**149 . Date: 08-01-2024Armed ISR / ISTAR - MALE - ContractNorthrop Grumman Gets $14M US Navy MQ-8 Fire Scout Support ContractURL: https://www.uasvision.com/2024/01/08/northrop-grumman-gets-14m-us-navy-mq-8-fire-scout-support-contract/**

Northrop Grumman Systems Corp

., San Diego, California, is awarded a $14,305,018 modification (P00010) to a previously awarded cost-plus-fixed-fee contract (N0001923C0002).

This modification exercises options and increases the ceiling to provide engineering support, cyber security activities and capabilities, integrated logistics support, material and training services support, software sustainment, and travel in support of sustainment efforts for the MQ-8 Fire Scout Unmanned Air Systems.

Work will be performed in San Diego, California, and is expected to be completed in December 2024. Fiscal 2024 operations and maintenance (Navy) funds in the amount of $8,901,344 will be obligated at the time of award, all of which will expire at the end of the current fiscal year.

Naval Air Systems Command, Patuxent River, Maryland, is the contracting activity.

**150 . Date: 08-01-2024Armed ISR / ISTAR - MALE - General - PlatformTaiwan’s Teng Yun 2 Reconnaissance Drone Completes 20-Hour FlightURL: https://www.uasvision.com/2024/01/08/taiwans-teng-yun-2-reconnaissance-drone-completes-20-hour-flight/**

Taiwan reached another defense milestone after the domestically developed Teng Yun 2 drone stayed airborne for more than 20 hours during its most recent test flight.

The drone broke its first record in June last year when it flew for 10 hours straight, following the entire perimeter of Taiwan’s air defense identification zone.

The new 20-hour record means that the drone could be used to monitor the Taiwan Strait for nearly an entire day at a time, the source said.

Designed by the Chungshan Institute of Science and Technology, the Teng Yun 2, or “Cloud Rider 2” (騰雲二型), can operate day and night in all weather conditions, and is capable of aerial image surveillance and reconnaissance, electronic parameter reconnaissance, electronic interference, meteorological observation and relaying signals.

The Teng Yun 2 is a large, long-endurance, satellite-guided, medium-altitude drone that can carry multiple payloads, meaning that it can be used for surveillance or strike missions, information from the institute showed.

It can also take off and land autonomously, and has multiple guidance and control links, as well as ground-networked communication links.

“During a combat scenario, the drone could provide remote, real-time surveillance information, and could play an important early warning role,” the source said.

The Teng Yun 2 is expected to be used by the military alongside US-made MQ-9 Reaper drones, with the Reapers being responsible for high-altitude surveillance and reconnaissance missions, and the Teng Yun 2 to be used for medium and low-altitude missions, the source said.

The drone’s capabilities would give the military more flexible and robust surveillance capabilities, they said.

“However, the number of drones that the air force will purchase is still undetermined, and that would affect how they are deployed,” the source said.

The Chinese military is also developing drones, which it hopes will strengthen its surveillance and reconnaissance capabilities, so Taiwan’s military must simultaneously surveil at different altitudes to give it an advantage, the source said.

In other military news, the Ministry of National Defense said that over the past 24 hours it had detected eight Chinese fighter jets crossing the median line of the Taiwan Strait, as well as one Chinese balloon.

The ministry said the Chinese J-10, J-11 and J-16 fighter jets had crossed the median line to the north and center of the Strait.

The median line once served as an unofficial barrier between the two sides, but Chinese planes now regularly fly over it. Taiwan sent its own forces to monitor the fighter jets, the ministry said.

The ministry also reported another Chinese balloon in the Strait.

Taipei officials have said the balloons are most likely for monitoring the weather, and the spate of sightings could be due to the direction of winds.

The balloon was spotted after crossing the median line late on Saturday morning, 97 nautical miles (180km) northwest of Keelung at an altitude of approximately 6,100m, the ministry said, adding that it headed east and disappeared about an hour later.

The potential for China to use balloons for spying became a global issue in February when the US shot down what it said was a Chinese surveillance balloon. China said the balloon was a civilian craft that had accidentally drifted into the US.

**151 . Date: 09-01-2024Market$1.76 BN Makes Baykar Turkey’s Leading ExporterURL: https://www.uasvision.com/2024/01/09/1-76-bn-makes-baykar-turkeys-leading-exporter/**

Turkish drone magnate Baykar became the export champion in Turkey with $1.76 billion in exports, as the country strives to nationalize and further develop its defense sector.

Domestically-produced Bayraktar TB2 and Bayraktar Akıncı drones accounted for 32% of all defense industry exports in the country in 2023, according to Baykar CEO Haluk Bayraktar.

In a statement posted on X, Haluk Görgün, the head of Turkey’s Defense Industry Agency (SBB) hailed the growth of Turkey’s defense industry, as he said it was crucial to ensure that the growth is sustainable.

The Turkish defense and aviation industry achieved a new record in export figures in 2023 with total exports amounting to nearly $5.5 billion (TL 163.8 billion), up 27.1% year-over-year.

“It further encourages us to know that a strong will supports everything that we do,”

Görgün said, as he thanked President Recep Tayyip Erdoğan for his unwavering support for domestic and national production vision.

In the past decade, Turkey exported 230 different defense industry products to around 185 countries, according to Görgün.

Throughout the year, the Turkish defense industry particularly excelled in exports of unmanned aerial vehicles (UAVs), armored vehicles, naval platforms, ammunition and weapon systems. Strengthening its presence in the countries where exports were made, the sector also gained new customers this year.

The aviation industry also exports aircraft structures, equipment and maintenance-repair services for the world’s leading platform manufacturers.

Last year, unmanned aerial vehicle manufacturer Baykar inked what is said to be the largest defense export contract in Turkey’s history with Saudi Arabia, which came on the sidelines of President Recep Tayyip Erdoğan’s three-country Gulf tour that included stops in Jeddah, Doha and Abu Dhabi.

Since the beginning of the unmanned aerial vehicle (UAV) related research and development (R&D) studies in 2003, Baykar has earned 83% of all its revenues from exports.

**152 . Date: 12-01-2024Cargo - GeneralWing and Walmart Expand Service to Millions of Customers in Dallas-Fort WorthURL: https://www.uasvision.com/2024/01/12/wing-and-walmart-expand-service-to-millions-of-customers-in-dallas-fort-worth/**

Wing and Walmart are expanding service to millions of customers, leveraging Wing’s airspace approvals that facilitate service across the Dallas-Fort Worth (DFW) community. Wing and Walmart will launch our newest drone delivery locations in the coming months and plan to complete the expansion within the year.

Last August, Wing and Walmart launched service together at two locations in DFW – reaching 60,000 homes via drone delivery. In our first 4 months of service, the response from Walmart customers has been overwhelmingly positive, using the service to order a range of products, including quick meals, groceries, household essentials, and over-the-counter medicines. And as our customers in Frisco and Lewisville know, on average those deliveries arrived in under 30 minutes and provided a convenient way to get what they needed, when they needed it.

“I had a Walmart delivery from Wing when we were running low on key ingredients for [a] recipe. We were so impressed that our eggs were delivered safely and likely had a safer journey than traveling by car in our trunk.” – Customer, Frisco, TX.

“We ordered through the app and received fresh guacamole and some candy within 15 mins. The kids enjoyed the excitement of watching the drone on the app until it dropped our package safely in our driveway. Will definitely use it again. Much quicker than a drive to the store.” – Customer, Frisco, TX.

Our first months delivering to Walmart customers have made one thing clear: Demand for drone delivery is real. For instance, on a given Sunday, Walmart customers placed over 130 orders to ensure they were prepped and ready for the big game – receiving items like chicken, sour cream, avocados and limes. Via the Walmart store in Frisco, our regular customers order on average ~2 times per week – with our top 25% customers averaging ~3 orders per week. Our average flight time is 5 minutes!

Wing’s drone delivery service offers a safe and convenient way to get your everyday needs (or last-minute forgotten items!) delivered nearly instantly, and our recent regulatory approvals mean we will be able to reach more customers throughout DFW.

In 2019, Wing was the first drone delivery company in the United States to receive a Part 135 Air Carrier Certificate. Now, Wing’s new environmental approval in the DFW metroplex marks the first time the FAA has approved an entire metro area for drone delivery.

While Wing has already been serving customers at up to a 6-mile radius from nests in Frisco and Lewisville, Wing’s recent summary grant enables us to move toward beyond visual line of sight (BVLOS) operations without visual observers across DFW and similar airspace surrounding other major U.S. cities, adding to the momentum of the drone delivery industry at large. This marks a paradigm shift in the way U.S. regulators are approaching approvals for these types of advanced BVLOS drone operations.

We believe 2024 will be the year of drone delivery—and our growing service with Walmart is a huge step forward.

“Congratulations to Wing and Walmart on a growing partnership,”

said City of Frisco Mayor Jeff Cheney.

“In 2022, Wing picked Frisco to launch its first commercial drone delivery service in a major U.S. metro area. We consider our entire community an innovation lab and our residents embrace this service. Nowadays, Wing is more than a novelty in Frisco. The drone delivery service has evolved into a welcome, daily convenience for essentials like recipe ingredients, eggs, limes or over-the-counter medicines. The ease and efficiency of Wing’s drone delivery service enhances quality of life.”

**153 . Date: 17-01-2024Armed ISR / ISTAR - Tactical - ContractItalian Government to Approve Leonardo Astore MALE UAV AcquisitionURL: https://www.uasvision.com/2024/01/17/italian-government-to-approve-leonardo-astore-male-uav-acquisition/**

The programme for acquiring two Astore MALE (Medium Altitude Long Endurance) UAV systems, developed and produced by Leonardo, is about to be launched, following the publication in mid-December 2023 of the relevant document by the Italian Government.

The Astore UAVs will act as gap fillers, as the Predator Alpha Plus MQ-1C UAVs that entered service in 2004 and saw action in Iraq and Afghanistan was phased out in late 2022 while the new MQ-9A Reapers Block 5 should become operational in late 2025. The first Italian Air Force MQ-9A Block 5 flight took place in the United States in early November 2023.

The contract will be worth 76 million Euro, the main financing taking place in 2023. 2024 and 2025, respectively with 21, 25 and 25 million, one million per year being assigned to the programme in the following five years. These figures might vary depending on the programme

Each one of the two systems will include two Astore air vehicles and one Ground Control Station. Within the contract the Italian Air Force will also receive the relevant auxiliary ground equipment, spares for 1,000 flight hours, logistic and maintenance support for the initial phase while the Air Force will aim to reach full autonomy. The contract will also include training for 40 Air Force personnel, including pilots and maintainers.

