UAS and SmallSat Weekly News

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Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

14May22

AUTEL EVO LITE+ REVIEW: THE BEST NON-DJI CAMERA DRONE YOU CAN BUY May 8, 2022 Sally French News

There's another drone company that is able to stand up quite strong to DJI's consumer line of drones, Autel. And the Autel Evo Lite+ is the darling of the company's camera drone lineup.

Autel is pretty much the only company able to even compete with DJI, but it's proving to be a solid competitor. Autel this year put on sale its latest lineup of camera drones, the Autel Robotics EVO Nano and Lite Drones, which come in base or "+" versions with upgraded specs.

And its Autel Evo Lite+ drone stands out given how it's able to bridge the gap between some of the Mavic 3's most swoon-worthy features, but at a price point much closer to the DJI Mini 3 Pro, which stands out for its relatively low, $759 price tag.

I managed to get my hands on an Autel Evo Lite+ drone so I could test out all its features. Among the highlights:

- 1-inch CMOS sensor
- 6K/30fps video
- 40 minutes of flight in a single charge
- Adjustable aperture, f/2.8-f/11
- Defog mode
- Transmission range of 7.4 miles
- Ultra wide angle obstacle avoidance cameras, allowing for a front field of view of 150 degrees
- Four-axis gimbal to shoot vertical video (designed for posting to social media)

All that for a price of $1,249, which is a steep discount relative to the $2,199 DJI Mavic 3, which is currently DJI's most expensive prosumer-minded drone available.
https://www.thedronegirl.com/2022/05/13/autel-evo-lite-review/

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

MAY 11, 2022

Another AAM Company Goes Public Through a SPAC Merger MAY 11, 2022 Juan Plaza

On April 25, the principals at Eve, the Embraer spinoff trying to develop the first commercially viable air taxi or eVTOL (electric vertical takeoff and landing) craft, held a public webinar in which they elaborated on their plans to go public through a merge with a SPAC (Special Purpose Acquisition Company) in Q2 this year.

Eve co-CEOs Andre Stein and Jerry DeMuro held a Zoom session sponsored by IPO Edge in which they went to great lengths to describe not only their technology but the process of turning the company into a publicly traded enterprise.

"Even though the SPAC marketplace today is not in the best possible shape, we have determined that it's the best way to take Eve public," said DeMuro. "The fact that Eve is supported and openly backed by the third largest aircraft manufacturer in the world, Embraer, gives the company an edge that none of our competitors have." Said Stein, "We were born out of EmbraerX, the disruptive technology accelerator of Embraer, and we plan to continue the tradition of being leaders in our respective market niche."

Embraer is widely considered to be the leader in the regional jet market with the e-jet family and in a specific segment of the business jet sector with the Praetor and the Phenom. We can only guess the collaboration and the contributions that the Embraer engineers and designers poured into the Eve design, but it is obviously a great advantage over startups that are not supported by aerospace giants. https://www.commercialuavnews.com/another-aam-company-goes-public-through-a-spac-merger?mkt_tok=NzU2LUZXSi0wNjEAAAGEWGiUDWTVKLte6KdJ9kh4t1KW8fu1E0a7qPBNVfTcWf800nkB3-XZQWLQpfm3WwSZcGjc9hGMqSOGBLdnEdbFsvi7p2nFr1fQHe0Oblh7NV3ooA

Renault's new delivery solution combines electric van, bike, and drone Bruce Crumley - May. 13th 2022

A drone has been factored into Renault's all-electric delivery solution alongside a battery-powered van and e-bike to permit companies to transport goods to bustling city centers without leaving a measurable carbon footprint.

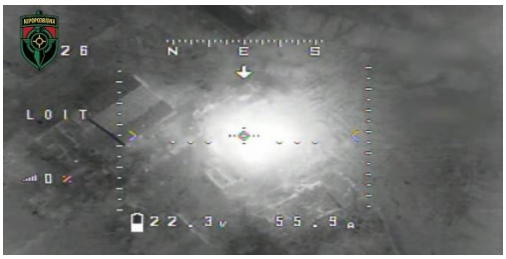
Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

The van is used to drive goods warehoused in outer areas to get them closer into city centers, where traffic and parking often become a problem. From there, the e-bike is loaded with parcels for last-mile(s) transport to several destinations in the same zone. In cases where orders involve medication, fragile, or urgently needed goods – or to places with difficult road access – the drones are deployed for quick flights to make deliveries.

The sustainable concept was designed and commissioned by Renault Trucks and rolled out by its UK and Ireland division. It combines a 3.8-ton, 33kWh battery-powered E-Tech Master van, an eBullitt electric cargo bike, and a delivery drone manufactured by English specialist UAVTEK. That relatively short-hop aerial option can transport up to two kilos of payload, with the e-bike taking on a maximum of 100 kilos. https://dronedj.com/2022/05/13/renaults-new-delivery-solution-combines-electric-van-bike-and-drone/#more-80841

Video shows self-made Ukraine drone dropping grenades to waste Russian tank

Bruce Crumley - May. 13th 2022



New video evidence of how smaller drones are significantly strengthening Ukraine's efforts to repel invading Russian forces has surfaced showing a self-made UAV using simple grenades to take out a $3 million Russian tank.

The video was posted this week by the Aerorozvidka unit, which has earned quite a reputation for itself by assembling and using relatively small, largely self-constructed drones to support Ukraine's army battle Russian troops. "Our fighters destroyed the Russian T-90 'Vladimir' tank in the southern direction of the front. Its price is $ 2.5-3.5 million," the text accompanying the Aerorozvidka video says. "We continue to work for victory!"

