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UAS and SmallSat Weekly News

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5 Things I Discovered at Commercial UAV Expo Europe May 24, 2018 Kevin O'Donovan

It's been a few weeks now since Commercial UAV Expo Europe took place in Amsterdam, and we've seen session and video highlights that showcase some of what happened. Before I went to the event, I published a blog that laid out five things I was watching out for at the Expo It's time to take a look at how those expectations lined up with reality.

1. Maturity of the Drone Industry

The overarching theme of the event this year for me is that the Industry really is maturing. It's certainly moved on from the 'powerpoint' enthusiasm of the past few years that simply called out all the cool things commercial drones could do. That's been replaced with a healthy dose of realism detailing what is commercially & operationally viable today, what we can expect in the next few years as well as what simply is not feasible.

Now, this does depend on the specific Industry use case. If you are a fan of the Gartner Hype Cycle mode, then Industry use cases such as Inspection of Wind Turbines, Transmission Towers, Telecoms Towers, Monitoring Vegetation etc. are certainly on the upwards 'Slope of Enlightenment'. Whereas use cases related to Drone Delivery & BVLOS are either rapidly ramping over the "Peak of Inflated Expectations" or already hurtling down towards the "Trough of Disillusionment". All of it proves that this Industry is just getting started.

2. New Industry use cases

The majority of the proven use cases at the event this year were based on inspection use cases that had previously been established, although these use cases employed ever better sensors and improved image processing algorithms to provide more efficient & cost-effective results.

A number of Chinese Drone Companies were showing drones for precision crop spraying, using a drone as a Mobile Network 'cell tower'. There were some very large drones with gas-powered engines that can provide much heavier payload capabilities.

Specific to the Energy Industry, two new use cases stood out to me...

- Hight Altitude Drones – There was a great deal of talk about large, fixed-wing drones that can be deployed at high altitude, which can stay in position for weeks/months at a time and remain out of the way of commercial aircraft.

- Measuring Metal Fatigue –Industry best practice today is to do physical contact based metal/structure testing to get accurate results for thickness & internal defects. So what RoNik Inspectioneering B.V. has developed is really innovative. To be continued...https://www.expouav.com/news/latest/5-things-i-discovered-at-commercial-uav-expo-europe/?utm_source=informz&utm_medium=email&utm_campaign=newsletter&utm_content=newsletter

The Cost of Carelessness: Operator Sentenced in Space Needle Incident Miriam McNabbon: May 24, 2018

Seattle's Space Needle seems to attract drones, and it seems that officials have decided enough is enough. Seattle lawmakers pushed for drone regulations back in 2014 when a drone video of the Space Needle went viral. Since then, Seattle has had other incidents: 2015 saw a crash at the Gay Pride parade, rendering one woman unconscious; another drone crashed into the city's giant Ferris Wheel that same year.

On New Year's Eve, December 31 of 2016, a drone crashed into the monument, and fell onto a platform. That operator, 20-year old Cole Kelley, was sentenced on Tuesday. While Kelley won't have to serve jail time, part of his sentence is that he must forfeit his drone and agree not to fly in future.

Kelley was in clear violation of FAA rules, flying over 400 feet in altitude. He was given a 364-day sentence, suspended; and a $5,000 fine, with all but $250. suspended. While a $250. fine is not extreme, the demand that Kelley forfeit his drone and lose his right to fly was a surprise to some in the industry. The fact that Kelley was prosecuted makes the FAA's position clear: there will be a cost for carelessness when flying drones. https://dronelife.com/2018/05/24/the-cost-of-carelessness-operator-sentenced-in-space-needle-incident/

This Huge Construction Project is Surveyed by Drones – Without Human Pilots Miriam McNabbon: May 22, 2018

The largest port project in Israel, Haifa's new "Gulf Port" is large and complex. The mapping and surveying of this project will be handled in part by drones without a human pilot.

"Airobotics, the Israeli startup that built the world's first fully automated drone, announced today its partnership with Shapir-Ashtrom to survey the construction of Haifa's new seaport, "Gulf Port", intended to further develop Israel's coastline areas, and increase maritime traffic and international commerce".

"Within eight hours of drone mission completion, Airobotics delivers orthophotos to the customer, on a daily basis. The company produces high-resolution aerial visuals from data that's automatically collected and measured using hundreds of thousands of surface points to create an accurate visual model instead of traditional humanly operated surveying techniques that measure only hundreds of points."