Laser guided missiles will also be part of the package, to be used in an experimentation and evaluation phase, as the Italian Air Force intends to use those UAVs also for kinetic missions, beside the typical Intelligence, Surveillance, Target Acquisition, and Reconnaissance mission.

A derivative of the Falco Evo, according to information provided by Leonardo the Astore has a 12.5 metres wingspan, a maximum take-off weight of 650 kg, 210 kg representing the payload including 90 kg of fuel. Each wing can carry up to 35 kg payload, which means the UAV can carry two lightweight missiles or guided rockets such as Roketsan Cirit 70 mm ones, leaving 50 kg for other payloads, among them an electro-optical surveillance and tracking system.

Armed Astore

The UAV should be fitted with a Leonardo EOST-46 gimballed sensor suite which features a thermal channel based on the company Medium Wave Infrared Erica Plus cooled thermal imager, a colour TV with a x20 zoom being used for daylight operations, while a black and white camera ensures target acquisition. To ensure laser weapons guidance a laser designator should also be fitted. Safety critical systems are installed to ensure maximum safety of weapons firing systems, a man-in-the-loop being of course ensuring target positive identification as well as firing clearance.

The Astore has a maximum endurance of up to 14 hours with weapons installed, 16 hours in clean configuration, with an operational ceiling of 23,000 ft and a line-of-sight range of over 200 km. Powered by a turbo heavy-fuel engine, its operational speed varies between 60 and 105 knots. When flying at 2,000 ft above ground level the noise is less than 32 dB.

Beside their military use under the Ministry of Defence authority, Astore UAVs will also be available for supporting other State entities in homeland security and civil missions.

**154 . Date: 22-01-2024Armed ISR / ISTAR - MALE - SafetyUSAF MQ-9 Downed in Iraq by Iranian-Provided MissileURL: https://www.uasvision.com/2024/01/22/usaf-mq-9-downed-in-iraq-by-iranian-provided-missile/**

An American MQ-9 Reaper drone crashed in northern Iraq on Jan. 18, as the U.S. continues to fend off attacks from Iran-backed militias, U.S. officials told Air & Space Forces Magazine.

The U.S. Air Force MQ-9 was likely downed by an Iranian-provided surface-to-air missile fired by an Iranian-affiliated Iraqi group, U.S. officials said. The MQ-9 was supporting Operation Inherent Resolve, the anti-ISIS mission, a senior U.S. military official added. The drone crashed near the Balad Air Base and was recovered by Iraqi Security Forces.

The Islamic Resistance in Iraq, an umbrella group of Iraqi militias supported by Tehran, claimed that it shot down the MQ-9 over Diyala Province after it took off from Ali Al-Salem Air Base in Kuwait.

The resistance group said that it downed the aircraft using a surface-to-air missile and displayed photos of aircraft debris. One image showed winglets that appeared similar to those on the roughly $30 million MQ-9, while another showed a possible external fuel tank.

An investigation into the cause of the crash is underway, U.S. officials said. It is unclear if the U.S. has regained possession of the MQ-9 yet. “There were no injuries reported,” a defense official said.

Michael Knights of the Washington Institute for Near East Policy said Iranian-backed Iraqi militias in that area of Iraq have Iranian-made “358” SAMs.

This is the second time that a MQ-9 has been lost in recent months. In November, a Reaper was shot down off the coast of Yemen by the Houthis. The U.S. has lost three MQ-9s over the past year. In addition to the drones lost over Iraq and near Yemen, an MQ-9 crashed into the Black Sea last March after a Russian fighter struck its propeller. Two more MQ-9s were damaged over Syria in July when Russian fighters burned them by releasing flares.

On Jan. 4, the U.S. conducted a rare drone strike in Baghdad that killed a leader of an Iranian-backed militia in an effort to deter further attacks on American forces in Iraq and Syria.

The militias, however, have continued their attacks against U.S. troops in Syria and Iraq. As of Jan. 18, the militias have carried out at least 140 attacks, according to the Pentagon. Of these, 57 took place in Iraq and 83 were in Syria.

**155 . Date: 23-01-2024RequirementLithuania to Spend $33M Annually on Developing DroneURL: https://www.uasvision.com/2024/01/23/lithuania-to-spend-33m-annually-on-developing-drones/**

Lithuania plans to spend EUR 30 million (USD 32.6M) annually on developing its unmanned aerial vehicle systems, reveals Deputy Minister of National Defence Žilvinas Tomkus following a hearing of a parliamentary committee.

A meeting of the Seimas Committee on National Security and Defence took place on Friday to consider the matter. Tomkus noted that Lithuania would spend not only its own national funds to develop its drone capabilities but would also use US aid earmarked for the Baltic States.

Arūnas Kumpis, a Lithuanian volunteer fighting in Ukraine who attended the sitting, said that the Ministry of National Defence has done nothing in applying drone technologies in the Lithuanian Armed Forces and has not learned from the experience of the war in Ukraine.

Chairwoman of the Board of the National Defence Industries Association (NGPA), Erna Suslavičiūtė, stressed that cooperation between companies, the Armed Forces and the Ministry of National Defence must be improved and the military must present its strategic vision to the defence industry.

MP Laurynas Kasčiūnas in turn emphasised that Lithuania needs a breakthrough in unmanned aerial vehicles systems on a monthly basis and thus has to overstep bureaucratic boundaries when developing them.

**156 . Date: 24-01-2024Armed ISR / ISTAR - Small - General - PlatformSouth Korea Introduces Small Stealth Drones into ServiceURL: https://www.uasvision.com/2024/01/24/south-korea-introduced-small-stealth-drones-into-service/**

On Wednesday, January 17th, the Ministry of Defense of the Republic of Korea announced that after completion of development phase and flight tests, new small unmanned aerial vehicles with low observable technology (stealth) were introduced into service in the Republic of Korea Armed Forces and deployed in Gangwon Province.

On December 26th, 2022, five North Korean drones violated South Korean airspace, and the response of the ROK Armed Forces was insufficient. Therefore, one of the main priorities of the South Korean Ministry of Defense in 2023 was the creating of the Drone Operations Command and the development of unmanned aerial vehicles to respond to threats from North Korea.

In particular, because South Korean President Yoon Suk-yeol ordered the development of unmanned aerial vehicles with low observable technology in early 2023, and the Agency for Defense Development (ADD) indicated them as a key task for research and development work and was able to accelerate their development.

ADD has been independently researching low observable technology since 1999, and therefore relatively quickly began developing in 2023 small UAVs with a wingspan of less than 3 m, and the Korean Air Aerospace Division (KAL-ASD) research institute was selected as the contractor. The Institute is currently developing an unmanned combat loyal wingman, Kaori-X, for cooperation with the new generation KAI KF-21 Boramae multi-role aircraft, the program of which was revealed on December 23rd, 2021.

The small stealth unmanned aerial vehicle was publicly unveiled for the first time during the South Korean Armed Forces Day military parade on September 26th, 2023, and the Defense Acquisition Program Administration (DAPA) announced that development had been completed following a successful test flight in November.

According to the Ministry of Defense, the Armed Forces will use small stealth unmanned aerial vehicles and continue to strengthen its operational capabilities in this class of systems by promoting the development and mass production of new aircraft, both as loitering munitions and for operations in the so-called swarms.

**157 . Date: 25-01-2024Loitering Munition - Small - General - PlatformUkraine’s New Kamikaze Jet Drone Makes First FlightURL: https://www.uasvision.com/2024/01/25/ukraines-new-kamikaze-jet-drone-makes-first-flight/**

Maxim Glushak

announced on his Facebook page that a new kamikaze jet drone made its first flight in Ukraine. The photos reveal an unmanned aerial vehicle developed in a canard configuration with a horizontal front tail.

The presence of air intakes makes it possible to claim that a non-rocket engine is installed on the UAV. In addition, there is a high probability that the engine thrust is adjustable.

The kamikaze drone has a straight wing with Hoerner-type wingtips, which provide additional lifting power and help to get rid of the “Dutch roll” due to weak directional stability.

Volunteers from the “Battalion Volunteer” charitable foundation took part in the tests of the new kamikaze drone.

For take-off, the drone needs a special trolley, which disappears during the climb and remains on the runway.

As Militarnyi reported previously, the Ukrainian military also received the initial batch of new AQ 400 Scythe strike drones.

In an official statement, the company announced the successful completion of purchases aimed at mass production of these long-range kamikaze UAVs.

The company currently has an initial production capacity of 100 AQ 400 Scythe units per month. However, in the future, it plans to increase this number to 500 units.

**158 . Date: 26-01-2024Armed ISR / ISTAR - MALE - Requirement - PlatformSouth Korea Starts Production of ‘Korean Reaper’ Surveillance DroneURL: https://www.uasvision.com/2024/01/26/south-korea-starts-production-of-korean-reaper-surveillance-drone/**

South Korea has begun production of medium-altitude unmanned aerial vehicles (MUAVs) to enhance the military’s surveillance over North Korea, the state-run procurement agency said Thursday.

In December, the Defense Acquisition Program Administration (DAPA) signed a 471.7 billion-won (US$353.6 million) deal with Korean Air, South Korea’s biggest airline, along with two defense firms, LIG Nex1 and Hanwha Systems, to manufacture advanced spy drones by 2028.

The state-run Agency for Defense Development initiated the MUAV project in 2008 and completed its development in 2022.

The surveillance aircraft is capable of flying at an altitude of 10-12 kilometers and capturing high-resolution images from distances exceeding 100 kilometers. It measures 13 m in length and 3 m in height, and has a wingspan of 25 m.The unmanned aerial vehicle can be used for surveillance, reconnaissance and offensive operations.

The MUAV will be equipped with weapons such as the Cheongeom, domestically produced anti-tank missiles. The vehicle is also expected to exceed the capacity of the American MQ-9 Reaper in some ways.

Its 1,200-horsepower turboprop engine exceeds that of the Reaper’s 900-horsepower engine, and the MUAV’s operation time is 24 hours, longer than the Reaper’s 14 hours. This means the MUAV can carry heavier armaments than the Reaper and operate in the air longer.

South Korea’s path to producing the MUAV has been rocky. Initial discussions occurred in 2006 during the Roh Moo-hyun administration, and development began in 2008. However, the project was dropped temporarily after the government signed a deal in 2011 to adopt the Global Hawk, a high-altitude unmanned reconnaissance aircraft, from the United States.

