testing over the summer.
https://techcrunch.com/2017/06/27/mits-gas-powered-drone-is-able-to-stay-in-the-air-for-five-days-at-a-time/

How firefighters in South Africa are using drones to protect their forests IAFRIKAN NEWS

Earlier in 2017, the Western Cape province of South Africa experienced devastating wildfires that destroyed houses, businesses and even took lives. It has emerged that during their rescue

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

operations and work to stop the fires, South African firefighters requested drones to survey the affected areas.

"Commercial drones can withstand temperature extremes from below 5 degrees Centigrade, up to 50 degrees Centigrade, and they can be flown to an altitude of 4500 meters, making it possible for firefighters to deploy drones over areas where fires are active. With the use of advanced thermal imaging cameras transmitting data to command centers, they can identify people or animals, even where visibility is limited by darkness, smoke or vegetation, so allowing emergency teams to pinpoint exactly where assistance is needed. Thermal imaging cameras also support proactive firefighting measures, by mapping hotspots where flare-ups could occur." said JJ Rebello, Foreign Government Relations Manager at Airborne Drones.

The drones requested by firefighters in South Africa during the Western Cape wildfires were to be equipped with heat mapping capabilities, which allowed them to identify hot spots at the greatest risk of flare-ups, this is something that is almost impossible for firefighters on the ground to do as they are working in blinding smoke and dense undergrowth.

 Airborne Drones' drone in action.

Rebello added that drones will not only improve the effectiveness of firefighting efforts like they did recently in South Africa; but they will also reduce the risk to human life during firefighting operations and stand to limit damage to assets by enabling firefighters to work proactively, rather than reactively. https://thenextweb.com/africa/2017/06/28/firefighters-requested-drones-south-africa-help-stop-fires-western-cape/

Drones would get rules for deliveries, traffic management under House bill

Bart Jansen , USA TODAY Published 7:26 p.m. ET June 27, 2017 | Updated 8:32 p.m. ET June 27, 2017

 *(Photo: AMOS GUMULIRA, AFP/Getty Images)*

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

WASHINGTON – Commercial drone operators would get federal deadlines for regulations governing deliveries, for flying the remote-controlled aircraft farther than the pilot can see, and for special rules for smaller drones, under legislation a House panel approved Tuesday.

The legislation governing the Federal Aviation Administration from Rep. Bill Shuster, R-Pa., calls for:

♦A final Transportation Department regulation within a year that sets the rules for drone deliveries.

♦The FAA to allow flights farther than the pilot can see within six months at six testing regions nationwide. FAA has already been testing flights called beyond line of sight with BNSF Railway.

♦The development of rules for an air-traffic management system for drones. Remote-controlled aircraft won't be guided by the same controllers as passenger planes, but they still need rules for pilots and drones to signal each other, to avoid collisions.

The House Transportation and Infrastructure Committee also agreed by voice vote to add a provision to broader FAA legislation from Rep. Rodney Davis, R-Ill., to develop drone regulations for aircraft weighing less than 4.4 pounds. In particular, his provision would exempt pilots from needing an FAA certificate to fly the drones, as is required for larger drones.

The industry has long sought special rules for smaller drones because they are considered less risky than larger aircraft. The comprehensive FAA rule in place now governs commercial drones up to 55 pounds.

But Rep. Peter DeFazio, D-Ore., argued against special rules for smaller drones because he said a 4-pound object could disable an airliner's engine if it were ingested. FAA tests found that a 4-pound object falling from as little as 50 feet could potentially kill someone it hits, he said. "These things need to be rigorously regulated," DeFazio said.

Several lawmakers agreed with Davis that the U.S. needs to set rules for industry to develop. The FAA would have to organize a committee within 60 days to develop rules for drones up to 4.4 pounds, under the Davis provision. "We can either be stagnant or we can innovate," Davis said.

FAA has missed previous congressional deadlines for drone rules because of the complexity of issues at stake. But the legislation reflects keen interest among lawmakers for greater development of commercial drones.

The provisions must still be considered by the full House and Senate. But Congress spurred FAA to create comprehensive rules for drones faster, with the rules taking effect in August 2016 for drones weighing up to 55 pounds.

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

Development of some sort of air-traffic control system for drones is also key. NASA is exploring ways with FAA for drones and their pilots to communicate better with each other to avoid collisions, under what is called a traffic-management system.

The bill calls for the secretary of transportation to determine within 120 days whether it's safe to have a traffic-management system for drones, with expedited consideration for rural areas such as croplands.

The bill also calls on FAA to propose within 18 months regulations for a traffic-management facilities to govern drone flights up to 400 feet above ground.
https://www.usatoday.com/story/news/2017/06/27/drones-would-get-rules-deliveries-traffic-management-under-house-bill/428836001/

Europe's Complex UAV Studies Delivering Tangible Results

Maturing UAV studies suggest Europe's governments are taking sovereign unmanned capabilities more seriously.