Airobotics' full automation overcomes limitations posed by manually operated drones, by having the capability to fly at high altitudes, without maintaining a line of sight, and interfering with construction infrastructure, including cranes and large equipment.
https://dronelife.com/2018/05/22/huge-construction-project-surveyed-by-drones-without-human-pilot-airobotics/

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FAA must bolster drone risk management efforts: GAO Gloria Gonzalez 5/24/2018

The Federal Aviation Administration should improve its risk management efforts related to drone safety, according to a report by the U.S. Government Accountability Office.

FAA's information on the extent of unsafe use of small unmanned aircraft systems in the national airspace system is limited, according to the GAO report published Thursday. Although the agency collects data on several types of safety events involving small UAS, the accuracy and completeness of the data are questionable.

The FAA is taking steps to improve its data, including developing a web-based system for the public to report any drone sightings perceived to be a safety concern and surveying UAS users on their operational activity, but the agency did not have time frames for completing these efforts, according to the report. The FAA is also evaluating technologies for detecting and remotely identifying UAS, which could improve data on unsafe use.

 "Improved risk management practices would help FAA determine whether additional actions are needed to ensure the safety of the national airspace and provide FAA and other decision makers with confidence that FAA is focusing on the most critical safety risks posed by small UAS," the report said.
http://www.businessinsurance.com/article/20180524/NEWS06/912321520/Federal-Aviation-Administration-must-bolster-drone-risk-management-efforts-GAO

Smallsats driving innovation in propulsion technologies Jeff Foust — May 24, 2018

Alexander Reissner, CEO of Enpulsion; Andy T. Kieatiwong, founder and CEO of Additive Rocket Company; and Patrick R. C. Neumann, director and chief scientist of Neumann Space, discuss spacecraft propulsion technologies on a May 23 panel.

PASADENA, Calif. — Technological advances have opened up a wide range of propulsion options for satellites, but companies developing those systems don't expect a single approach to become dominant.

Enpulsion has developed an electric propulsion system called the IFM Nano Thruster that can fit within a one-unit cubesat form factor. The propulsion system can be used as building blocks for a larger propulsion system, which he said can alter satellite design.

Neumann Space, an Australian company, is developing a different electric propulsion system that can use solid materials, like metal, for fuel in an arc thruster that can operate at low voltages.

Additive Rocket Corporation is focused on chemical propulsion rather than electric propulsion, but using new technologies to manufacture engines. That includes the use of additive manufacturing as well as "generative design" tools that can result in systems for moving propellants that can look more biological in nature, like tree roots or blood vessels, that are more efficient than standard approaches. http://spacenews.com/smallsats-driving-innovation-in-propulsion-technologies/

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South Carolina prisons will use drones to monitor inmates May 27, 2018 Feilidh Dwyer

The AP reports that South Carolina justice officials have revealed plans to use small UAVs to remotely monitor inmates at prisons.

The drones, the first of their kind for American prisons, will be tasked with curtailing the influx of drugs and cellphones which frequently make their way over prison walls and into the hands of prisoners.

Officials have hired two former military veterans to pilot the new drones. The men will tour around the state's 21 facilities, fly their crafts a height of around 400 feet and use their video screens to monitor what's going on. At such a high altitudes, prisoners will not necessarily know the drones are above them.

The new crime-fighting drones are equipped with heat-sensing and night-vision capable cameras. Additionally, they are able to detect when a prisoner ventures into a prohibited area which is often an indication of attempting to smuggle packages over prison fences during the night.

If the contracted drone pilots see anything suspicious – they will report it to the local prison guards. They may also be able to detect the initial signs of prison riots and can notify guards to intervene. https://www.wetalkuav.com/south-carolina-prisons-use-drones-monitor-inmates/?utm_source=WeTalkUAV&utm_campaign=3c6f7d24a1-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_1d410cb84d-3c6f7d24a1-83642867

NASA plans to use rotorcraft UAV to scout Mars! May 26, 2018 Thomas Luna
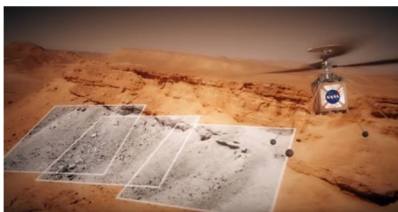
NASA announced plans to launch a rover and a rotorcraft called Mars Helicopter to the Red Planet in July 2020. While the rover explores and collects samples on the surface of Mars, the Mars Helicopter will be used to scout surrounding areas and possibly provide access to locations unreachable by ground travel. The rover and Mars helicopter are estimated to reach the Red Planet by February 2021.