The Korean government then announced the MUAVs would be completed by October 2017, only to postpone it to December 2018, citing problems in the data link transmissions.

Other issues concerning different parts of the vehicle continued to disrupt the development plan until March 2022, when the MUAV was announced to have met all the relevant defense equipment standards.

**159 . Date: 29-01-2024Armed ISR / ISTAR - HALE - ContractUSAF Selects Anduril as One of Five vendors to Develop CCAsURL: https://www.uasvision.com/2024/01/29/usaf-selects-anduril-as-one-of-five-vendors-to-develop-ccas/**

Anduril – a US autonomous systems start-up – has been selected as one of five defence industries to help develop the Collaborative Combat Aircraft (CCA).

The US Air Force (USAF) intend to operate uncrewed autonomous aircraft – known as CCAs – as part of a network alongside other aerial platforms such as fifth or sixth-generation aircraft.

This network-centric concept comes under the USAF’s wider, highly secretive Next-Generation Air Dominance (NGAD) programme that envisions a system-of-systems approach to integrate next-generation fighter aircraft, weapons, sensors, networking, and battle management systems to maintain air superiority in the coming decades.

“We are honoured to be the only non-traditional defence company selected to be a part of the CCA programme,”

the new contractor said in a statement on 25 January 2024.

Other contenders include four primes: Boeing, General Atomics, Lockheed Martin and Northrop Grumman.

In March 2023, the USAF Secretary revealed the plan to pair at least 1,000 uncrewed CCAs with advanced manned fighters in the near-term future, in his keynote speech titled “One Team, One Fight” at the 2023 Air Force Association Warfare Symposium held in Colorado.

The plan is tentatively based on the assumption of teaming two CCAs with each of the 200 NGAD platforms and 300 F-35s.

The USAF’s budget proposal for the fiscal year 2024 includes a budget request of $490m to accelerate the development, experimentation and testing of CCAs.

CCAs can perform different missions, ranging from carrying weapons and flying ahead of other aircraft to provide intelligence, surveillance and reconnaissance and relay valuable early warning and evade detection, to electronic warfare and striking targets either on their own or in accordance with the rest of the force.

CCAs can harness cutting-edge disruptive technologies such as autonomy, machine learning and artificial intelligence (AI) to maximise the safety and performance of current and future fighter fleets for agile combat employment.

Deploying collaborative, mission-focused CCAs at a large scale is seen as a cost-effective and pragmatic solution to possess a formidable airpower capacity in response to proliferating hostile stealth fighters.

For example, the Russian Sukhoi Su-57 Felon fighter jet is equipped with 3D thrust vector jets for higher manoeuvrability. Operating additional autonomous uncrewed aerial systems (UAS) will render fighters more survivable as well as increase the probability of engagement with such a flexible aircraft.

**160 . Date: 07-02-2024Armed ISR / ISTAR - MALE - ContractSouth Korea Launches Development of Ship-Based UAVURL: https://www.uasvision.com/2024/02/07/south-korea-launches-development-of-ship-based-uav/**

South Korea launched the development of UAVs to be based on ROK Navy ships. The UAVs will also be tasked with reconnaissance and surveillance of northwestern islands. The main contractor and systems integrator is Hanwha Systems while Schiebel will provide the S-300 platform.

A domestic system development project for rotorcraft to be deployed aboard Republic of Korea (ROK) Navy ships and Marine Corps northwestern island units has begun in earnest.

The Defense Acquisition Program Administration (DAPA) said on the 29th,

“We will invest about 143.3 billion won from December 2023 to December 2028 to conduct the unmanned aerial vehicle (UAV) project for ship-based, northwestern islands reconnaissance under the supervision of Hanwha Systems.”

This UAV is the first rotorcraft developed by South Korea and can be operated on land or ships without runways. ROK Navy vessels and Marine Corps’ northwestern island units had previously been restricted from operating unmanned aerial vehicles.

In particular, the northwestern islands require more thorough surveillance and reconnaissance because of North Korea’s continuous provocations.

This UAV will be able to expand the reconnaissance range off the northwestern island by simultaneously using high-performance Electro-Optica/Infrared (EO/IR) cameras and multi-function radars, and monitor it 24 hours a day to identify and respond to signs of provocation from enemies or neighboring countries, the DAPA explained.

Kim Tae-gon, head of DAPA’s Advanced Technology Division side, said,

“We will do our best to develop them in a timely manner by cooperating with necessary forces and developers. The developed unmanned aerial vehicle will play a major role in deterring North Korea’s provocations by preemptively detecting and responding to threats through real-time monitoring and reconnaissance.”

He also predicted,

“The success of the development of the unmanned aerial vehicle system is expected to lead to the export of the unmanned aerial vehicle sector in the future, as the private sector will also use it in various island areas where the existing fixed-wing unmanned aerial vehicle operation is restricted, and K-Defense is succeeding in the global market.”

Schiebel’s S-300 was chosen as the platforms, and Hanwha Systems will be in charge of integrating the system.

Schiebel’s Camcopter S-300 UAV showcased during Euronaval 2022

Schiebel previously supplied the S-100 Camcopter to the ROK Navy.

The main objectives of the S-300 development are to provide solutions for land and sea operations, enhance anti-submarine warfare capabilities, and provide flexibility to integrate different types of radars.

This multipurpose vertical take-off and landing UAV is specifically designed for intelligence, surveillance, and reconnaissance operations for the military.

One of the notable features of the S-300 is that it can accommodate various payloads through multiple hard points, allowing for flexible installation options.

This UAV shares the same ground control station and payload fit as its predecessor, the S-100, allowing operators to transition seamlessly.

**161 . Date: 08-02-2024ISR / ISTAR - Small - ContractFrench Navy Orders Additional Airbus Maritime DronesURL: https://www.uasvision.com/2024/02/08/french-navy-orders-additional-airbus-maritime-drones/**

As part of the SMDM contract (“Systèmes de Mini Drones aériens embarqués de la Marine”), Survey Copter, an SME and Airbus Defence and Space subsidiary and a supplier of light tactical unmanned aerial systems has signed an additional firm order with the French Defence Procurement Agency (DGA) to supply the French Navy with 15 onboard systems (30 aircraft) of Aliaca fixed-wing electric UAS, plus associated training and integrated logistics support.

These new systems will be delivered from 2024 onwards, and will be used to equip new ships and ship types, and to enhance their onboard capabilities.

This additional order is part of the SMDM contract signed in 2020 with the DGA, which covered the initial supply of 11 systems (22 aircraft), associated training and integrated logistical support, intended to equip a first typology of vessels such as the high seas patrol boats (PHM), the new overseas patrol boats (POM) and the surveillance frigates (FS).

“We are very honoured to participate in the French government’s action at sea, and to continue supporting the French Navy in its many missions. This additional order confirms the relationship of trust we have with the DGA and the French Navy, and the quality, efficiency and reliability of our drones systems at sea,”

says Christophe Canguilhem, CEO of Survey Copter.

Certified and qualified by the DGA, and operational since 2022 as the French Navy’s “remote field glasses”, SMDM currently integrates and equips PHM, POM and FS to reinforce airborne surveillance, detection and identification capabilities. Embedded, the system can carry out various types of missions around ships, such as tactical situation awareness, combating illegal activities at sea, traffic surveillance, pollution detection, monitoring suspicious behavior in the vicinity of the ship, and coastal surveillance.

Since 2022, the SMDM has been deployed and operated in a number of successful missions and exercises. It has been deployed as part of the Corymbe mission in the Gulf of Guinea, in the fight against piracy and illicit trafficking; as part of the European Union’s EUNAVFORMED “IRINI” operation, a mission to monitor the United Nations embargo on arms imports to Libya; and in the Pacific to respond to threats to local communities, particularly in the fight against illegal fishing and trafficking.

Since September 4, 2023, the SMDM system has also been used in a coastal configuration to support search and rescue operations in the English Channel, led by the Gris-Nez (Nord-Pas-de-Calais) regional surveillance and rescue center (CROSS).

The experience acquired and the success of the SMDM in these different missions, thanks to its small logistical footprint, ease of use and discretion, led the DGA and the French Navy to order 15 additional systems to reinforce the State’s action at sea and extend its scope of intervention.

About Survey Copter Based in the Drôme region of France, Survey Copter has been an expert in light tactical UAS since 1996. An Airbus subsidiary since 2011, the company offers a wide range of products perfectly suited to ISR, protection or surveillance missions, for both military and civilian purposes. In 2023, the company’s turnover was €10 million. Survey Copter draws on a wide range of skills, such as the development of systems for airborne platforms, ground stations, autopilots, EO/IR payloads, expertise in data transmission, encryption and RVT (Remote Video Terminal), and offers a range of services including spare parts, training and operational maintenance. This know-how, demonstrated through the certification of its systems, enables Survey Copter to offer its customers safe, innovative UAS that meet their various needs and constraints.

**162 . Date: 08-02-2024Loitering Munition - Small - MarketRussia’s Purchase Price for Iranian Shahed-136 Drones RevealedURL: https://www.uasvision.com/2024/02/08/russias-purchase-price-for-iranian-shahed-136-drones-revealed/**

A hacker group called the Prana Network broke into the Iranian Revolutionary Guard Corps’ (IRGC) email servers and grabbed data on the sale of Shahed drones to Russia.

The group says it exfiltrated about 10 gigabytes of data from a company known as Sahara Thunder which acts as a front for the IRGC facilitating sales of Iranian arms to Russia. Iranian-supplied Shahed kamikaze drones have been a feature of the Ukraine War since Russia’s 2022 invasion.

The UAV’s designer and manufacturer is believed to be Shahed Aviation Industries Research Center, an Iranian firm likewise operating under the IGRC umbrella. Its delta-winged Shahed-131/136 variants are believed to have a range of approximately 500 to 900 miles.

But according to the internal Sahara Thunder documents seized and published by the Prana group two days after the Guardian piece, that estimate is well short of the mark. The documents show that a single Shahed costs $375,000 to produce. The hack also revealed that Russia and Iran negotiated a lower per unit price for a bulk buy.

An agreement conveyed in the documents set forth a price of $193,000 per Shahed for a 6,000 unit buy. A smaller order of 2,000 units would yield a $290,000 per Shaded sticker price. The two countries reportedly agreed to the larger buy, netting the Iranian government $1.8 billion from the sale after the addition of licensing fees.

The licensing fees cover local production of the drones in Russia. In January Russia announced that it had embarked on development of a less expensive version of the Shahed called the “Hawk” to be made entirely from off the shelf commercial components.