Jun 23, 2017 **Tony Osborne** | *Aviation Week & Space Technology*

Despite billions of euros being spent across the continent to generate the technology to meet expected military needs, governments have flowed their money for intelligence, surveillance and reconnaissance requirements into programs such as the U.S. Reaper or the Israeli Heron. Europe's only indigenous medium-altitude long-endurance (MALE) platform, the Piaggio P.1HH Hammerhead, is being prepared to return to the air following the loss of the first prototype in 2016.

EuroMALE, the joint French, German, Italian and Spanish push to create a European MALE platform, is potentially the largest of these programs. Previously called MALE 2020, EuroMALE is currently the subject of a definition study launched in May 2015. According to industry officials, these studies are now close to key decisions on a platform configuration—most crucially the power plant, likely to be a small turbofan instead of the turboprop used by competing platforms. http://aviationweek.com/technology/europe-s-complex-uav-studies-delivering-tangible-results?NL=AW-05&Issue=AW-05_20170629_AW-05_19&sfvc4enews=42&cl=article_3&utm_rid=CPEN1000003332045&utm_campaign=10705&utm_medium=email&elq2=d4ccd045c866469786d0ce4270678ad4

Life With the Jetsons: Personal VTOL Aircraft Take Off

Jun 5, 2017 Sponsored by KPMG | *AviationWeek.com*

Well-respected players are beginning to make announcements that may suggest that we are on the cusp of a *Jetsons*-type air transportation system. In October, Uber laid out its plans for developing an "on-demand aviation" system using a network of small, electric VTOL

vehicles.[1]Larry Page (cofounder of Google) is believed to be building a version of a VTOL craft in Silicon Valley.[2] And Airbus is developing a personal VTOL aircraft as part of its Project Vahana, under its Silicon Valley division.[3]

With competition heating up, time lines have become aggressive. Uber Elevate believes it will have operational vehicles in the sky within the next five years (and most experts seem to agree.) Uber does not plan to build its own vehicles. Rather, it expects that–given the current market trajectory and activity–the commercial VTOL market will rise to the challenge and deliver a variety of vehicle options by 2023.

There certainly seems to be demand for new forms of transport, particularly within congested cities. According to a recent report by KPMG LLP, mobility services are expected to become a $1 trillion market by 2030.[4] And as noted in the KPMG LLP report titled *The clockspeed dilemma*, consumers are now looking for a "sexy, dynamic experience"[5] from their personal transport choice. There's no doubt that a VTOL aircraft will be sexy and dynamic.
http://aviationweek.com/technology/life-jetsons-personal-vtol-aircraft-take?NL=AW-05&Issue=AW-05_20170629_AW-05_19&sfvc4enews=42&cl=article_5&utm_rid=CPEN1000003332045&utm_campaign=10705&utm_medium=email&elq2=d4ccd045c866469786d0ce4270678ad4

Korea, China, and Japan Look for New Drone Markets 06/26/2017


Source: A captured still from DJI's video clip

By AsiaToday reporter Jisu Kim

As the global drone market is getting more and more intense, Korea, China, and Japan are paving the way for new market by running away from the existing market. Until now, the drones have been mainly used for aerial photography. However, as the market for drones gradually turned to a red ocean, drone companies are turning their eyes to new markets.

China-based drone maker DJI is focusing on agricultural drones that shoot pesticide instead of photos. Founded in 2016, DJI is leading in the non-military drones. It makes almost two-thirds of the world's civilian drones and its overall revenue reached US$1.5 billion last year. About 75% of its drones are exported mostly to the US and Europe, and they are popular among people who enjoy flying the drones for fun or to take aerial pictures.

Located in the High Tech Park of Shenzhen, China's Silicon Valley, the company's showroom has a variety of drones on display. One side of the showroom shows off the recreational drones like the Phantom series, while the other side boasts the industrial drones for agriculture, public

safety, professional photography or film-making. This reflects the company's shift of focus from drones for recreational purposes to drones for more professional uses.

In 2015, DJI launched AGRAS MG-1, an octocopter, or eight-rotor drone which can carry pesticide or fertilizer. The small agricultural drone can carry a liquid payload of 15kg to spray on fields. "DJI sees agriculture as the future for drone business," *AFP* said on Sunday. http://www.huffingtonpost.com/entry/korea-china-and-japan-look-for-new-drone-markets_us_5950de1be4b0c85b96c65aeb

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Transport Canada revises recreational drone use restrictions

By Rose Behar JUN 29, 2017

Transport Canada has revised Canadian drone rules that heavily restricted recreational flight.

The new interim order applies to recreational use for drones over 250 grams and up to 35 kilograms, with violations punishable by fines of up to $3,000 CAD.

Among the regulations that have been altered or added are the following allowances for flying, which state drones must be:

- at least 30 m away from vehicles, vessels, and the public (if your drone weighs more than 250g up to 1kg) — down from 75m in the previous regulations.
- At least 5.5 km from aerodromes (any airport, seaplane base, or areas where aircraft take-off and land) — reduced from 9 km.
- At least 1.8 km away from heliports or aerodromes used exclusively by helicopters outside of controlled or restricted airspace
- During the day and not in clouds (previously just daytime was specified).