The Mars Helicopter will fly missions autonomously, but the rotorcraft UAV is also designed to interpret and receive commands. The rotorcraft UAV will be used to see beyond hills, increasing

exploration efficiency. The Mars Helicopter is considered a "high risk, high-reward project;" even if something goes wrong, the Mars 2020 mission will still continue.

"We don't have a pilot and Earth will be several light minutes away, so there is no way to joystick this mission in real time," said Aung, Mars Helicopter project manager at NASA's Jet Propulsion Laboratory (JPL).

https://www.wetalkuav.com/nasa-plans-to-use-rotorcraft-uav-to-scout-mars/

United States to require license plates for drones? May 24, 2018 Feilidh Dwyer

The United States Federal Aviation Authority may soon require drone owners to display a visible license plate.

Current aviation law already requires US drone owners to register their craft with the FAA and place a means of identifying it somewhere onboard. This new rule would be taking things one step further.

"This action would require small unmanned aircraft owners to display the unique identifier assigned by the FAA upon completion of the registration process on an external surface of the aircraft."

The idea behind the move is it would make it far easier for authorities to track down people who are up to no good. Precise details of exactly what the new rules will entail and how much it will cost the government to administer such a program are thin on the ground. At present the rule is only at proposal stage. You can view the information currently known about the law on the US General Services Administration website. https://www.wetalkuav.com/united-states-require-license-plates-drones/

Japan "to allow rural BVLOS drone delivery flights by year end" May 25, 2018 Philip Butterworth-Hayes UAS traffic management news

Transport Topics (http://www.ttnews.com/articles/drone-deliveries-ready-soar-japan-issues-linger) reports that the government in Japan is this year preparing to deregulate its drone laws to allow beyond visual line of sight drone deliveries to rural areas.

According to the news site: "After Prime Minister Shinzo Abe's announcement in 2015 that Japan will deregulate drone flights in three years, the government is expected to ease rules this year so drone pilots can fly multi-copters even without visual tracking, a safety regulation that requires flights made by unmanned aerial vehicles be monitored at all times.

Another news site (http://www.thedrive.com/tech/19797/japan-to-end-beyond-visual-line-of-sight-regulations-by-end-of-2018), in a story on March 30 reported that:

"According to *The Japan Times*, Japan's transport and industry ministries announced new rules on Thursday, with plans of implementation scheduled for the end of 2018. BVLOS drone missions will be permitted, without the need of an operator maintaining visual line of sight, as long as the flight's safety can be guaranteed remotely via cameras and sensors. How exactly they intend on ensuring such missions is yet to be clarified, but there are certainly enough proponents of this regulation to be altered or removed for this to be a victory for many." https://www.unmannedairspace.info/uncategorized/japan-allow-rural-bvlos-drone-delivery-flights-year-end/

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This VTOL UAV carries passengers and can fly where helicopters can't! May 28, 2018 Thomas Luna

Tactical Robotics created a Vertical Take-Off and Landing UAV capable of evacuating two passengers or delivering cargo up to 1,100 pounds. The VTOL UAV is called Cormorant, and its compact frame and flight design makes it unlike anything available. Instead of featuring an overhead rotor, like what helicopters use, Cormorant is designed with concealed, internal-lift rotors, making it ideal for flying to areas unreachable by helicopter. Cormorant was initially built to deliver cargo and

extract wounded soldiers off battlefields, but its versatile design also allows it to be used for civilian applications.

It's designed to meet FAA manned helicopter safety standards, but Cormorant can be flown autonomously or by remote. The size of the 1.5-ton class VTOL UAV can be compared to a large delivery van. It is powered by turbine and electric propulsion, allowing a top speed of about 111 mph. Cormorant is designed to withstand wind gusts up to 40 knots, and it can move sideways without rolling. Tactical Robotics' patented technology allows the VTOL UAV to fly for up to 2.6 hours, so it can transport food, water and medical supplies with ease.

Besides military applications, Cormorant can be used in emergency situations like fire-fighting or delivering cargo in response to disasters.

https://www.wetalkuav.com/this-vtol-uav-carries-passengers-and-can-fly-where-helicopters-cant/

Drones predicted to give British economy a £42bn lift by 2030

Drones predicted to give British economy a £42bn lift by 2030 Gwyn Topham @GwynTopham 28 May 2018

Drones spraying pesticides in China are an example of their cost-saving commercial usages.

Using drones to transform working practices could boost Britain's economy by £42bn by 2030, research claims.