In the published documents, it is indicated that Russia, at least partially, conducts its financial operations and payments with Iran in gold. Specifically, the organization Alabuga Machinery transferred 2,067,795 grams of gold bars to the Iranian proxy company Sahara Thunder in February 2023. Presumably, this was payment for services and goods.

The prospect of 6,000 Shaheds with which Russia could stage a mass attack on Ukraine’s infrastructure is a disturbing one. If the country is able to produce the Hawk in numbers, it is still more concerning. A November report from the Washington DC-based Institute for Science and International Security (ISIS) which analyzed satellite imagery of a plant in Yelabuga, Russia (500 miles east of Moscow) found that significant progress was being made in standing up Hawk production.

A firm called JSC Alabuga is identified as the producer and as of the November report, it was not found on public U.S. or allied sanctions lists. Analysts differ as to whether Russia can produce the licensed Shaheds at a cost of approximately $50,000 per copy as it claims but its capacity to increase local production of the drones was positively projected by the ISIS report.

That potential explains the additional chunk of funds Russia paid in the $1.8 billion it handed over to Iran. However, the state of Russia’s economy and Iranian confidence in its ability to pay was likely reflected in the fact that some portion of the payments was provided in gold to Iran per the hacked documents.

If the cost information that Prana Network claims to have obtained is accurate, it represents a fascinating (if disturbing) insight into the lengths Russia is going to prosecute its war with cheap drones that aren’t as cheap as previously thought.

It also shows that while the Pentagon waivers on executing its Replicator drone initiative, Russia has moved out.

**163 . Date: 09-02-2024Armed ISR / ISTAR - HALE - General - PlatformBAE Unveils Mysterious Expendable DroneURL: https://www.uasvision.com/2024/02/09/bae-unveils-mysterious-expendable-drone/**

BAE Systems

has unveiled its latest attritable autonomous collaborative platform (ACP) based on the company’s “Concept 2” at this year’s World Defense Show in Riyadh. Showcased on the opening day, February 4, the new BAE ACP has been designed, BAE explains, to operate alongside future and current-generation combat aircraft.

[An ACP is a cost-effective, expendable unmanned system designed for teamwork in military operations, enhancing capabilities while minimising risk to human life.]

The latest design includes a new wing shape and low-observable features. The changes consider new wing assembly and production approaches, using electrical instead of hydraulic actuation systems. The company’s “Concept 2” system debuted at the Royal International Air Tattoo in 2022 and featured a main-wing and wide V-tail configuration.

Steve Reeves, head of business development and strategy for platforms in BAE Systems’ FalconWorks unit, explained to Aviation Week that the aircraft design was altered to improve its characteristics through digital engineering work.

“So, what you see here is a more optimized design, not just from a [low observable] perspective, but just as importantly, the cost point to the customer and manufacturing,” Reeves said.

“At the heart of this is developing affordable combat mass, which is really the step-change in how we can do things differently,” he added. “Concept 2″ is as large as a Hawk jet trainer and is envisioned to perform diverse missions, including intelligence, surveillance, reconnaissance, electronic warfare, and carrying air-to-ground and air-to-air weapons.”

BAE has funded the development of uncrewed and autonomous air system demonstrators for nearly 30 years. “We have got a program outline that would take us toward first flight and beyond, but the pace of that will depend on customer investment,” said Reeves.

There are already initiatives underway in Europe, India, South Korea, and the U.S. competing with this platform. An autonomous collaborative platform strategy is being finalized in the UK to set the country’s vision for such a capability. However, it is said that this system will have a global appeal.

Reeves stated that the company is showcasing the capabilities that customers will need for future combat rather than displaying them at the World Defense Show. However, numerous unmanned aerial systems (UAS) were on display at the show, indicating Riyadh’s significant interest in UAS capabilities.

Platforms like “Concept 2” cost roughly one-tenth the price of manned fighters but will increase once sensors and weapons are added.

According to Reeves, unmanned fighter planes have a shorter lifespan of just a few hundred hours than crewed fighter planes, which can last thousands of hours. In addition, electrical actuators are more suitable for unmanned fighter planes as they can spend most of their life in a storage container.

“We are keeping things as simple as they possibly can be, but as we as we look to the future, then we’re only limited by our imagination and customers, designers, producers,”

Reeves said.

**164 . Date: 09-02-2024Armed ISR / ISTAR - HALE - General - PlatformGeneral Atomics’ XQ-67A Off-Board Sensing Station Drone Breaks CoverURL: https://www.uasvision.com/2024/02/09/general-atomics-xq-67a-off-board-sensing-station-drone-breaks-cover/**

General Atomics Aeronautical Systems has released images of a brand new, fully-constructed advanced air combat drone called the XQ-67A. The company built it as part of a contract to support the U.S. Air Force’s secretive Off-Board Sensing Station (OBSS) program.

Though an explicit connection has not been made, there have been indications in the past that this design leverages work the company is doing on Gambit, a novel family of advanced drones that involves different airframes that can be mated to a modular common ‘core’ chassis.

The pictures of the XQ-67A shown in this story were taken at an undisclosed location. General Atomics, as well as Kratos, first received a contract under the OBSS program back in October 2021. The Air Force subsequently chose General Atomics alone to proceed to actually build and flight test its design.

The first XQ-67A UCAV inside a hangar

“General Atomics Aeronautical is very excited to introduce the XQ-67A Off-Board Sensing Station (OBSS) to the world for the first time. We think you’re looking at the future of unmanned combat air vehicles,” C. Mark Brinkley, a General Atomics spokesman, told The War Zone. “There is a lot of talk about UCAVs [Unmanned Combat Air Vehicles] and what the future might hold. But as people learn more about the XQ-67A OBSS and how the Air Force Research Laboratory and General Atomics have approached this project, they’ll discover it really is unlike anything they’ve seen so far.”

“Specifically, XQ-67A is an AFRL [U.S. Air Force Research Laboratory] program, and GA-ASI was selected to design, build, and fly that new aircraft,” Brinkley added. “Without getting into specifics, I can say that we are stepping through that program methodically and working closely with our government partners to hit all of the markers for the project and deliver on our promises. We’re focused on speed to ramp, accelerated design processes, and bringing true capability to the fight.”

The images we have now of the XQ-67A, which carries both General Atomics and AFRL markings, show that it has retractable tricycle landing gear, a broadly splayed v-tail, and a main wing with low, if any sweep. It also has a top-mounted dorsal engine intake and a stealthy chine line that wraps around the fuselage. The design is broadly similar in basic configuration to General Atomics’ own Avenger, as well as Boeing’s MQ-25 Stingray tanker, and Kratos’ XQ-58 Valkyrie.

The XQ-67A has a pair of air data probes fitted to the nose and high-visibility orange markings on its wings and tail, which are all indicative of an aircraft bound for flight testing. The XQ-67A’s overall markings are very similar to those applied to the Air Force’s XQ-58As, as well as those now operated by the U.S. Marine Corps.

**165 . Date: 12-02-2024Armed ISR / ISTAR - RequirementUS Army Cancels Future Attack Reconnaissance Aircraft Program in Favour of UASURL: https://www.uasvision.com/2024/02/12/us-army-cancels-future-attack-reconnaissance-aircraft-program-in-favour-of-uas/**

To meet emerging capability requirements in a resource constrained environment, the U.S. Army has announced it will rebalance its aviation modernization investments across new and enduring platforms. Warfighting is changing more rapidly than it has in decades, and the Army is continuously transforming based on lessons learned and a sober assessment of the modern battlefield.

The Army will discontinue development of the Future Attack and Reconnaissance Aircraft at the conclusion of prototyping activities while continuing investment in the Future Long Range Assault Aircraft, and making new investments in UH-60 Blackhawk, and CH-47F Block II Chinook.

The Army will also phase out operations of systems that are not capable or survivable on today’s battlefield including the Shadow and Raven unmanned aircraft systems. The Army will increase investments in cutting-edge, effective, capable and survivable unmanned aerial reconnaissance capabilities and the procurement of commercial small unmanned systems. These investments will be continuous and agile to stay ahead of emerging battlefield requirements.

RQ-7Bv2 Shadow UAS

“The Army is deeply committed to our aviation portfolio and to our partners in the aviation industrial base,” said Secretary of the Army Christine Wormuth. “These steps enable us to work with industry to deliver critical capabilities as part of the joint force, place the Army on a sustainable strategic path, and continue the Army’s broader modernization plan which is the service’s most significant modernization effort in more than four decades.”

“We are learning from the battlefield—especially in Ukraine—that aerial reconnaissance has fundamentally changed,” said the Chief of Staff of the Army, General Randy George. “Sensors and weapons mounted on a variety of unmanned systems and in space are more ubiquitous, further reaching, and more inexpensive than ever before. I am confident the Army can deliver for the Joint Force, both in the priority theater and around the globe, by accelerating innovation, procurement and fielding of modern unmanned aircraft systems, including the Future Tactical Unmanned Aircraft System, Launched Effects, and commercial small unmanned aircraft systems.”

As part of this transformational rebalancing, the Army will:

These decisions free up resources to make critical new investments in Army aviation. Going forward, the Army will:

In reviewing the FARA program in light of new technological developments, battlefield developments and current budget projections, Army leaders assessed that the increased capabilities it offered could be more affordably and effectively achieved by relying on a mix of enduring, unmanned, and space-based assets.

Bell 360 Invictus developed for the FARA program

Moreover, without reprioritizing funds in its constrained aviation portfolio, the Army faced the unacceptable risk of decline and closure of production and sustainment lines for the Chinook and Blackhawk fleets. The Army’s new plan will renew and extend production of both aircraft, while also sustaining the experienced workforce and vendor base that underpin the Army’s aviation capabilities.

Although Army leadership had to make difficult tradeoffs between programs, this plan will allow the Army to continue building modern capability across its aviation portfolio while funding other critical priorities in future budgets.

The Army remains committed to its most ambitious modernization effort in more than 40 years, which has seen significant successes such as the recent delivery and fielding of the Mid-Range Capability, M-10 Booker, Next Generation Squad Weapon, Armored Multipurpose Vehicle, Integrated Air and Missile Defense, Precision Strike Missile, Mounted and Dismounted Assured PNT, Manoeuvre Range Air Defense, Lower Tier Air and Missile Defense Sensor, Enhanced Night Vision Goggle-Binocular, and entering the engineering and manufacturing development phase for FLRAA.