According to a variety of reports on the group and its most recent strike, Aerorozvidka transitioned away from using commercial drones it had or received from donors abroad to building its own craft, known as the R18. It loads those with Soviet-era or other relatively cheap munitions to attack – and fairly frequently destroy – Russian tanks worth millions of dollars, and previously considered among Moscow's most formidable military advantages. https://dronedj.com/2022/05/13/video-shows-self-made-ukraine-drone-dropping-grenades-to-waste-russian-tank/

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

Drones to deliver needle-free insulin injectors to Ukraine's conflict zones Ishveena Singh - May. 13th 2022

According to the International Diabetes Federation, there are more than 2.3 million people with diabetes in Ukraine, i.e., over 7% of the population. Of these, many are Type 1 diabetics that need daily doses of insulin to survive. But as a recent *CNN* report points out, attempts to send crucial supplies to conflict zones have been unsuccessful.

Revived Soldiers Ukraine, a nonprofit dedicated to providing aid to the people of Ukraine, has now decided to use Canada-made delivery drones to supply needle-free injection devices to the country's most dangerous and hard-to-reach areas. Pre-loaded with insulin, each injector can be used 5,000 times without the risk of needle-stick injury or cross-contamination. These "InsuJet" injection devices are developed by NuGen Medical Devices.

The delivery drones, meanwhile, are manufactured by Draganfly and can carry up to 35 pounds of medical supplies. Payloads can be mounted either on the top or bottom, depending on whether ease of access or quick-release mechanism is a priority for the recipient.
https://dronedj.com/2022/05/13/drones-insulin-injectors-ukraine/

16May22

Draganfly First Quarter Earnings: Revenues are Growing in Scaling Drone Industry Miriam McNabb May 13, 2022

Draganfly Inc., a manufacturer of commercial unmanned aerial vehicles and drone services, announced its first quarter results on May 10, 2022. The results are positive:

- Revenue for the first quarter was $2.04 million, an increase of 32.8% year-over-year and 25% quarter-over-quarter.
- Gross margin percentage was 39.9% compared to 33.4% in Q1 2021.
- Net loss excluding non-cash charges was $5.83 million compared to a $3.89 million loss in Q1 2021.
- Cash balance at the end of March was $19.6 million.

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

During the quarter, Revived Soldiers Ukraine placed orders for Draganfly's Medical Response and Search and Rescue Drones. The initial order was for 10 units with a total order size of up to 200 units: with each drone priced at over $30,000, the order represents significant revenue for the company. https://dronelife.com/2022/05/13/draganfly-first-quarter-earnings-revenues-are-growing-in-scaling-drone-industry/

Skydio Youth Fly Day: Inspiring the Next Generation of Women Pilots and Engineers Miriam McNabb May 16, 2022 by DRONELIFE Staff Writer Ian M. Crosby

Drone manufacturer Skydio recently held its Youth Fly Day, an event that brought together 75 Freshman students from ICA Cristo Rey All Girls Academy of San Francisco for a hands-on learning experience with drones.

The Skydio team held Youth Fly Day to help inspire the next generation of women pilots and engineers. According to the Federal Aviation Administration's annual statistics, women made up only 7.6% of registered Remote Pilots at the end of 2021. Building off the previous year's Women's Fly Day, Skydio provided a space for young women to engage with drones and learn more about the technology.

Students traveled from station to station, each offering information on a variety of topics ranging from the physics of drones and uses to photogrammetry scanning and cinematography. The students were also given the opportunity to fly the drones, receiving hands-on experience such as tracking and 3D Scan. The event also included a career panel with many of the women of Skydio offering their advice and insight from their own experiences in STEM careers in the drone industry. https://dronelife.com/2022/05/16/skydio-youth-fly-day-inspiring-the-next-generation-of-women-pilots-and-engineers/

SpaceX launches Starlink satellites from California May 13, 2022

VANDENBERG SPACE FORCE BASE, Calif. (AP) — A SpaceX rocket carried 53 satellites for the Starlink internet constellation into orbit.

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

The Falcon 9 booster lifted off from Vandenberg Space Force Base at 3:07 p.m., and minutes later the first stage landed on a droneship in the Pacific Ocean while the second stage continued toward low Earth orbit, and the satellites were successfully deployed.

Starlink is a space-based system that SpaceX has been building for years to bring internet access to underserved areas of the world.

Hawthorne, California, SpaceX has hundreds of Starlink satellites orbiting Earth at an altitude of 340 miles. https://apnews.com/article/space-launches-spacex-california-pacific-ocean-bf47d8ccd1fb808aba7bfeb05eb5eacd

MALTA GRANTS ITS FIRST EUROPEAN DRONE OPERATOR LICENSE May 13, 2022 Sally French

With its rugged coastline framed with indented harbors and bays, as well as sandy beaches and rocky coves, Malta is among the best places to be a drone photographer. But the tiny country in the central Mediterranean is set to become a promising outpost for commercial drone operations.

Transport Malta, which is the authority for transport, issued its first ever EASA Light UAS Operator Certificate — and it's also the six such certificate to be issued in Europe. Such a certificate allows the holder to self-authorize flight operations of certain drone flights — including many types of beyond visual line of sight operations — and is considered the highest authorization achievable under European drone regulations.

Birkirkara, Malta

The certificate was issued to SwissDrones, which is a manufacturer of long-range unmanned helicopter systems, and was issued in accordance with European Regulation (EU) 947/2019. With it, SwissDrones will be able to self-authorize flight operations of its SDO50 V2 unmanned helicopters across European Union Aviation Safety Agency countries.
https://www.thedronegirl.com/2022/05/16/malta-swissdrones/

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

AAC secures AFWERX contract for tactical UAS May 2, 2022

The U. S. Air Force selected Hampton, Virginia-based **Advanced Aircraft Co.** (AAC), a developer of long-endurance hybrid-electric unmanned aircraft systems, for its **AFWERX** program developing small unmanned aerial systems. Through a competitive awards-based program, the Small Business Innovation Research Open Topics program enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization.

AAC's hybrid advanced multirotor (HAMR) UAS incorporates a configuration with a hybrid gasoline-electric propulsion system for extended endurance and multiple, simultaneous payload capabilities, and can be optimized for defense applications and mission profiles.