Increased use of drones, in sectors from construction or defence to energy or logistics, will employ hundreds of thousands of people and lift GDP by almost 2%, according to a report by accountants PwC.

While pilots and police have often viewed drones as a problem, the report predicts 76,000 unmanned aerial vehicles will be in UK skies by the end of the next decade for commercial or public use, saving billions in efficiencies. PwC predicts cost savings of £16bn annually through their use and estimates that in the long run there will be 628,000 people working in the drone economy, potentially in more highly skilled jobs overall, including building and programming the devices. https://www.theguardian.com/business/2018/may/29/drones-predicted-to-give-british-economy-a-42bn-lift-by-2030

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Law enforcement agencies turning to drones to fight crime John Seewer | AP May 28, 2018

Austin Fire Department Capt. Greg Pope, left, and firefighter Coitt Kessler demonstrate flying a DJI Inspire 1 drone at the Austin Fire Department Training Academy in Austin, Texas

TOLEDO, Ohio — No longer a novelty, drones are becoming an everyday tool for more police and fire departments. The number of public safety agencies with drones has more than doubled since the end of 2016, according to data collected by the Center for the Study of the Drone at New York's Bard College.

The center estimated that just over 900 police, sheriff, fire and emergency agencies now have drones, with Texas, California, and Wisconsin leading the way. Some believe they will change policing much like laptops in patrol cars, two-way radios and K-9 units.

"With this new environment we're in with active shooters and mass shooters, you can be all over a school campus and see everyone who's running out," said Grady Judd, a Florida sheriff, who this year used money from drug seizures to buy 20 drones to cover all of Polk County night and day.

He stressed that the drones will be used only in emergency situations and not to spy on people. About a third of states, including Florida, require police to get a warrant before using drones in a criminal investigation. https://www.washingtonpost.com/national/law-enforcement-agencies-turning-to-drones-to-fight-crime/2018/05/28/9ee02b12-6283-11e8-81ca-bb14593acaa6_story.html?utm_term=.24abc88c6b34

Army Looks to Industry for Innovation in Manned-Unmanned Teaming Dan Parsons May 25, 2018

An Apache helicopter, which the Army wants to team with drones to fill the armed scout role.

In keeping with the U.S. Army's new spirit of outreach to industry, the Service wants to know what the private sector can do to better team drones with manned aircraft.

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The Army is trying to determine what products, research, operational concepts and mission support exists that could enhance existing manned-unmanned teaming concepts, according to a notice published May 17 on the government's contracting website.

Manned-unmanned teaming, or MUM-T, has been a focus for the Army since it decided to retire the OH-58D Kiowa Warrior armed scout helicopter

An RQ-7 Shadow UAS.

Both the next-generation combat vehicle and future vertical lift development programs are seeking platforms that have innate MUM-T capability.

"MUM-T concepts of interest include those that operate in the ground, air, cyber, electronic warfare (EW) and/or multiple domains," the solicitation reads.

Finish reading this story on DefenseDaily. http://www.aviationtoday.com/2018/05/25/army-looks-industry-innovation-manned-unmanned-teaming/

The Drone Industry's Progress: New Whitepaper from Global Aerospace and DART Drones Miriam McNabbon: May 29, 2018

A new whitepaper from Global Aerospace and DART Drones offers insight on how the drone industry is moving forward to meet the challenges of wide scale implementation. "An Analysis of the Drone Industry's Progress and Focus on Safety" estimates the commercial drone industry at $500-$700 million currently – a bit less than the "well over" $1 billion analysts predicted in the heady, early days. Part of the problem identified is that the aircraft technology is evolving at a significantly quicker rate than the operating industry.

The visionaries are looking to push the current limits of the industry in package delivery, internet services, cross-country pipelines and search and rescue missions. A significant limitation is the lack of regulatory framework to support the use of unmanned aircraft when flying beyond visual line of sight.

The second half of the paper is focused on safety. With "near misses" being a constant feature and the media reporting events every week, it is only a matter of time before the first serious drone incident involving injury surfaces. Some larger commercial operators are calling for stricter regulations and enforcement of small operators. At least 75% of accidents are directly attributable to pilot error caused by the operator's poor knowledge of the system or

inappropriate flight response. https://dronelife.com/2018/05/29/the-drone-industrys-progress-new-whitepaper-from-global-aerospace-and-dart-drones/

Australian Army Deploys Black Hornet Nano UAS 28 May 2018 Mike Rees

The Australian Department of Defence has announced that unmanned aerial systems (UAS) will be rolled out to Australian Army soldiers in Brisbane following the completion of the Black Hornet Nano UAS Program.