**166 . Date: 19-02-2024Armed ISR / ISTAR - MALE - ContractGeneral Atomics Gets $43M US Navy MQ-9A Support ContractURL: https://www.uasvision.com/2024/02/19/general-atomics-gets-43m-us-navy-mq-9a-support-contract/**

General Atomics Aeronautical Systems Inc.

, Poway, California, is awarded a $43,131,929 cost-plus-fixed-fee order (N0001924F0008) against a previously issued basic ordering agreement (N0001922G0006).

This order provides for engineering and logistics and support services, capability development and sustainment in support of the Marine Air-Ground Task Force Unmanned Aircraft System Expeditionary/Medium Altitude Long Endurance MQ-9A for the Marine Corps.

Work will be performed in Poway, California (42%); Indo-Pacific Command Theater (20%); Yuma, Arizona (13%); Kaneohe Bay, Hawaii (11%); Patuxent River, Maryland (7%); Cherry Point, North Carolina (7%); and Mechanicsburg, Pennsylvania (1%), and is expected to be completed in February 2025.

Fiscal 2024 operations and maintenance (Navy) funds in the amount of $9,000,000; and fiscal 2024 aircraft procurement (Navy) funds in the amount of $8,485,345 will be obligated at the time of award, $9,000,000 of which will expire at the end of the current fiscal year.

Naval Air Systems Command, Patuxent River, Maryland, is the contracting activity.

**167 . Date: 22-02-2024Armed ISR / ISTAR - MALE - SafetyHouthis Down Second US Air Force MQ-9 in Three MonthsURL: https://www.uasvision.com/2024/02/22/houthis-down-second-us-air-force-mq-9-in-three-months/**

A U.S. Air Force MQ-9 Reaper was shot down off the coast of Yemen by Houthi fighters, defense officials said Feb. 20. It was the second time that an Air Force MQ-9 was downed by the Houthis since November as the Iranian-backed Houthis pursue a months-long campaign against commercial shipping and naval vessels in the region with drones, cruise missiles, and anti-ship ballistic missiles.

Reapers cost roughly $30 million apiece.

“Initial indications are that it was shot down by a Houthi surface-to-air missile,”

Deputy Pentagon Press Secretary Sabrina Singh told reporters.

The U.S. military believes the drone crashed into the Red Sea in the early morning hours of Feb. 19 local time. Footage circulating on social media shows the wreckage of a drone that was recovered by the Houthis, as well as video of the purported engagement released by the group.

Forces under U.S. Central Command (CENTCOM) have been taking out Houthi targets in Yemen since mid-January as the U.S. and its allies seek to deter attacks on shipping in the Red Sea and Gulf of Aden. Singh said that she did not know if the MQ-9 that was shot down earlier this week was armed.

“These are multimillion-dollar platforms,” said Singh. “The commander’s using them to keep commercial mariners safe, to keep our U.S. service members safe in the Red Sea and the Gulf of Aden. So, of course, there’s a risk incurred, but it’s something that we’re going to continue to do to ensure that freedom of navigation can continue to be upheld, the rule of law can be upheld, and that commercial shipping can continue, whether it be in the Red Sea or the Gulf of Aden.”

Following the shoot-down of the MQ-9 on the morning of Feb. 19, a surface-to-air missile launcher was located and destroyed by U.S. forces in Houthi-controlled areas of Yemen at approximately 5 p.m., CENTCOM said in a Feb. 20 statement. CENTCOM did not say if that strike was related to the downing of the MQ-9.

In addition to the drone shot down near Yemen in November 2023, the Houthis have also shot down U.S. drones in 2019 and 2017. The U.S. has lost two more MQ-9s in the past year when one was shot down over Iraq in January, and another was forced to crash into the Black Sea after being run into by a Russian fighter in March 2023.

Despite daily strikes by U.S. forces, the Houthis appear determined to keep up their attacks.

“We know that Iran is continuing to supply them with what they are continuing to launch at U.S. vessels and commercial mariners,” Singh said. “Every single day, I think our dynamic strikes or coalition strikes absolutely have an impact. But we at no point said that we’re wiping all of their capabilities off the map. We know that they have a large inventory, a large warehouse, and they’re going to continue to use it.”

**168 . Date: 23-02-2024RequirementUS Army Seeks More Effective UAV in the ArcticURL: https://www.uasvision.com/2024/02/23/us-army-seeks-more-effective-uav-in-the-arctic/**

After the US Army announced it would not buy any more RQ-7 Shadows, an11th Airborne Division official told Janes that the unmanned aerial vehicle (UAV) could not be used in cold temperatures.

The Shadow is not approved to operate at temperatures below -20ºF, Lieutenant Colonel James Jones, assistant G3, the assistant officer in charge of operations for the 11th Airborne Division, said in an interview. The UAV was deployed during the the Joint Pacific Multinational Readiness Center (JPMRC) 24-02 training rotation because of unseasonably warm temperatures, but the army needs a new intelligence, surveillance, and reconnaissance (ISR) asset for its brigade commanders, he said.

“Everything up here needs to be rated at least a -40[ºF] for it to really be useful,”

Lt Col Jones said. The 11th Airborne Division attempted to get approval for the Shadow to fly under the lower limits of its approved temperatures.

If the UAV breaks while operating outside the approved ranges, the brigade commander assumes the risk, he explained. The approval was not given, but the UAVs were able to be deployed because temperatures reached as high as 39ºF and hovered in the single and low double digits.

“If the exercise had moved two weeks to the left, then it would have been the -40ºF, maybe -45ºF, and it would have been too cold to fly that asset,”

Lt Col Jones said. The ISR capability is critical to the brigade commander’s ability to connect sensor information to fires, he noted.

**169 . Date: 28-02-2024Component - Contract - PayloadGeneral Atomics Gets $31M US Navy Contract for Development of EW PodsURL: https://www.uasvision.com/2024/02/28/general-atomics-gets-31m-us-navy-contract-for-development-of-ew-pods/**

General Atomics Aeronautical Systems Inc.,

Poway, California, is awarded a $31,003,429 cost-plus-fixed-fee order (N0001924F0168) against a previously issued basic ordering agreement (N0001922G0006).

This order provides non-recurring engineering for the installation, integration, systems test and evaluation, calibration, and logistics in support of the development and production of electronic warfare pods for the Marine Corps.

Work will be performed in Poway, California (45%); Patuxent River, Maryland (45%); and Greenville, Texas (10%), and is expected to be completed in July 2025.

Fiscal 2024 research, development, test and evaluation (Navy) funds in the amount of $13,400,000; and fiscal 2023 research, development, test and evaluation (Navy) funds in the amount of $9,858,485 will be obligated at the time of award, $9,858,485 of which will expire at the end of the current fiscal year. Naval Air Systems Command, Patuxent River, Maryland, is the contracting activity.

**170 . Date: 29-02-2024Armed ISR / ISTAR - MALE - Contract - Detect & AvoidGeneral Atomics Gets $31M US Navy MQ-9A Detect and Avoid System ContractURL: https://www.uasvision.com/2024/02/29/general-atomics-aeronautical-gets-31m-us-navy-mq-9a-detect-and-avoid-system-contract/**

General Atomics Aeronautical Systems Inc

., Poway, California, is awarded a $30,885,042 cost-plus-fixed-fee order (N0001924F5565) against a previously issued basic ordering agreement (N0001922G0006).

This order provides for the development, integration, test, and certification of the MQ-9A Detect and Avoid System for the Marine Corps. Work will be performed in Poway, California (85%); and Patuxent River, Maryland (15%), and is expected to be completed in April 2026.

Fiscal 2024 research, development, test, and evaluation (Navy) funds in the amount of $14,174,839 will be obligated at the time of award, none of which will expire at the end of the current fiscal year.

Naval Air Systems Command, Patuxent River, Maryland, is the contracting activity.

**171 . Date: 07-03-2024Research - Small - General - Engine / PowersourceHien Aero Technologies Conducts Asia’s First Gas Turbine eVTOL Levitation TestURL: https://www.uasvision.com/2024/03/07/hien-aero-technologies-conducts-asias-first-gas-turbine-evtol-levitation-test/**

On March 1, 2024, Japan’s Hien Aero Technologies made headlines by successfully conducting Asia’s first levitation test for a large, unmanned electric Vertical Takeoff and Landing (eVTOL) aircraft powered by a gas turbine. This landmark event marks a significant step forward in the development of hybrid eVTOLs, showcasing the potential for longer flight ranges and higher operational efficiency compared to their electric counterparts.

The test involved the “HIEN Dr-One V2B,” an unmanned aerial vehicle, which levitated for approximately one minute in an outdoor setting at a local airport. This achievement follows Hien’s announcement of beginning ground testing for gas turbine generators in 2023 and the successful hybrid levitation of the proof-of-principle aircraft “HIEN Dr-One V1” in June of the same year. The completion of this test is a critical milestone, demonstrating the feasibility and reliability of gas turbine hybrid power in eVTOLs.

Looking ahead, Hien Aero Technologies plans to commence sales of the gas turbine generator “DRAGON,” the hybrid system “Butterfly” that powers it, and the large unmanned aircraft “HIEN Dr-One” in 2025. By 2030, the company aims to develop a six-seater manned eVTOL, paving the way for the future of air taxis. This progress signifies a leap towards reducing the constraints faced by pure electric eVTOLs, such as limited cruising range and the need for extensive charging infrastructure, by utilizing the high energy density of gas turbines.

The gas turbine hybrid eVTOLs developed by Hien Aero Technologies offer promising solutions for delivering goods to remote islands, remote areas, and depopulated regions, where traditional transportation methods fall short. Furthermore, the ability of these aircraft to generate power presents an invaluable asset in disaster response scenarios, potentially providing emergency power supply in critical situations. The introduction of HIEN Dr-One and its hybrid technology stands to revolutionize logistics and emergency services, offering unprecedented operational capabilities.

The successful levitation test conducted by Hien Aero Technologies not only represents a breakthrough in aviation technology but also heralds a new era of efficient and versatile air transportation. As the company moves forward with its ambitious plans, the potential for hybrid eVTOLs to transform industries and communities around the world becomes increasingly clear, promising a future where the sky is truly the limit.

**172 . Date: 07-03-2024ISR / ISTAR - Tactical - GeneralOmni Táxi Aéreo to Undertake First Long-Range Unmanned Offshore Missions in BrazilURL: https://www.uasvision.com/2024/03/07/omni-taxi-aereo-to-undertake-first-long-range-unmanned-offshore-missions-in-brazil/**

Omni Táxi Aéreo,

Brazilian affiliate of Omni Helicopters International (OHI), a major Latin America air mobility solutions provider, announced that it has been awarded two contracts from Petrobras to operate unmanned aerial vehicles on offshore missions.