"Our HAMR UAV's high-performance, efficient propulsion system, rugged aerodynamic airframe, and ease of serviceability in the field make it ideally suited for demanding military operations in the most inhospitable environments," says Bill Fredericks, ACC founder.

With a flight endurance up to 3.5 hours – 6x longer than a conventional battery-powered multirotor aircraft – the HAMR systems employ line replaceable units for rapid in-the-field servicing. Operators can choose commercially available optical or infrared cameras and LiDAR systems or standard payloads for defense applications including electro-optical, infrared, laser, and communications systems. https://www.aerospacemanufacturinganddesign.com/article/aac-secures-afwerx-contract-for-tactical-uas/

DroneUp Chooses Watts Innovation

DroneUp has chosen our new PRISM Sky aircraft as the platform of choice for their next generation delivery drones.

After working with the team at DroneUp closely for some time now, we believe in their mission and admire their abilities to continually push the boundaries of what is possible in the drone delivery space.
Our engineering team has been working day and night to ensure that this platform exceeds every expectation with regards to performance, safety and reliability. This is just the beginning of what's about to be an extremely

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

exciting time in unmanned aircraft history.
https://www.linkedin.com/posts/godroneup_dronedelivery-suas-drone-activity-6929502350638276608-qlGu/?utm_source=linkedin_share&utm_medium=ios_app

Nordic Unmanned to acquire Belgian drone-in-a-box company DroneMatrix

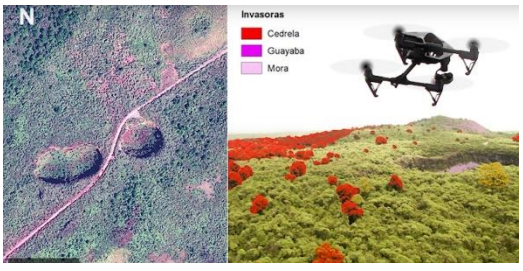
Ishveena Singh - May. 16th 2022

Nordic Unmanned will initially secure a majority stake in Belgium's DroneMatrix through share purchase and an equity issue, with an understanding that the remaining shares will be acquired based on a pre-agreed performance-based valuation matrix within the next three years. This partnership will enable both companies to scale their commercial offerings through new services and solutions.

DroneMatrix's portfolio includes autonomous drones, intelligent docking stations, and proprietary AI-based software allowing autonomous drones to detect and follow objects. Company CEO Lander Vanwelkenhuyzen is positive that joining hands with Nordic Unmanned will allow DroneMatrix to realize future ambitious growth plans. The acquisition agreement also ensures that the current management team will continue to oversee the operations and the future development of the DroneMatrix.

DroneMatrix is currently valued at €3 million. To obtain control of 55% of the company, Nordic Unmanned will complete a share purchase of €0.975 million at end of Q2, while a €1.5 million equity contribution is likely to be fully paid before the end of 2022.
https://dronedj.com/2022/05/16/nordic-unmanned-dronematrix/

After rats, Galápagos Islands drones combat invasive plants Bruce Crumley - May. 16th 2022



Can drones help root out invasive plant species on the Galápagos Islands with the same effectiveness they eradicated rats that had threatened native birds with extinction? That's what the Charles Darwin Foundation is hoping in deploying aerial assets to combat blackberry, guava, and other flora that now risk crowding out indigenous species.

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

That effort by the Charles Darwin Foundation begins with aerial mapping of highland areas of several Galápagos Islands, particularly Santa Cruz. Pilots fly DJI Inspire 1 and Mavic Pro drones over expanses of growth to collect geo-referenced, highly detailed imagery of plant life that – with the help of satellite photos – enables full mapping of various species.

The resulting models are used to study where and how fast invasive flora is growing, and vastly diminishing the presence of native plants like Scalesia pedunculata and Miconia robinsoniana as it does.

The project follows an earlier and ultimately successful deployment of drones on two Galápagos Islands whose native bird species had been threatened by the proliferation of invasive rats. That two-step campaign began in 2019, first using drones to identify areas where the rodents were most abundant, then deliver reserves of specially developed rodenticide that only attracts rats.

In the second phase, UAVs were used to replenish bait stations in coastal areas, which were designed to eliminate both surviving rats and any swimming over from neighboring islands. Full eradication was declared in June of last year. https://dronedj.com/2022/05/16/after-rats-galapagos-islands-drones-combat-invasive-plants/#more-80902

Joby Aviation: No Type Certification Delays Expected from FAA's Modified Approach Thom Patterson May 12, 2022

Joby Aviation said Thursday it was "making excellent progress" in the build of its first production-intent air taxi.

Uber-backed electric air taxi developer Joby Aviation (NYSE: JOBY) told investors Thursday it expects no delays because of the FAA's modified regulatory approach to type certification. In the company's quarterly earnings conference call, Joby reported a $62.3 million net loss in Q1 2022, an increased loss of $20.8 million compared to the same period last year.

"We remain on track to meet our operational goals and spending guidance for the year," said founder and CEO JoeBen Bevirt during a quarterly investors conference call.

Bevirt noted that the FAA has said all development work done by current eVTOL type certification applicants remains valid in the wake of the FAA's regulatory comments earlier this week. "We are in active conversations with them about the most expedient route to certifying

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

our aircraft," he said. https://www.flyingmag.com/joby-aviation-no-type-certification-delays-expected-from-faas-modified-approach/

UAS Business Accelerator Program Accepting 2022 Entries Phoebe Grinter / 17 May 2022

GENIUS NY – the world's largest business accelerator focused on Uncrewed Aircraft Systems (UAS) – is looking for the five teams which will participate in the sixth round of the year-long program.

Airial Robotics' GT20 Gyrotrak

The in-residence accelerator, operated out of Syracuse, New York, will invest more than $3 million in five companies, including a $1 million grand prize.

Since 2017, GENIUS NY has invested more than $15 million in 26 startup companies who have gone on to raise more than $90 million in follow-on funding and scale and grow operations. Some notable participants from GENIUS NY include Fotokite, DroneSeed, Airial Robotics and Airtonomy.