The Australian Army is now the biggest user of Nano UAS in the world. It is also the first in the world to proliferate this technology to the conventional forces down to combat platoon level. The Black Hornet Nano UAS rollout is an $18 million project and is a key capability milestone for the Army as it continues to be a technologically advanced force. The Army operates several UAS, ranging from the Nano-sized reconnaissance Black Hornet to large, nine-hour endurance surveillance systems such as the Shadow 200.
http://www.unmannedsystemstechnology.com/2018/05/australian-army-deploys-black-hornet-nano-uas/?utm_source=Unmanned+Systems+Technology+Newsletter&utm_campaign=0b0f9bd36a-eBrief_2018_May_29&utm_medium=email&utm_term=0_6fc3c01e8d-0b0f9bd36a-119747501

Sky's the limit for the commercial UAV opportunities, report claims BUSINESS NEWS
EMMA CALDER MAY 29, 2018

The small unmanned aerial systems industry is set to storm ahead across a range of market verticals, a new industry report has claimed.

ABI Research, a market-foresight advisory firm, has revealed that from 2017 to 2027, the number of yearly shipments of drones will increase from 13 million to over 23 million, and collective revenues from platforms, accessories, and services will increase from $6 billion in 2017 to just under $70 billion by 2027.

Key potential verticals include construction, insurance, infrastructure inspection, warehouse logistics, and oil and gas. Other large market opportunities are to be found in agriculture and film & entertainment.

The market forecast provides a market share breakdown highlighting the major drone platform vendors. Shenzhen-based DJI leads the charge, for both consumer and commercial markets. Other major players include Aerovironment, Aurora Flight Sciences, Parrot, Kespry, Aeryon Labs, Yuneec Precision Hawk and Atlas Dynamics.

http://www.commercialdroneprofessional.com/skys-limit-commercial-uav-opportunities-report-claims/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-262571-Commercial+Drone+Professional+DNA+-+2018-05-29

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Hot tea direct to your doorstep: Indian startup creates chai delivery drone May 28, 2018 Feilidh Dwyer

An Indian food-delivery startup has developed a drone capable of transporting up to two litres of hot tea distances of up to 6 miles.

Based in Lucknow, a large city in Northern India, the startup is named Tech Eagle. The company, comprised of five friends and founded in 2015, will look to capitalize on India's passionate love for chai. Would-be tea drinkers living in Lucknow can order their hot beverage through Online Kaka, and the drone will fly to their address

India is the second largest tea producer in the world after China. Their long history of British colonialism helped the popularity of tea to spread throughout the continent. Today tea remains an extremely popular beverage and is consumed by Indians at a higher rate than coffee.

The developers plan to expand the range of their quadcopters drone from 6 miles up to 31 miles and are also working on a hexacopter which could be capable of carrying heavier loads. https://www.wetalkuav.com/hot-tea-direct-doorstep-indian-startup-creates-chai-delivery-drone/?utm_source=WeTalkUAV&utm_campaign=11ea22a41c-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_1d410cb84d-11ea22a41c-83642867

PENTAGON WILL EXPAND AI PROJECT PROMPTING PROTESTS AT GOOGLE TOM SIMONITE BUSINESS 05.29.18

Processing drone video was selected as Project Maven's first mission because the Pentagon's analysis tools can't keep pace with the tidal wave of high-resolution aerial imagery swamping US bases. The plan was to deploy machine-learning techniques that internet companies use to distinguish cats and cars to spot and track objects of military interest, such as people, vehicles and buildings.

The technology fielded under Maven can automatically annotate objects such as boats, trucks, and buildings on digital maps. This helps analysts with tasks like identifying targets or understanding a group's pattern of activity by reducing time spent scouring screens just to find objects of interest. The software deployed to bases also has features that let analysts help retrain the algorithms, by quickly tagging new objects of interest or flagging errors.

The project is beginning to grow. That includes deploying Project Maven's drone surveillance algorithms more widely. The initial system was developed for smaller drones that fly at relatively low altitudes, such as the 1.4-meter, 20-kilogram ScanEagle. Shanahan said his team is now "refining" algorithms for drones that fly higher, and will soon work on high-altitude surveillance aircraft. His slides depicted the 15-meter-long Global Hawk, which flies at up to 18,000 meters (60,000 feet) and carries sophisticated conventional and infrared cameras. Ultimately, the goal is to integrate Maven's algorithms onto drones themselves.
https://www.wired.com/story/googles-contentious-pentagon-project-is-likely-to-expand

NOAA, Oceans Unmanned and DJI Team Up to Save Entangled Whales May 30, 2018

 Every fall, pods of enormous humpback whales make their way towards Hawaii, where they can ride out the winter in warm waters of NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary. For centuries humans have watched this noble migration with awe and wonder. But today, an ever-growing number of these amazing animals are finding themselves in grave danger, entrapped in fishing gear and other marine debris.