The missions will perform beyond-line-of-sight (“BVLOS”) flights, carrying 50 kg payloads to offshore facilities and conducting flights between facilities. These will be the first UAV missions of this kind in Brazil.

The contracts awarded by Petrobras, Brazil’s leading energy company, were signed with Omni Taxi Aéreo and will be supported by OHI Unmanned, OHI´s drone division. As well as cargo transportation, the project will gather data on UAV and helicopter airspace sharing which represents a crucial step in the development of regular unmanned air logistics.

OHI is at the forefront of sustainable solutions supporting the orderly energy transition – this project is expected to open the door to significantly reduced costs and CO2 emissions for smaller and urgent payloads replacing the use of conventional helicopters and boats.

Commenting on the contract, Roberto Coimbra, CEO of Omni Táxi Aéreo, said:

“Our nearly 20-year relationship with Petrobras has been guided by innovation and we are pleased that they have chosen us for this journey.”

For his part, João Welsh, CEO of OHI Unmanned, said:

‘We are very pleased to collaborate with Petrobras. With brilliant innovation and state-of-the-art technology, we can seamlessly integrate unmanned vehicles into mission-critical missions, delivering first-class service to customers and contributing to sustainable outcomes.”

The first operational flights are expected in the second quarter of 2024.

**173 . Date: 07-03-2024Loitering Munition - Small - GeneralRussia Unveils Shahed Drone Production LineURL: https://www.uasvision.com/2024/03/07/russia-unveils-shahed-drone-production-line/**

For the first time, the Russians demonstrated their new workshop, which is producing Geran loitering munitions. The released footage captures small teams of workers assembling the fuselage of the drone.

Some of the Geran drones are painted black, while others remain light gray. Another part is also covered with a special radio-absorbing material.

Iranian Shahed-136 loitering munitions under the name Geran are widely used during the Russian invasion of Ukraine The footage captures only one of the stages of drone assembly.

The Geran drones manufactured in the workshop do not yet have warheads and other parts necessary for flight.

In addition, the issue of Russia’s dependence on Iranian parts remains apparent. It was recently reported that a plant for assembling drones from Iranian spare parts was launched in Russia in April 2023. By 2025, production is to switch to a fully closed cycle using Russian parts.

The Lodka project for the production of drones, which cost Russia RUB 108.5 billion (USD 1.2BN), involves the construction of a plant and the production of 6,000 drones within 2.5 years.

The assembly of Iranian drones in Russia involves a whole network of enterprises responsible for the production of mechanical parts, fuselage, certain electronics elements, etc. It is also worth noting that the interests of the Russian military and political leadership in the production of Iranian drones are not limited to Shahed-136 drones.

**174 . Date: 08-03-2024Component - General - Engine / PowersourceWave Engine Corp. Demonstrates First Flight of Pulsejet Powered UAVURL: https://www.uasvision.com/2024/03/08/wave-engine-corp-demonstrates-first-flight-of-pulsejet-powered-uav/**

The North American Wave Engine Corporation, a developer of affordable next-gen propulsion technology and aerial systems, has demonstrated complete flight capability on a UAV using a jet engine that requires no moving parts. A demonstration flight included self-powered take-off, climb-cruise and landing.

The propulsion system is generally the most expensive and complex component of a jet powered aircraft, and this technological development signals major improvements for the cost and rapid-producibility of future jet powered aircraft.

Wave engines\* are a class of aircraft engines that operate using pressure waves instead of rotating machinery. Intermittent combustion inside a hollow tube produces pressure waves that push hot gases and produce thrust. Wave Engine Corp.’s proprietary technology enables high speeds and allows for an order-of-magnitude reduction in the cost and complexity of jet propulsion, which is a critical enabler for an increasing number of applications that call for affordable and rapidly-producible jet propulsion systems and aircraft.

For the demonstration flight, a 50+ lbf (222+ N) thrust wave engine was used as the sole powerplant on a 100 lbs (45 kg) gross weight Conventional Take-Off and Landing UAV. Remote instant start on liquid fuel was also demonstrated as part of the flight sequence.

The company has developed engines ranging from 50 lbf (222 N) to 250 lbf (1112 N) maximum thrust suitable for aircraft ranging from 100 lbs (45 kg) to 1000 lbs (450 kg) gross weight, and demonstrated operation on gasoline/petrol (87 Octane), kerosene-based fuel (Jet-A/JP-8) and sustainable ethanol-based biofuel (E85).

The company also announced that it had successfully demonstrated multiple mid-air starts and operated its engines at airspeeds up to 200 mph, limited only by the practical limits of the test facility.

Additionally, the company has demonstrated Thrust Specific Fuel Consumption (TSFC) levels under 2.0 lbs/lbf-hr to rival the efficiency of turbine-based engines, and performance continues to improve as development progresses.

“We continue to push the performance and flight envelope,” said Daanish Maqbool, CEO of Wave Engine Corporation. “We have worked for years to harness the power of sound and fire, and we believe it is going to change the industry.”

The company also announced its launch product, the 50+ lbf thrust J-1 engine, and welcomed potential partners for inquiries and demonstrations.

While you can read more here about how pulsejets work, as Wave Engine describes, a simple explanation is that they “operate using pressure waves instead of rotating machinery. Intermittent combustion inside a hollow tube produces pressure waves that push hot gases and produce thrust.”

Pulse jet schematic. First part of the cycle: (1) air intake, mixed with fuel (2). Second part: the valve (3) closes and the ignited fuel-air mix propels the craft. Cyrille Dunant/Gregor Shapiro/Wikimedia Commons

The high speeds offered by pulsejets are also a factor in their favor, especially when compared to the propeller-based powerplants otherwise frequently found on many smaller military drones.

While pulsejet designs have been around for a century, the technology has been largely dismissed by the commercial aviation industry for being too loud and difficult to regulate during flight. They are used in model aircraft, drones and industrial applications. Pulsejet designs have been tried on experimental helicopters, and there is the belief, as Wave Engine Corp. shares, that the pulse detonation engine (PDE) promises higher efficiency than turbofan jet engines.

Boeing has a proprietary pulsejet engine technology called Pulse Ejector Thrust Augmentor (PETA), while aircraft engine makers Pratt & Whitney and General Electric have PDE research programs that use pulsejet engines for testing concepts early in the design phase. Boeing may use it on its Light Aerial Multi-Purpose Vehicle (LAMV) for future combat scenarios.

A Schreder glider is tested with a Wave Engine pulsejet engine

Wave Engine first tested the technology in 2020 by mounting a prototype engine on a piloted glider and turning it on in mid-flight. The latest unmanned flight had the engine integrated into the UAV. Of course, going from a 100-pound prototype to a commercial jet is a big leap. It will involve years of testing, development and certification for the technology to be proven, as well as getting aircraft manufacturers to design its jets around the engine.

About Wave Engine CorporationBased in Baltimore, MD, Wave Engine Corp. is a focused group of scientists, engineers and former Fortune 500 executives that is leveraging recent technological developments in propulsion, acoustics and combustion control to develop the next generation of propulsion and aircraft systems. With its unique set of technical experts, test facilities and intellectual property, Wave Engine Corp. is committed to leadership in technology and product development for an emerging breed of jet propulsion and aircraft systems.\*The wave engine is a contemporary variation of the pulsejet engine, which was first used on German V-1 guided missiles in WWII.

**175 . Date: 13-03-2024Armed ISR / ISTAR - MALE - ContractMaldives Receives Six Bayraktar TB2 UCAVs Amid Tensions with IndiaURL: https://www.uasvision.com/2024/03/13/maldives-receives-six-bayraktar-tb2-ucavs-amid-tensions-with-india/**

Turkey has started supplying the Maldives with its combat drone, Bayraktar TB2, amid high tensions between the island nation and India. The agreement between the two countries foresees a supply of a command control station and six TB2 unmanned combat aerial vehicles (UCAVs) to meet the security requirements of Maldivian armed forces.

The shipment comes just months after Maldives President Mohamed Muizzu visited Turkey in November 2023. Muizzu talked with President Recep Tayyip Erdoğan and visited several Turkish defense industry companies.

The drone supply comes amid growing tensions between the Maldives and India since Muizzu came to power last year. The island nation, which traditionally had close ties to India, has been pivoting toward Beijing since Muizzu was elected in October on a promise to end the country’s pro-India stance.

He has made an issue of the presence of the Indian troops in his country. He has pushed New Delhi to withdraw its nearly 80 military personnel stationed there to provide technical and medical assistance.

Developed by Baykar, the TB2s have helped swing conflicts in multiple countries, such as Azerbaijan, Libya and Ukraine, where they played a pivotal role in countering Russian forces early into Moscow’s invasion.

Baykar made exports worth a record $1.76 billion in 2023, it said on Thursday. It accounted for over 30% of Turkish defense companies’ all-time high sales of about $5.5 billion.

**176 . Date: 14-03-2024General - Engine / PowersourceAutonomous Overhead Powerline Recharging for Uninterrupted Drone OperationsURL: https://www.uasvision.com/2024/03/14/autonomous-overhead-powerline-recharging-for-uninterrupted-drone-operations/**

Researchers at the Institute of Mechanical and Electrical Engineering Department at the University of Southern Denmark have just published a study demonstrating fully autonomous self-recharging drone system capable of long-duration sustained operations near powerlines.

The drone is equipped with a robust onboard perception and navigation system that enables it to locate powerlines and approach them for landing. A passively actuated gripping mechanism grasps the powerline cable during landing after which a control circuit regulates the magnetic field inside a split-core current transformer to provide sufficient holding force as well as battery recharging.

The system is evaluated in an active outdoor three-phase powerline environment. They demonstrated multiple contiguous hours of fully autonomous uninterrupted drone operations composed of several cycles of flying, landing, recharging, and takeoff, validating the capability of extended, essentially unlimited, operational endurance.

A combined gripper and charger design was presented, upgrading the technology from previous work. A mission autonomy system was presented, integrating previous modules for drone powerline operations. This was validated through multiple cycles of flying and recharging over a span of multiple contiguous hours.

The drone system is equipped with an onboard perception and autonomy component which detects overhead power lines and navigates the drone towards them. The gripper on top of the drone allows it to grasp a power line and recharge its batteries.

While recharging, the drone emits a characteristic sound from its gripper and energy harvester. This test, which was carried out over the span of two and a half hours shows the system continuously cycle between its flying and recharging modes.