GENIUS NY can combine high value investments in companies at the beginning of the program while also offering participants industry mentors, stipends, resources, programming and networking opportunities. Teams have access to the region's hi-tech ecosystem that consists of emerging UAS technologies, 5G, quantum computing, artificial intelligence, and autonomy.

Teams benefit from expertise in UAS operations, research and integration; they can utilize assets like the New York UAS Test Site at Griffiss International Airport and the 50-mile Beyond Visual Line Of Sight test corridor that facilitates UAS testing and commercial drone operations. The test site is managed by GENIUS NY partner NUAIR.
https://www.unmannedsystemstechnology.com/2022/05/uas-business-accelerator-program-accepting-2022-entries/?utm_source=UST+eBrief&utm_campaign=312d722d45-ust-ebrief_2022-may-17&utm_medium=email&utm_term=0_6fc3c01e8d-312d722d45-119747501&mc_cid=312d722d45&mc_eid=0d642a9d48

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

Scorpio, TEKEVER to expand maritime drone use in shipping Bruce Crumley - May. 17th 2022

Leading European maritime drone surveillance and data collection company TEKEVER has announced its partnership with global shipping giant Scorpio to accelerate deployment of UAVs for security and other operations above the seas.

Portugal-based TEKEVER has rapidly built a reputation as a maritime drone specialist, boasting government and public agency clients in the European Union that use the craft in surveillance work against drug and human traffickers, boats violating pollution and fishing rules, and even pirates. Now, in its pairing with Scorpio Investment Holding Ltd., the company hopes to further broaden deployment of UAVs in commercial shipping.

TEKEVER manufactures several types of maritime drones, including smaller craft assembled on-site, and larger fixed wing larger versions for longer missions. Its UAVs can fly up to 20 hours continuously, carrying onboard tech that includes cameras, radar, or cellphone detectors.

The drones are built around an artificial intelligence-centric platform that combines Edge AI, satellite communications, and cloud computing to supply clients with real time information and advanced analytics, using globally accessible web and mobile interfaces. The European Maritime Safety Agency and the UK Home Office are among government agencies relying on TEKEVER's drones for data gathering, intelligence, and general surveillance missions. https://dronedj.com/2022/05/17/scorpio-tekever-to-expand-maritime-drone-use-in-shipping/

Fortem develops portable anti-drone tech for Ukraine defense Bruce Crumley - May. 17th 2022

Utah-based Fortem announced the further miniaturization and simplification of its anti-drone products to provide easier portability and use by Ukraine troops. The adaptation process was carried out in close cooperation with the Ukrainian Ministry of Defense, to enhance the country's ability to detect and eliminate smaller Russian UAVs.

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

Prior to that redevelopment work, Fortem had been supplying Ukraine with its SkyDome portable anti-drone solution. That command tech interfaces with the DroneHunter UAV that autonomously searches and neutralizes hostile craft in both day and nighttime deployment. Fortem had also provided Ukraine on-site training and support with those assets.

Fortem officials described the move of tailoring its tech to the small, lightweight, and quickly deployed needs of Ukraine forces as a logical step in adapting its anti-drone to that specific conflict. https://dronedj.com/2022/05/17/fortem-develops-portable-anti-drone-tech-for-ukraine-defense/#more-80962

TotalEnergies launches global drone methane emissions detection program

Ishveena Singh - May. 17th 2022

The global campaign will use a greenhouse gas measuring technology called Airborne Ultralight Spectrometer for Environmental Applications (AUSEA) that TotalEnergies has developed in collaboration with the French National Research Center for Scientific Research and the University of Reims Champagne Ardenne.

AUSEA leverages a drone-mounted miniature dual sensor, capable of both detecting methane and carbon dioxide emissions and identifying their source. The company says drone inspections will supplement measurements taken using traditional techniques such as infrared cameras, ground sensors, and satellite data.

Drone-based methane emissions detection has already proven successful at test sites in Nigeria, Italy, the Republic of the Congo, and the Netherlands. A global rollout campaign is now underway with African offshore sites and South America having received the technology, which will reach Europe this summer.

Drone inspections will help TotalEnergies inch closer to its goal of reducing methane emissions by 50% at company-operated sites by 2025 and by 80% by 2030.
https://dronedj.com/2022/05/17/totalenergies-drone-methane/#more-80898

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

18May22

US AIR FORCE LEANS INTO DRONE RACING — HERE'S WHY May 17, 2022 Sally French

The U.S. Air Force is seeking to support drone racing because — in turn — drone racing could likely support its recruiting efforts.

That's why the U.S. Air Force today announced an expansion of its partnership with the Drone Racing League. The Air Force will support the Drone Racing League, which is seen as a key player in developing the skills of young drone pilots. And with a crop of skilled drone pilots, the Drone Racing League could be a funnel from which the Air Force might be able to recruit. As part of the partnership, the Drone Racing League will launch a new set of programming in tandem with Military Appreciation Month. Meanwhile, the U.S. Air Force will continue to educate and recruit the league's Gen Z tech-obsessed, Techsetter fans as Airmen.

According to a survey by the Drone Racing League, 60% of its fans reported that they viewed the brands and organizations that partnered with the league as more innovative" and "on-trend." Other DRL partners include T-Mobile, insurance company Allianz, and blockchain platform Algorand. https://www.thedronegirl.com/2022/05/18/us-air-force-leans-into-drone-racing-heres-why/

NUAIR Hosts ASTM International Meeting at NY UAS Test Site May 17, 2022 News

NUAIR will host the June meeting of ASTM International's unmanned aircraft committee at the New York UAS Test Site in Rome, NY, June 1 through June 3. The meeting will bring together up to 100 international industry leaders in the uncrewed aircraft systems industry focused on developing industry standards to advance the integration of UAS into the national airspace.