Specialists from the National Oceanic and Atmospheric Administration have worked with local volunteers to help save the whales by launching small boats with trained teams to disentangle them while in the water. It's risky work, bringing people into close contact with the gigantic mammals. Knives on long poles work to cut free ropes that have sunk deep into the whales flesh. Last year, a volunteer was killed when a whale struck him.

Matt Pickett, a former NOAA sanctuary manager, is now the founder of Oceans Unmanned, a non-profit organization that facilitates the use of drone technology for marine conservation. Oceans Unmanned recently unveiled the freeFLY program, a new initiative designed to provide aerial support using small drones for large whale entanglement response efforts.

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"In the past, we had to get close to the whales at least three times," explains Pickett. "Once to figure out where the animal was entangled, once to cut them free, and once to make sure the job was done right and nothing was left behind."

With drones, the team can cut that down to just one step. Using small, remote-controlled quadcopters with powerful cameras they can do their initial assessment and final check. "It makes the entire process much safer for both the humans and the whales." http://uasweekly.com/2018/05/30/noaa-oceans-unmanned-and-dji-team-up-to-save-entangled-whales/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_05_30&utm_term=2018-05-30

Drone Aviation's FUSE Tether System Employed by Southern Arizona Law Enforcement May 30, 2018

Drone Aviation Holding Corp. a manufacturer of tethered drones and lighter-than-air aerostats, today announced that its FUSE Tether System was utilized in a first-of-its-kind application of tethered drone technology by the Oro Valley Police Department as part of its security and monitoring efforts at two major high school graduation ceremonies held in southern Arizona in May 2018.

During the two events, the Oro Valley Police Department operated a DJI Matrice 200 drone at an altitude of 150 feet for hours at a time. Uninterrupted power was provided by a ground-based generator. Utilizing the drone's optical camera, officers were able to monitor the venue's perimeter and the flow of people and traffic in and out of the school's facilities in real time.

The system has 200 feet of tether supporting 110-volt ground power sources. Users can increase drone flight time with uninterrupted power from the ground. Safety is enhanced by an onboard backup power pack and automatic tether tension management system. http://uasweekly.com/2018/05/30/drone-aviations-fuse-tether-system-employed-by-southern-arizona-law-enforcement/?utm_source=newsletter&utm_medium=email&utm_campaign=uasweekly_newsletter_2018_05_30&utm_term=2018-05-30

31May18

What Artificial Intelligence Is Bringing to the Commercial Drone Industry Lauren Elmore May 30, 2018

Drones may be a relatively new technology, but artificial intelligence (AI) is already taking the controls. Right now, though, AI has an even more important task than providing autonomous flight: processing data collected in the field and turning it into actionable insights.

Now, once a mission is set up in a flight app to capture all relevant areas, the operator can merely press a button and the drone will fly the mission. Processing the data collected, though, is more involved and requires stitching photos and manually picking out ground control points. Removing this step with AI will be groundbreaking for those who use drones in their businesses to gain insights.

Machine learning software is also able to identify and count different types of objects, and these rapidly developing technologies promise to automate what is currently a tedious, time-consuming job. In the short term, AI will continue to tackle the lowest-hanging fruit, automating the most basic and repetitive tasks.

In areas that require more complex decision-making, humans will remain in charge for the foreseeable future. Machine learning relies on refining methods as the system processes huge amounts of data. Because drone adoption is still in its infancy, the amount of data is the limiting factor.. https://unmanned-aerial.com/what-artificial-intelligence-is-bringing-to-the-commercial-drone-industry?utm_medium=email&utm_source=LNH+05-31-2018&utm_campaign=UAO+Latest+News+Headlines

Drone Delivery Canada Teams Up with Toyota Subsidiary Jason Reagan May 29, 2018

Drone Delivery Canada announced the partnership May 28 with Toyota Tsusho Canada Inc. – a subsidiary of the well-known Toyota Group. The effort will see TTCI participate with DDC's commercial pilot program in Canada for flight testing and development of international markets for drone delivery.