The drone remained fully autonomous for the duration of the test and also demonstrated a recovery from an aborted landing. The current in the power line was approximately 300 amperes from which the energy harvesting device was able to charge the battery with 50 watts. A higher power line current would result in a proportionally higher charging power.

The integrated system was demonstrated to operate for more than two hours with five inspection/charging cycles, proving its feasibility.

Future work includes improving the system robustness and testing in more remote locations, expanding the complexity of the mission by adding inspection features, and investigating the system’s robustness to adverse weather conditions.

The full 8-page document can be accessed here.

**177 . Date: 15-03-2024Loitering Munition - Mini - ContractUS Army Wants $120M for LASSO Kamikaze Drones in Fiscal 2025URL: https://www.uasvision.com/2024/03/15/us-army-wants-120m-for-lasso-kamikaze-drones-in-fiscal-2025/**

The US Army is asking lawmakers for $120.6 million to procure Low Altitude Stalking and Strike Ordnance (LASSO) production systems in fiscal 2025 as the U.S. military moves to beef up its arsenal of loitering munitions.

LASSO is a new-start program for fiscal 2025 that’s part of the service’s vision for a family of low-altitude UAS that are “semi-autonomous (human-in-the-loop) unmanned aerial systems that improves the Infantry Brigade Combat Team (IBCT) lethality in terms of stand-off and destruction against dismounted formations, armored vehicles, and tanks,” according to newly released budget justification documents.

The goal of the project is to make infantry brigades as lethal as armored brigades, according to the Army.

Unlike traditional munitions, loitering munitions — also known as kamikaze drones or one-way attack UAS — can fly around until they identify a target. And unlike armed unmanned aerial systems that launch missiles, kamikaze drones destroy their target by crashing into it. They can be armed with a warhead to enhance their potency.

The Army describes the LASSO capability as a lightweight, man-portable weapon that can operate day or night. It includes all-up rounds with a launch-and-delivery system and payload.

It also comes with a fire control system that consists of the fire control unit, ground data link and terminal, and other ancillary equipment.

“LASSO can range less than or equal to 20km (straight line with auxiliary antenna) with a flight endurance that enables the Soldier to make multiple orbits within the IBCT typically assigned battlespace, to acquire and attack targets within and beyond current crew served and small arms fire. The range/endurance enables the unit to utilize reach back capability and maximize standoff … from enemy fires, significantly reducing risk to the Soldier,” according to budget justification documents.

“Unlike existing direct and indirect fire weapon systems, LASSO’s discreet payload and unique capability delivers Soldiers the ability to abort against targets in a dynamic situation (e.g., use of human shields) or prosecute targets that would have been deemed non-viable in past due to the higher collateral damage associated with alternative munitions,” officials wrote. “The LASSO base capability will be optimized to defeat tanks rapidly and precisely for IBCTs. Follow on increments will support future capabilities for company and below echelons. Future increments will focus on additional range increases, enhanced lethality, and advanced payload options (personnel, hard sites, etc.).”

The $121 million that the Army is requesting would support the procurement of 54 fire control units, 434 all-up rounds and 144 reconnaissance, surveillance and target acquisition components.

The Army has picked AeroVironment’s Switchblade 600 for the first increment of LASSO. However, the service doesn’t intend for it to be a winner-take-all program for industry.

“We’re gonna have multiple variants and we’re gonna have competition. So, to meet the urgent need, we’ve gone sole source to a limited number of SB 600, which is a very good system. But there’s a lot of companies in this space with a lot of good tech. So, we want to have really continuous competition because different companies have things that fit different parts of the mission space better … This is one where I think it’d be unwise to pick one at the start and just say, ‘Nope, this is it. Nobody else gets anything. This one company is it.’ There’s too much competition in this space. We want to leverage that innovation,”

Assistant Secretary of the Army for Acquisition, Logistics and Technology Doug Bush said in an interview with DefenseScoop at the Reagan National Defense Forum in December.

For loitering munitions with modular payloads, the Army would like to retain some flexibility on what those payloads are, based on the service’s needs, Bush said last week during a meeting with reporters to preview the fiscal 2025 budget request.

“We might be heavy one year in [intelligence, surveillance and reconnaissance] and heavy the next year on strike,” he said.

The newly released budget justification documents did not include any additional funding for LASSO beyond fiscal 2025.

**178 . Date: 21-03-2024Cargo - Tactical - General - PlatformRotor Technologies and Robinson Helicopter Company Collaborate on Uncrewed Helicopter TechnologyURL: https://www.uasvision.com/2024/03/21/rotor-technologies-and-robinson-helicopter-company-collaborate-on-uncrewed-helicopter-technology/**

Rotor Technologies, Inc.

and Robinson Helicopter Company jointly displayed the R550X, an uncrewed helicopter based on the Robinson R44 Raven II, at Helicopter Association International’s HAI Heli-Expo in Anaheim, California.

The R550X is the first production uncrewed aircraft to be built on a Robinson platform. Capable of lifting heavy loads up to 1,200 pounds 550 kilograms) with no pilot onboard, the R550X is designed to conduct agricultural, utility, maritime, and cargo operations without exposing pilots to hazardous flight environments.

The Spirit of New Hampshire, a static prototype of the R550X that was recently dedicated by New Hampshire Governor Chris Sununu, was on display at Heli-Expo from February 27 to February 29, 2024, alongside a Robinson R66 police helicopter. Visitors interacted with the R550X’s synthetic vision, camera, and LIDAR systems, which offer 360-degree situational awareness even at night and in low-visibility conditions.

Governor speaking at podium

Heli-Expo 2024 marked a major leadership transition for Robinson Helicopter Company, with David Smith named as the company’s new president and CEO. Smith is committed to the company’s legacy of innovation and growth. With his experience and fresh perspective, he plans to continue the culture of excellence and collaboration, driving the company forward with new product development initiatives, and expanded manufacturing capabilities. Smith recognizes the importance of staying at the forefront of technological advancements like Rotor’s.

“With a 50-year legacy of success, I am honoured to lead the company into the next 50 years of vertical flight,” said Smith. “I look forward to working with the more than 400 service centers and dealers and the more than 1,100 employees of RHC as we pursue new products, markets, partnerships, and technologies.”

The R550X is an important project for Robinson’s customers and the future of light helicopters, where the adoption of digital systems and higher levels of automation will drive safety, mission capability, and scalability. At Heli-Expo, Rotor CEO Hector Xu and Smith celebrated milestones in the R550X program and plans to begin low-rate production.

“David and I share a common product vision,” said Xu. “Our collaboration will combine Rotor’s technology with Robinson’s dynamic and scalable supply chain to deliver the world’s most capable commercial uncrewed VTOL.”

**179 . Date: 21-03-2024Armed ISR / ISTAR - MALE - Safety - NavigationUS Reaper Made in Emergency Landing in Poland Amid Russia GPS AttacksURL: https://www.uasvision.com/2024/03/21/us-reaper-made-in-emergency-landing-in-poland-amid-russia-gps-attacks/**

A U.S. military Reaper made an emergency landing during a flight in Polish airspace on Tuesday, according to U.S. and Polish authorities, as spikes in GPS jamming across NATO’s eastern flank deepen concerns over the airspace around the Baltic Sea.

A U.S. airborne drone made an emergency landing near the town of Mirosławiec in northwestern Poland at an unspecified time after 11 p.m. local time (6 p.m. ET), the Polish General Command of the Armed Forces said in a post to social media. Warsaw’s military shared an image of an MQ-9 Reaper in the post, but Polish military officials did not offer an explanation for why the drone made the emergency landing.

The Pentagon confirmed on Tuesday that a remotely piloted MQ-9 used by U.S. Air Forces in Europe had made an emergency landing at the site, adding the drone was

“conducting routine training operations when it lost connection with the command station, affecting their ability to operate the aircraft.” “Preparations for recovery are currently underway and investigation of the incident is in progress,” the U.S. Defense Department added in a statement to Newsweek. “We are thankful to our Polish partners for their assistance.”

The emergency landing has raised questions over whether the U.S. military’s drone activity could be linked to the jamming or spoofing of Global Positioning System (GPS) and broader Global Navigation Satellite Systems (GNSS) signals that has plagued eastern Europe and the Baltic region. Interfering with these signals can confuse manned or unmanned aircraft, or make their navigation systems believe they are in a different location.

Officials and experts have pointed to Russian activity, particularly around the Baltic region of Kaliningrad. This is a Russian territory sandwiched between NATO members Poland and Lithuania and serves as a base for one of Russia’s major naval fleets.

A senior Estonian military commander pointed the finger at Moscow earlier this year for upticks in GPS jamming across eastern Europe. Russia’s skill at using electronic warfare is “quite strong,” General Martin Herem, who heads up Estonia’s Defense Forces, told Bloomberg in late January. Sweden’s Lieutenant Colonel Joakim Paasikivi told Swedish media in the same month that he considered the GPS interference the result of “Russian influence activities or so-called hybrid warfare.

GPS interference can have military purposes, and Russia is believed to have significant electronic warfare (EW) resources based at Kaliningrad.

“Russian armed forces have a wide spectrum of military equipment dedicated for GNSS interference, including jamming and spoofing, at varying distances, duration and intensity,” a Lithuanian defense official told Newsweek earlier this month.

“Building an atmosphere of threat and a sense of helplessness in society is undoubtedly one of the goals that Russia is pursuing”

with jamming and spoofing, a Polish Defense Ministry official added at the time.

Aircraft flying close to the Baltic region, and several NATO nations, have reported interference with their GPS signals. Unnamed pilots told Forbes earlier this year that they had started to switch off GPS navigation when passing close to the Baltic Sea and its surrounding countries in favor of other systems, such as inertial navigation.

Publicly available GPS jamming and interference tracking shows high levels of interference in northeastern Poland on Monday, and spots of interference in the northwest of the country close to the drone’s landing site.

The drone touched down in a “secured, uninhabited area,” and an investigation is underway, the Polish military said.

**180 . Date: 28-03-2024Armed ISR / ISTAR - MALE - ContractGeneral Atomics Gets $53M MQ-9 Support Contract for UKURL: https://www.uasvision.com/2024/03/28/general-atomics-gets-53m-mq-9-support-contract-for-uk/**

General Atomics Aeronautical Systems Inc.,

Poway, California, has been awarded a $53,176,133 cost-plus-fixed-fee contract for MQ-9 logistical and ground control station support.

The scope of the contract will include field service representatives, repair and return, as well as technical support tasks for the United Kingdom Royal Air Force. This contract is the result of a sole-source acquisition.