ASTM's F38 committee addresses issues related to design, performance, quality acceptance tests, and safety monitoring for unmanned air vehicle systems. Stakeholders include manufacturers of unmanned aircraft systems and their components, federal agencies, design

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

professionals, professional societies, maintenance professionals, trade associations, financial organizations, and academia. Over 600 members are involved in this multinational initiative: all participating actively within a three-tiered subcommittee structure focusing on airworthiness, flight operations, and operator qualifications. https://uasweekly.com/2022/05/17/nuair-hosts-astm-international-meeting-at-ny-uas-test-site/?utm_source=rss&utm_medium=rss&utm_campaign=nuair-hosts-astm-international-meeting-at-ny-uas-test-site&utm_term=2022-05-18

General Atomics Aeronautical Systems, Inc. Continues Focus on Canada May 17, 2022 News

General Atomics Aeronautical Systems, Inc. (GA-ASI), the world leader in Remotely Piloted Aircraft, announced today that they have opened a new office near Confederation Park in Ottawa, Ontario, Canada.

The Canadian government recently announced a request for proposal for its Remotely Piloted Aircraft System Project. GA-ASI's coalition of Canadian businesses, which includes CAE Canada, L3Harris Technologies' Canadian subsidiary WESCAM and MDA – known as Team SkyGuardian® Canada – is preparing its submission.

"This is part of our building a long-term relationship with Canada," said GA-ASI President David R. Alexander. "We will lean on the knowledge and experience Michel Lalumiere has gained over his years with the Royal Canadian Air Force for the numerous projects we have ongoing in Canada with the Government of Canada, the Canadian Armed Forces and other Departments, including our hope that our Team SkyGuardian Canada offering will play a central role for the Canadian Government's RPAS plan." https://uasweekly.com/2022/05/17/general-atomics-aeronautical-systems-inc-continues-focus-on-canada/?utm_source=rss&utm_medium=rss&utm_campaign=general-atomics-aeronautical-systems-inc-continues-focus-on-canada&utm_term=2022-05-18

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

19May22

SpaceX launches third Starlink mission in five days May 18, 2022 Stephen Clark

SpaceX's Falcon 9 rocket transits the face of the sun moments after liftoff Wednesday from Cape Canaveral Space Force Station. Credit: Michael Cain / Spaceflight Now / Coldlife Photography

SpaceX's third Starlink satellite delivery mission in five days departed Florida's Space Coast just after sunrise Wednesday, adding 53 more mass-produced communications spacecraft to the company's broadband internet network.

A Falcon 9 rocket climbed off its firing stand at the Kennedy Space Center at 6:59:40 a.m. EDT to kick off SpaceX's 21st mission of the year, and the 14th launch of 2022 dedicated to deploying the Starlink network.

After Wednesday's mission, designated Starlink 4-18, SpaceX has launched 2,653 Starlink satellites to date, including spacecraft that were decommissioned or suffered failures. More than 2,300 of those satellites are in orbit and functioning as of this week.
https://spaceflightnow.com/2022/05/18/spacex-launches-third-starlink-mission-in-five-days/

ELIOS 3 MARKS FLYABILITY'S FIRST COLLISION-TOLERANT DRONE WITH A LIDAR SENSOR May 16, 2022 Sally French

Swiss-based drone-maker Flyability today released its new, Elios 3, marking the world's first collision-tolerant drone equipped with a LiDAR sensor for indoor 3D mapping.

The drone relies on a SLAM engine, which is short for Simultaneous Localization and Mapping — and it's a requirement for robots (including drones) to be able to explore and understand environments. The Elios 3's new SLAM engine is called FlyAware, and it can generate 3D models through a new software called Inspector 4.0.

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

The new Elios 3 taps into the inspection side of the drone industry, which was the No. 1 most common use for drones in 2021. This version of Elios improves upon the old Elios 2 — though this version has been in development for four years, enabling engineers thousands of hours to research and conduct more than 200 missions in the field to collect feedback, learn what clients want, and refine the technology.

And like the Elios 2, this one differentiates itself from all the other mapping and inspection drones on the market by being what the company calls "collision-tolerant." The lawyers likely won't let it be called entirely crash-proof, but the drone includes the company's signature cage and unique reversing motors. Flyability even says it can recover from flipping upside-down without crashing and fly in rugged, harsh environments without concerns of water splashes or dust.That makes the drone an ideal tool for mapping areas that are out of reach or too dangerous for humans to enter, like sewers or caves.
https://www.thedronegirl.com/2022/05/19/elios-3-drone-flyability/

Advances in Drone Docking Systems MAY 13, 2022 Scott Howe

Secure, cost-effective, and efficient facilities for storing and maintaining drones are essential for the industry to fully realize its potential. Fortunately, some companies are focused on developing state-of-the-art docking systems and installing them in cities and towns around the world.

Jörg Brinkmeyer's company, Globe UAV, created a line of drone ports, which include the mobile SKYRELEASE, the twin port SKYDECK, and the all-around SKYPORT system. "We designed them to work 24/7, 365 days a year and to keep running for minimum of 10 years."

All elements of the system are connected through the ground control station. This, Brinkmeyer explained, lets dispatchers "look at several drone ports and automatically select which drone port is active, which drone is recharged, and which one can make the distance in the shortest time."

Drone ports and docking systems have a clear and significant role to play in public safety missions, but they can also be adapted to help with package delivery, inspections, and security operations. In addition, drone docks are being deployed to improve overall city operations including emergency management, environmental protection, marine administration, and traffic. https://www.commercialuavnews.com/international/advances-in-drone-docking-

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

systems?mkt_tok=NzU2LUZXSi0wNjEAAAGEfHO5gqcutNE0T2kpCkscozzyhrkSNus8DYVf7cUgxpBmCiszf2HFo0T4dO3IhWq2vyzPZmwQV4X4Zhhz-qqvEdWZBW35LRI6l8szn5V6Bvd-

Defining Value with Drones as a Tool for Inspections in 2022 Scott Howe May 18, 2022

Today, companies use drones to inspect and monitor large-scale construction sites, power lines, sewer systems, cargo ships, wind turbines, massive energy facilities, and more. Government agencies around the world are also deploying drones to keep an eye on their many assets, looking for potential problems and making repairs and adjustments before issues get out of hand. Here a few examples:

- Drones have been used for pipeline inspections for many years, and a number of firms are finding ways to make these operations more effective.
- For inspections of concrete structures like bridges and tunnels, the software company Niricson employs a platform with an acoustic sensor, along with machine learning and the capabilities of their 3D modelling software, to provide multiple layers of actionable data
- Companies like Flyability are employing drones to bring added safety and efficiency to sewer inspections.
- Drones allow for safer and more accurate flat roof inspections.