"This agreement with TTCI is expected to open international markets for us as a company," commented Tony Di Benedetto, CEO of Drone Delivery Canada. "We are confident drone

delivery services are the way of the future. This agreement with DDC will enable us to participate in this cutting-edge technology," said Hidetoshi Tada, President of TTCI.

For Toronto-based DDC, the agreement is another forward step in solidifying its positions as a top firm in the growing drone-delivery sector. American drone-delivery efforts have been hampered by FAA regulations – although the agency's recent UAS integration [announcement](#) may unleash further [delivery innovation](#). Fifty percent of the ten [projects](#) could get the go-ahead for development.

DDC faces fewer obstacles as a Canadian company and partnering with Toyota can only open up more doors internationally. https://dronelife.com/2018/05/29/drone-delivery-canada-teams-up-with-toyota-subsidiary/

Drone-delivered meals come to Shanghai, but they're dropped off by … a human? *Trevor Mogg May 30, 2018*

Hungry folks living and working in Shanghai's Jinshan Industrial Park can now fire up an app, choose their lunch or dinner, and have it delivered by … a human being. OK, let us explain.

The drone service isn't door to door. Instead, ele.me — the Alibaba-owned company operating the service — is using the technology to increase delivery speeds by flying meals along 17 pre-defined routes, bypassing busy roads that would ordinarily ensure your meal arrives late as well as cold. The industrial park covers an area of about 22 square miles and ele.me claims it can deliver meals within just 20 minutes of being ordered.

It works like this: You use the app to select a meal from one of 100 food outlets in the area. When the meal is ready, a delivery rider collects it and takes it a short distance to the nearest drone station. The drone carries the meal to the drone station nearest to your location. Another delivery rider takes the food to your door.

With a growing number of delivery companies grappling to find a workable drone platform that's both safe and efficient, ele.me's solution seems to fit the bill. With regulatory bodies worried about chaos in the skies, flying drones along fixed routes to drone stations seems like a logical approach until an effective drone air traffic control system can be devised. Other companies, Airbus among them, [are looking at similar setups](#) for package delivery by drone. Another bonus is that the system should prevent the rapid [offloading of delivery personnel](#).

https://www.digitaltrends.com/cool-tech/drone-delivered-meals-in-shanghai/?utm_source=sendgrid&utm_medium=email&utm_campaign=cool-tech

Drone rules made law to reduce threat to aircraft Samuel Gibbs 30 May 2018

From 30 July, drones will be banned by law from flying above 400ft and within 1km of an airport boundary, because of fears they could damage the windows or engines of planes and other aircraft during takeoff or landing.

From 30 November, pilots of drones that weigh 250g or more will have to register with the Civil Aviation Authority (CAA) and will be required to pass a safety test online. The number of near-misses between drones and aircraft has risen year on year, from six in 2014 to 93 in 2017, and the government has previously said new laws were needed to ensure drones were used safely and responsibly.

The aviation minister Liz Sugg said on Wednesday: "We are seeing fast growth in the numbers of drones being used, both commercially and for fun. Whilst we want this industry to innovate and grow, we need to protect planes, helicopters and their passengers from the increasing numbers of drones in our skies. These new laws will help ensure drones are used safely and responsibly." https://www.theguardian.com/technology/2018/may/30/drone-rules-made-law-to-reduce-threat-to-aircraft

The latest cover of 'Time' is composed of 958 Intel drones Timothy J. Seppala, @timseppala

The cover photo was shot by a drone, too.

Intel's latest drone trick is on the cover of *Time*. Err, it *is* the cover of *Time*. Allow me to explain. The magazine's most recent issue features special reports on UAVs, and rather than, say, featuring a photo of Intel's drone team on the cover, as *PetaPixel* notes, the publication's iconic red border and logo is made up of 958 of Intel's light-show drones themselves.

That number is slightly lower than the amount used in the Olympic opening ceremony earlier this year, but it's no less impressive. The swarm was 100 meters (around 328 feet) tall, and hovered over Folsom, Calif. for a moment before returning to earth. And to cap it all off, the

cover photo was shot by a drone itself -- a first in *Time*'s 95-year history.
https://www.engadget.com/2018/05/31/intel-drones-time-cover/

## Amazon May Make Drones That Communicate Using Lights and Music MARCO MARGARITOFF MAY 30, 2018

Amazon Technologies Inc. has filed yet another delivery drone patent.

The patent filing, published by the United States Patent and Trademark Office this week, describes warning sounds, maneuvers and projected text on the ground as methods of communication. The drone could communicate with first-time customers "by emitting a warning sound, a pleasant tune, or other audio."