While several of the most difficult-to-navigate restrictions have been eased with the new amendments, many of the rules instituted for recreational users still remain.

Drones must clearly marked with the user's name, address and telephone number, within 90 m above the ground or lower, at least 75 m away from vehicles, vessels, and the public (if your

drone weighs more than 1kg up to 35 kg) and at least 9 km away from a natural hazard or disaster area.

Additionally, users must keep them away from areas where it could interfere with police or first responders, within their sight at all times and at a distance of 500 m from themselves or closer. http://mobilesyrup.com/2017/06/29/transport-canada-revises-recreational-drone-use-restrictions/

UNICEF Brings Africa's First Humanitarian Drone Testing Corridor to Life

Betsy Lillian June 29, 2017

UNICEF and the government of Malawi have officially launched an air corridor to test the potential humanitarian use of unmanned aerial vehicles (UAVs).

The corridor – the first of its kind in Africa, says UNICEF – is centered on the Kasungu Aerodrome in central Malawi. With a 40-kilometer radius (and 80-kilometer diameter), it is designed to provide a controlled platform for the private sector, universities and other partners to explore how drones can be used to help deliver services that will benefit communities.

"We have already used drones as part of our flood response, and we can see the potential for further uses, such as transportation of medical supplies, which could transform lives in remote rural communities," comments Jappie Mhango, Malawi's minister of transport and public works.

The corridor will facilitate testing in three main areas:

1. Imagery – generating and analyzing aerial images for development and during humanitarian crises, including for situation-monitoring in floods and earthquakes;

2. Connectivity – exploring the possibility for UAVs to extend Wi-Fi or cellphone signals across difficult terrain, particularly in emergencies;

3. Transport – delivery of small, low-weight supplies such as emergency medical supplies, vaccines and samples for laboratory diagnosis, including for HIV testing.

The UAV corridor will run for at least one year until June 2018. Since the initial announcement in December 2016, 12 companies, universities and non-governmental organizations from around the world have applied to use the corridor, says UNICEF. https://unmanned-aerial.com/unicef-brings-africas-first-humanitarian-drone-testing-corridor-life

SpaceX Vet's Startup Readies Small Rockets for Takeoff

Vector Space Systems raises $21 million to build smaller, cheaper rockets.

Ashlee Vance June 29, 2017

The rockets Vector has started building in a factory in Tucson, Arizona, are tiny compared with the Falcon 9's. The company's first spacecraft, the Vector-R, stands just 42 feet high and can take only 132 pounds of stuff to orbit at a cost of $1.5 million per flight. This means Vector cannot address the bulk of the launch market, which centers on sending satellites that weigh thousands of pounds up for commercial and government customers.

Vector, though, is betting on the coming wave of smaller, cheaper satellites known as CubeSats to be the core of its business. These devices are about the size of a shoebox and have just started becoming popular in recent years as improvements in electronics and software have made it possible to shrink satellites drastically. Planet Labs Inc., a startup in San Francisco, is the best-known CubeSat maker. It has a constellation of 160 satellites circling the Earth, taking daily pictures of the planet's landmass. Other small satellite makers are rushing to market with machines that take pictures, perform communications and conduct experiments in zero gravity. https://www.bloomberg.com/news/articles/2017-06-29/spacex-vet-s-startup-readies-small-rockets-for-takeoff

Lockheed Martin Invests In CubeSat Company Terran Orbital.

The Washington Business Journal (6/29, Subscription Publication) reports that Lockheed Martin Ventures announced Thursday that it is investing an undisclosed amount in Terran Orbital, a West Coast CubeSat manufacturer. According to the article, the investment is intended to "open up this

Robert Rea | Axcel Innovation | Charlottesville and Portsmouth, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.com

market" to Lockheed, and help it to "pursue further opportunities that reach outside its traditional space business."

Aviation Groups Ask Congress to Wait on Drone Regulation Legislation

Joint statement urges legislators to wait for the Drone Advisory Committee's input before enacting any new laws. Jake Lamb

Thirteen drone groups signed an open letter to Congress to consider more information and input before moving forward with new laws. All of the drone regulation legislation that has been tossed around the senate recently has not escaped the notice of drone and aviation industry leaders, as demonstrated in an open letter to Congress from 13 groups including the Aircraft Owners and Pilots Association, Academy of Model Aeronautics, Commercial Drone Alliance and others.

"We believe legislation is premature and lawmakers should wait until efforts such as the FAA's Drone Advisory Committee (DAC) have created consensus recommendations – with input from stakeholders – before considering changes to longstanding federal governance of the NAS," the statement read. "Legislating changes before consensus is reached may have dramatic unintended consequences that could stifle innovation, restrict economic growth and interstate commerce, and potentially compromise safety." http://www.flyingmag.com/aviation-groups-ask-congress-to-wait-on-drone-regulation-legislation