As these examples illustrate, the use of drones for inspections creates significant value for industries ranging from energy to construction to public safety. Because of this strong ROI, more and more companies and public entities are investing in the technology.
https://www.commercialuavnews.com/infrastructure/defining-value-with-drones-as-a-tool-for-inspections-in-2022?mkt_tok=NzU2LUZXSi0wNjEAAAGEfHO5goKAo_sS2C-CXZjPCfGb9DcU9KSE3OGU77E0awkM1-OcfrF3W6cIijDoUm21TZMDOaZFsCf8MufBV96jE3dAFyfTKc-KCAYsWz91Y7Y2

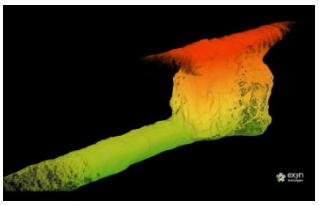
Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

ExynAI Improves Mining Operations with Autonomous Drones Scott Howe May 17, 2022

"About three years ago, I was leading digital innovation at a mining company," Raffi Jabrayan, Vice President of Commercial Sales and Business Development at Exyn Technologies and met a team from Exyn at a mining event, and we started working to co-develop a product."

That product is powered by the company's ExynAI™ software to enable 3D mapping and monitoring of mining operations. With this software, drones can operate with "Level 4" autonomy, meaning they can autonomously explore areas where GPS is not effective—and they can do it without the need of a pilot.

"ExynAI is basically the brains of the operation," Jabrayan said. "It uses the sensor fusion between the IMU onboard, the Velodyne puck, and our collision avoidance/mapping system to achieve full autonomy."



"We operate mostly in underground mines, which are known to be harsh environments," Jabrayan said. A common activity in an underground mine is the mapping of large cavities called "stopes." "A stope is not somewhere where you want humans entering at all or even getting near."

Because ExynAI enables drones to operate autonomously, the software has proven its value in stope mapping operations. https://www.commercialuavnews.com/mining/exynai-improves-mining-operations-with-autonomous-drones?mkt_tok=NzU2LUZXSi0wNjEAAAGEfHO5gmVsiRV-32RcKeWadQZKTS2CRLpQ0bEB1d4Sjh6RsZsEg-uve3rKVJ7wx_NJU81GpXbfKMP4ig-VC4gDqkR3X5nOkzZsO4uU5-EhJI0h

Perspectives on eVTOL Certification from Honeywell, Jaunt, Archer, Joby Jessica Reed, May 19, 2022

Manufacturers of electric vertical take-off and landing (eVTOL) aircraft are working closely with the Federal Aviation Administration and the European Union Aviation Safety Agency to establish a path to certification and make progress towards achieving certification for these new types of vehicles.

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

Jaunt Air Mobility plans to launch by 2026, while Archer Aviation expects to begin its eVTOL aircraft operations by the end of 2024. Joby Aviation has also outlined a launch date in 2024. Whether these objectives will be possible or not depends on the regulatory framework in place for advanced air mobility (AAM) systems.

Jia Xu, CTO and senior director of engineering and unmanned aerial systems/urban air mobility at Honeywell Aerospace, weighed in on the regulatory approach in the U.S. for certifying AAM aircraft and systems. "The industry needs clarity and consistency to achieve safe operations. If the intent is to create a more flexible, consistent and future-proof regulatory framework for certifying UAM vehicles then we are all for it." Xu also commented that Honeywell welcomes efforts made to standardize requirements for certification of urban air mobility aircraft.
https://www.aviationtoday.com/2022/05/19/faa-certification-changes/?oly_enc_id=7021F0632090D7B

Swoop Aero gets okay for global remote drone pilot center Bruce Crumley - May. 19th 2022

Swoop Aero has won approval from Australia's Civil Aviation and Safety Authority to operate a centralized facility that will allow employees of the drone delivery company to remotely pilot up to five different UAVs over three different continents at once.

Swoop Aero made the announcement today. It said the facility will allow it to run its drone delivery activities more like a global airline by centralizing its operational and navigational tech in one place, thereby enhancing the network's visibility and efficiency world-wide. The company is expected to locate the Remote Operations Center (ROC) at its headquarters in Melbourne.

Never lacking in ambition, Swoop Aero also noted in the announcement that it expects to swiftly scale operations of the ROC and increase the ratio of delivery drones in flight to remote pilots overseeing them to 30:1. To do that, Swoop Aero will expand its use of Amazon Web Services (AWS) as an interface with air traffic control and uncrewed traffic management systems to avert encounters with other UAVs or passenger craft. The company already relies on AWS for its drone deliveries of medical supplies in Africa. Those flights, as well as services Swoop Aero provides in Europe and Oceania, will soon be orchestrated from the ROC.
https://dronedj.com/2022/05/19/swoop-aero-gets-okay-in-oz-for-global-remote-drone-pilot-center/#more-81049

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

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National Grid Drones: Trialing Automated Corrosion Inspection of Transmission Pylons

Miriam McNabb May 19, 2022 by DRONELIFE Staff Writer Ian M. Crosby

National Grid Electricity Transmission (NGET) is conducting a trial of a system intended to fully automate the capture and processing of corrosion-related condition assessment data. The system, born out of a collaboration with Keen AIand sees.ai, deploys automated drones flown Beyond Visual Line of Sight for the collection of data which is then processed by artificial intelligence.