Additionally, a spotlight could point at objects in the way of a designated drop-zone, and aerial maneuvers could let customers know that something's wrong (move your lawn furniture out of the way, please).
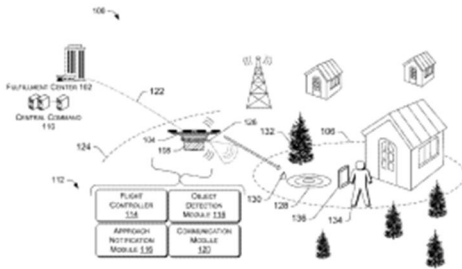
One of the more novel ideas presented in this recent patent filing is the possible implementation of a projector that would communicate with a customer and have the onboard camera visually record responses and commands. The projector would allow for the UAV to "project information and/or text on a surface," which would serve as a "request for the person to take a specific action."

A drone could also perform a "predetermined aerial maneuver during an approach to the destination or while above the property, which may be associated with a message (e.g. need a designated drop zone, need to remove obstacle, etc.) or action (e.g. landing soon, etc.)."

The embedded spotlight, too, would serve as an additional method facilitate delivery by literally shining a light on an obstacle in the UAV's way. Additionally, "the UAV may send a text-based message to a smartphone associated with an expected recipient of the package to notify the expected recipient that the UAV is arriving and will be depositing the package soon." That should give you extra time to clean up your yard for an easier delivery.
http://www.thedrive.com/tech/21180/amazon-may-make-drones-that-communicate-using-lights-and-music

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Experts Say Drones Pose a National Security Threat — and We Aren't Ready W.J. HENNIGAN May 31, 2018

Palestinians run to take cover as an Israeli drone fires tear gas grenades east of Gaza City during clashes between Palestinians and Israeli forces, on May 15, 2018, amidst protests marking 70th anniversary of Nakba -- also known as Day of the Catastrophe in 1948 -- and against the US' relocation of its embassy from Tel Aviv to Jerusalem.

Unlike military drones that can cost more than $15 million and look like small airplanes, mini quadcopters can be obtained for a few hundred dollars—and their capabilities are exciting the imaginations of bad guys. Criminals have used drones to drop drugs into prisons. Mexican smugglers have flown them above the border to spy on the movement of patrolling federal officers. ISIS used them to drop crude bombs on U.S. and allied forces in Iraq and Syria.

Perhaps the major lesson of 9/11 was to look for threats from unexpected places, especially overhead. Yet on drones, the federal response has been largely haphazard and behind the curve. The Pentagon is working to develop and deploy technologies to defeat drones and intends to spend $401.2 million on counter-drone initiatives this fiscal year. "We know that terrorists are using drones overseas to advance plots and attacks, and we've already seen criminals use them along and within our borders for illicit purposes," Department of Homeland Security Secretary Kirstjen Nielsen tells TIME. "We are working with Congress for the authorities needed to ensure we can better protect the American people against emerging drone threats." **http://time.com/5295586/drones-threat/**

Flying High Challenge embarks on quest to tackle public sentiment BUSINESS HEADLINE NEWSNEWS EMMA CALDER MAY 29, 2018

UAV industry leaders are looking to stamp out the public's fears about the use of commercial drones as the UK's airspace is filling up with more and more enterprise operators.

Nesta's Flying High Challenge, a programme designed to safely develop commercial drone use cases in five cities and regions, is examining public sentiment in a bid to progress the development of UAVs in the UK.

"The Vision Critical survey reported awareness of all drone applications to be low compared with awareness of uses of manned aviation. This doesn't appear to have changed much since, as Nesta's more recent poll from December 2017 found that only around 30% of respondents felt that they had a good understanding of drones and their uses."

The Department for Transport study found that use by the state, in particular the emergency services, is the most well-received, followed by use by commercial operators, while the use of drones by the general public tends to generate concern.

The findings are corroborated by Nesta's own poll, the Vision Critical poll and the RAS survey, with 91% of respondents supporting the use of drones for emergency response and 83% supporting police intelligence. That is compared to 81% in favour of infrastructure inspection and 78% for agricultural uses, and only 37% supportive of drones being used for leisure activities. http://www.commercialdroneprofessional.com/flying-high-challenge-embarks-quest-tackle-public-sentiment/?utm_source=Email+Campaign&utm_medium=email&utm_campaign=45819-263091-Commercial+Drone+Professional+DNA+-+2018-06-01