NGET periodically assesses its extensive network of steel lattice pylons used to carry overhead transmission wires for corrosion and deterioration. NGET inspects roughly 3,650 steel lattice pylons per year, capturing images from helicopters and manually operated drones, which are then manually processed.

The trial of this new system will allow a fleet of autonomous drones to be piloted nationally with authorization from the Civil Aviation Authority and with supervision by remote operators in a secure Remote Operation Centre.

The automation of data capture and processing for these assessments provides numerous advantages, such as enabling the capture of optimal data for automated processing, increasing the speed, efficiency, and consistency of data processing, predicting the future state of a pylon and the impact of any maintenance work and reducing the risk and environmental impact of data capture. https://dronelife.com/2022/05/19/national-grid-drones-trialing-automated-corrosion-inspection-of-transmission-pylons/

mscasser@umd.edu; ursula.s.powidzki@gmail.com; rkaese@tedco.md; darryl.r.mitchell@nasa.gov; kris.a.romig@nasa.gov; gary.evans@axcel.us; mike.hitch@nasa.gov; denise.a.lawless@nasa.gov; christina.d.moats-xavier@nasa.gov; thomas.e.johnson@nasa.gov; tony@teamalaris.com; daniel.morris@nianet.org; myaz@hampton.gov; stanley@nianet.org; william.edmonson@nianet.org; heather.gramm1@maryland.gov; elizdietzmann@gmail.com; steven.bain@oncourse-llc.com; Marty@General-Ideas.com; james@djmontgomery.com; rkwhite@vbgov.com; mburgess@airsightglobal.com; eleavitt@airsightglobal.com; b.hanrahan@precisionhawk.com; danginobell@outlook.com; Tcheek503@yahoo.com; jeanhaskell415@gmail.com;

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

jha@eservices.virginia.edu; ayoung5090@aol.com; jcc7s@eservices.virginia.edu; cxcarter@odu.edu; msandy@odu.edu; robert.a.baker.ctr@navy.mil; rick@crtnsolutions.com; eupchurch@sitechma.com; sjohnson@adaptiveaero.com; dubtravis@hotmail.com; p.gelhausen@avidaerospace.com; pcushing@williamsmullen.com; rkorroch@williamsmullen.com; steven.walk@nhgs.tec.va.us; tanner.loper@nhgs.tec.va.us; talberts@odu.edu; rdwyer@hrmffa.org; kenny.elliot@yorkcounty.gov; william.a.wrobel@nasa.gov; harry@virginiauas.com; asubramani@avineon.com; jcampbell@avineon.com; sean@hazonsolutions.com; scott@virginiauas.com; Bob@virginiauas.com; jcronin@odu.edu; peter.bale@srsgrp.com; cquigley@hrmffa.org; chris@hoistcam.com; ed@hazonsolutions.com; msatterlund@mwcllc.com; sadlerc@yorkcounty.gov; ariela@powerofavatar.com; dataariseconsulting@gmail.com; kim.lochrie@vaspace.org; dyoung@genedge.org; david@hazonsolutions.com; ralph@jeremycreekfarm.com; jeff.johnson@vtcrc.com; emcmillion@reinventhr.org; director@doav.virginia.gov; jspore@reinventhr.org; paulrobinson@atr-usa.com; vic.z.tumwa@nasa.gov; jacobw@us.ibm.com; dlandman@odu.edu; sherwood@nianet.org; peter.mchugh@nianet.org; cedric.sauvion@act.nato.int; arch@archandassoc.com; jnoel@yorkcounty.gov; cmeredith@nnva.gov; cstuppard27@gmail.com; carl.conti@sisinc.org; Hughesfamily51@charter.net; tom.walker@webteks.com; zak@unrealworx.com; jack@generalaerocompany.com; bruce.holmes@airmarkets.aero; peter.mchugh@nianet.org; mpoplawski@nnva.gov; mark.flynn@doav.virginia.gov; jshaeffe@odu.edu; rclaud@odu.edu; pmengden@swiftengineering.com; astreett@swiftengineering.com; kielyw@msn.com; dcgrulke@cox.net; jrea23@hotmail.com; mastaglio@hotmail.com; kenaijunkie@hotmail.com; murat@destecs.net; dlandman@odu.edu; robert.stolle@cit.org; jolson@ecpi.edu; wiedmanj@gmail.com; w1wnr@aol.com; alex.synnott@gmail.com; jkirby145@yahoo.com; Daniel@lingoconsulting.com; l.delaporte3@gmail.com; cyook@kslaw.com; allcvi@consolidatedventuresinc.com; jholman@hreda.com; savery@oihr.org; charity.gavaza@poquoson-va.gov; mjkaszub@odu.edu; twc4223@yahoo.com; boshier@verizon.net; dslindleyva@gmail.com; ilind@att.net; aaron@tidewaterglobal.net; jeffdye01@gmail.com; dtackels@dronedeploy.com; cwirt@nnva.gov; abece001@odu.edu; dtb7p@virginia.edu; kenneth.niederberger@gmail.com; Ashley.rowe@yorkcounty.gov; juliewheatley@co.accomack.va.us; junnam@asm-usa.com; mohara@ball.com; robert.fleishauer@ssaihq.com; manning@stcnet.com; mkim@genexsystems.com; rwhite@vigyan.com; skyemciver@gmail.com; khoffler@adaptiveaero.com; jerylhill@cox.net; bwachter@bihrle.com; mproffitt@adaptiveaero.com; james.closs@nianet.org; djones@dslcc.edu; director@lakecountyedc.com; Carine.cherrier@act.nato.int; cshelton@startwheel.org; aradovic@dcnteam.com; cgeraghty@pro-enviro.com; jimmy@lyftedmedia.com; bheenan@morphtec.com; ed.albrigo@cit.org; joe.fuller@dartfleet.com; jharenchar@rmg-usa.com; asynnott@telegraphoffice.com; jim@ust-media.com; anthony.vittone@dartfleet.com; jairusmwenzel@gmail.com; john.robinson@srsgrp.com; jgill@tcc.edu; arthur@promediavideoservices.com; walt@fcg-co.com; david.throckmorton@nianet.org; photographybydavid.dr@gmail.com; mgboyd99@gmail.com; johndcalder@gmail.com; mpapazis@scott-macon.com; bigbenjmn@gmail.com; bljohnson@virginiamohs.com;

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

amy.wiegand@droneup.com; stevel@co.kinggeorge.state.va.us; dbrillembourg@avidaerospace.com; daniel.g.wolfe@usi-inc.net; blarys@cox.net; kim@wildflowerintl.com; carly@wildflowerintl.com; DMorris@ReinventHR.org; genevieve.ebarle@nianet.org; marco.rubin@cit.org; mytravelexpert@msn.com; jchapman@cwm-law.com; codyreese21@yahoo.com; jcostuli@odu.edu; jselfridge@gmail.com; chris@assayonwheels.com; dbarton@daa.com; pierre@si-forest.com; lynn.mcdaniel@ctr-cit.org; tracy.tynan@cit.org; jerylrhill@gmail.com; chewlett@deloitte.com; aoksoy@odu.edu; charles@tudorproductions.com; Frederic.dalorso@act.nato.int; bj.sharon.hall@sbcglobal.net; chris.moad@earlycharm.com; info@droneii.com; EdMullinSr@outlook.com; Brian.spratt@si-forest.com; Mike.griffin@si-forest.com; Lisa.May@murphian.com; mfrigelj@pmasolution.com; amy.wiegand@droneup.com; roger.venezia@maryland.gov; mattisdrone@gmail.com; johnmarkva@mac.com; jhawk009@odu.edu; dmperkins@odu.edu; ngrden@odu.edu; davidplace47@gmail.com; ksrawat@ecsu.edu; Thomas.garrett@yahoo.com; marco@expressdroneparts.com; info@pt2go.com; wasilewj@evms.edu; shaun@caterboom.com; kbarquinero@gmail.com; amy.k.klarup@nasa.gov; Daniel.Berry@act.nato.int; cvidoli@fastmail.fm; evandro@airgility.co; Jeanne.larcombe@gmail.com; s.snedecor@advancedaircraftcompany.com; rbesser@stevens.edu; ac@cordillera-apps.com; cj@cjspadycpa.com; eashby2008@gmail.com; lena.little@nasa.gov; michael.l.french.civ@mail.mil; mrichards@wildflowerintl.com; Amber.Wilson@doav.virginia.gov; Theresa@redorangestudio.com; keagle@odu.edu; ac@cordillera-apps.com; uasci@dcnteam.com; carole.mattessich@nianet.org; dbowles@odu.edu; joshb@uavfactory.com; mcopeland@eagleaviation.tech.com; gp@cordillera-apps.com; roberthrea@gmail.com; miriam@dronelife.com; david@where2wheel.com; chris.bugg@sandler.com; zachary.johns@hush.aero; joe.piazza@teamalaris.com; aj.gallagher@hush.aero; jonathan.kelly@ssaihq.com; steve_fitzsimmons@comcast.net; dougsmith@hreda.com; mail@GlobalStrategySupport.com; larry.lombardi@currituckcountync.gov; dgagne@divcom.com; mickey@cowden.tech; rese.cleaver@droneup.com; Jim@JHWUnmannedSolutions.com; ovadia.salama@gmail.com; ajaques@airt.ngo; byron@airsupply.com; wyatt@airsupply.com; Andrew@airsupply.com; nio@phaseone.com; rbo@phaseone.com; colter.menke@maryland.gov; steve.jarriel@dronevideopartners.com; david@americanaerospace.com; bobaldrich@geturgently.com; chris@geturgently.com; patrice@trisdom.com; missie@vpdrone.com; pramod@airgility.co; Don.Berchoff@trueweathersolutions.com; sales@inertiallabs.com; ccoffey@lrprecisiontooling.com; mwhite@lrprecisiontooling.com; don@zenithaerotech.com; anielsen@odu.edu; JMay@autonomousflight.us; Tim@QuestKnightEnterprises.com; andrew.branson@droneup.com; tjs12454@gmail.com; orders@airsupply.com; michaelfrench070@gmail.com; michael.beiro@linebird.net; jeff.etter@droneup.com; ryan.williams@droneup.com; greg.james@droneup.com; jdaniel@missiongo.io; elle.pechiney@alarispro.com; jessica.ambrose@droneup.com; danny.cullen@droneup.com; a.frank@advancedaircraftcompany.com; anthony.vittone@droneup.com; stanley@nianet.org; Pstoutamire@autonomousflight.us; sgreen@mwcllc.com; Supremeroman77@gmail.com; karenandkeith@cox.net; daniel.g.wolfe@usi-inc.net; davehinton757@gmail.com; msterk@thelongbowgroup.com; Richard.Laing@ncia.nato.int;

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net

richard.r.antcliff@gmail.com; Zachary.johns@hushaero.com; carrie.rhoades@nasa.gov; ryan.labarre@firstiz.com; jstorm22@gmail.com; director@gsdm.global; joefuller757@gmail.com; cwood3910@att.net; hudpagosa@yahoo.com; mlboshier@gmail.com; bdallen@odu.edu; b.fenigsohn@advancedaircraftcompany.com; mspapen1@gmail.com; matt.beatty@droneup.com; deancartini@cartinidrones.com; chris_sadler@verizon.net; chris.sadler@ctr-vipc.org; jschultz@areai.com; Chris.Sadler@VirginiaIPC.org; Tom.mastaglio@outlook.com; Brandon.graham@nianet.org; Robin.ford@nianet.org; CameoBluejay@protonmail.com;

Robert Rea | Axcel Innovation | Suffolk, VA
robert.rea@axcel.us | 757-309-5869 | www.axcelinnovation.net