Work will be performed outside of the continental U.S. and is expected to be complete March 31, 2025. Foreign Military Sales funds in the amount of $53,176,133 are being obligated at the time of award.

The Air Force Life Cycle Management Center, Wright Patterson Air Force Base, Ohio, is the contracting activity (FA8620-19-C-2003).

**181 . Date: 03-04-2024RegulationBritain’s 165-Mile Long ‘Drone Superhighway’ will be Completed this SummerURL: https://www.uasvision.com/2024/04/03/britains-165-mile-long-drone-superhighway-will-be-completed-this-summer/**

The world’s first drone superhighway will open in the UK between June and early July, allowing pilotless drones to make high-speed deliveries across the country. Developed by drone software provider Altitude Angel, the 165-mile-long Skyway network will connect Coventry in the Midlands to Milton Keynes in the Southeast.

However, sceptics have warned that the drone highway ‘inevitably poses risk’ for the privacy and safety of Britons living in its flight path.

Speaking to MailOnline, Chris Cole, director of campaign group Drone Wars, said:

‘While the drone industry are incredibly happy about this, for people who end up living under the drones it may well end up being super annoying and super intrusive.’

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Once completed, the drone superhighway will consist of 30 ‘Arrow Towers’ which can control drones from the ground. Together, these towers will form a virtual highway that lets drones travel safely – without any need for a human pilot.

Stephen Farmer, head of corporate communications for Altitude Angel, told MailOnline:

‘At the moment, you need to see a drone and be within 500m to fly it.’

At a height of 400 feet, the developer claims that anyone on the ground will hardly be able to see, let alone hear drones overhead

Each tower on the ground acts as a ‘human spotter’, allowing drones to be flown far beyond the sight of any human pilot. With each tower offering a range of 2.5 miles (4km), drones are ‘passed’ up the chain of the superhighway so that they can fly long distances.

Each tower on the ground is equipped with powerful sensors that build a virtual map of everything within the airspace. By communicating with drones in the air, the towers can coordinate traffic so that drones avoid each other, as well as any obstacles they might encounter.

The superhighway has been developed using part of a £273 million government investment in the aerospace industry and a £5 million investment by BT.

Currently, 15 of the 30 towers have been built, covering an area of 80-90 miles. Altitude Angel had initially suggested that the superhighway could be extended down to Southampton and westwards to Bentwaters.

However, the company has now confirmed these extensions will not be constructed due to difficulty finding sites to build new towers.

Mr Farmer explained:

‘We’ve been dealing with a lot of private individuals, whether that’s sports clubs or farmers, and it’s been quite a challenge to find the necessary infrastructure.

‘People just had a reluctance to put hardware in fields so there’s been quite a bit of negotiation with landowners and that’s taken longer than we anticipated.’

A plan to build a Reading to Cambridge leg has also been cancelled as Altitude Angel focuses on completing the main body of the superhighway.

**182 . Date: 04-04-2024GeneralNorway Establishes Arctic Base for Long-Range DronesURL: https://www.uasvision.com/2024/04/04/norway-establishes-arctic-base-for-long-range-drones/**

The Norwegian government has great ambitions for Andøya, and proposes to reverse the decision to close Andøya so that there will still be a daily military presence at the air station. Andøya is to be developed into a base for long-range drones, and will be central to the support and development of the Norwegian Armed Forces’ space operations. In addition, Andøya is an important airbase for allied reception.

Long-range drones will become a completely new capability in the Armed Forces and will increase our ability to continuously understand the situation and monitor our local areas. A good understanding of the situation is important to ensure national control and freedom of action. Andøya will be an absolutely central base for this development in the Norwegian Armed Forces going forward, says Defense Minister Bjørn Arild Gram (Sp).

Fisheries Minister Cecilie Myrseth, Finance Minister Trygve Slagsvold Vedum, Air Wing Commander Hans Martin Steiro and Defense Minister Bjørn Arild Gram

The procurement of large drones with adapted sensors and systems in the Norwegian Armed Forces will contribute to continuous monitoring and control with a focus on maritime areas of interest in the north. This new capacity will also be able to help support total defense with monitoring and incident management in the event of, for example, natural disasters or rescue operations. The drones will be operated in a multinational collaboration with close allies that involves both training, operation and development. The former premises of the maritime patrol aircraft can be used for the establishment of drones on Andøya.

Space-based services are central to military operations and are becoming increasingly important in cooperation with allies, partners and in the NATO community. Secure access to space is becoming central in line with the development of satellite-based services.

The government has a clear ambition for Norway to be foremost among allies in understanding the situation in the north. Satellites help to provide an overview of what is happening in our immediate areas, and Andøya has a unique location when it comes to access to outer space,

says Gram.

Andøya Spaceport helps to support the needs of the Armed Forces, as well as bilateral and allied space investment. The government, in cooperation with allies, will develop the ability to quickly replace satellites if necessary. A first measure is to help strengthen the security level at Andøya Spaceport to satisfy military security requirements. This will mean that Andøya Spaceport can be a resource for the rapid launch of replacement satellites either in a national or allied framework.

Furthermore, a joint training and development department and permanent guarding and security are established for the base’s function as a base for allied aircraft in peacetime, in crisis and war. The air station area is being developed to support this activity and the Armed Forces’ own innovation and development activities.

Andøya air station is important in NATO’s planning. Andøya, Værnes, Sola and Bodø are further developed to be able to receive allies in peacetime and to be able to receive larger amounts of allied air forces in crisis and war.

**184 . Date: 09-04-2024Armed ISR / ISTAR - MALE - SafetyContractor Crashed MQ-9 on Loan from US Air Force Causing $16 Million in DamageURL: https://www.uasvision.com/2024/04/09/contractor-crashed-mq-9-on-loan-from-us-air-force-causing-16-million-in-damage/**

A contractor caused $16 million in damages to a U.S. Air Force drone, according to a new accident investigation report. The MQ-9 was on loan from the service as part of a program to capture data from hypersonic tests before it crashed last year.

The crash took place Jan. 18, 2023, at Southern California Logistics Airport in Victorville, Calif. Crew members, while members of the California National Guard, were working as civilians for Integrated Innovation, Incorporated—known as i3—at the time.

i3 helps operate the Defense Department’s SkyRange program, which uses MQ-9 and RQ-4 drones to clear hypersonic test ranges and relay telemetry. The crash was not during a flight to support a hypersonic test; its purpose was to test operations and procedures for the MQ-9, according to the investigation report, released this week 14 months after the crash.

Air Force investigators determined that before takeoff, the crew chief and pilot failed to note during preflight checks that the drone’s angle of attack (AOA) gauge in the ground control station cockpit was displaying between 6.5 and 7.0 degrees, well outside the –1.0 it is supposed to show.

As a result, when the MQ-9 gathered speed to take off, warning messages and tones started flashing on the cockpit head’s up display. At that point, however, the drone had already reached 78 knots of indicated airspeed—the rotation speed at which point the pilot is supposed to initiate takeoff.

The drone sensor operator had not noticed or called out the aircraft reaching that speed and called for the flight to be aborted when the warning message appeared. When the MQ-9 left the ground, the drone pilot told the sensor operator to “Kill the GDT,” severing any sort of connection between the ground terminal and the aircraft.

The MQ-9, which never got more than 18 feet off the ground, slammed back into the runway and veered off to the left.

“As the [aircraft] careened into the dirt surface surrounding the runway, all three landing gears collapsed causing catastrophic damage to the aircraft’s radome, lower data link antenna, [Multi-Spectral Targeting System], and the engine,”

the accident investigation report states. The estimated cost of the damage was $16.1 million, though the report does not say if the aircraft was salvageable.

Ultimately, investigators determined the primary cause of the crash was the decision to sever the communications link between the aircraft and the ground terminal. Using a simulator, officials said they were able to determine that

“although the [aircraft] stalled and impacted the runway hard, not cutting the GDT allowed us to maintain aircraft control to a full-stop on the runway.”

Officials also faulted the pilot for failing to note the AOA gauge was displaying data that would cause an alarm, and the sensor operator for failing to call out when the MQ-9 reached rotation speed and attempting to abort the flight after rotation speed had been reached. All were “substantially contributing factors” to the crash.

Both the pilot and sensor operator were current and qualified to instruct and conduct MQ-9 launch and recovery operations, the report noted.

The drone was assigned to the 432nd Wing at Creech Air Force Base, Nev., but no personnel from that wing were involved in the mishap. The Air Force’s MQ-9 fleet averages about 4.9 Class A mishaps per year, according to the latest available data. Other MQ-9s have been damaged or destroyed by Russian aircraft and Houthi missiles in the past year.

i3 continues to work on SkyRange, which officials say has allowed the Pentagon to test hypersonic systems faster and more effectively than before—limited test capabilities and infrastructure have been common complaints in the U.S.’s hypersonic efforts.

**185 . Date: 12-04-2024Armed ISR / ISTAR - MALE - General - PlatformTaiwan-Built UAV Makes 2nd Attempt to Pass Combat Readiness TestsURL: https://www.uasvision.com/2024/04/12/taiwan-built-uav-makes-2nd-attempt-to-pass-combat-readiness-tests/**

A redesigned version of the locally developed Teng Yun 2 unmanned aerial vehicle (UAV) has been undergoing combat readiness tests since last month after failing them last year.

A source familiar with the matter told CNA Monday that the combat and reconnaissance drone, also known as “Cloud Rider 2,” entered the final testing stage for the second time in mid-March.

The source, however, did not say when testing was expected to be completed.

Under the Ministry of National Defense’s (MND) five-step development process, all weapon systems must make it through an initial conceptual design stage, an engineering development stage, initial weapon testing, and combat readiness testing before they can enter mass production.

The military said results from the Teng Yun 2’s unsuccessful first attempt to pass the final testing stage in March 2023 indicated that there was “still room for improvement” in the drone’s design.

At the time, the military said future combat readiness tests would only be done once changes were made to the drone’s software and hardware.

Developed by Taiwan military’s top research unit National Chung-Shan Institute of Science and Technology (NCSIST), Teng Yung 2, the latest generation of the Teng Yung drone family, is a large, long-endurance, satellite-guided, medium-altitude drone that can carry multiple payloads for surveillance or strike missions.

The NCSIST first exhibited a Teng Yung 2 prototype at the 2019 Taipei Aerospace & Defense Technology Exhibition.

The drone passed initial weapon testing in March 2022 and later recorded a maximum airborne time of 20 hours.

Meanwhile, Air Force personnel have since January 2023 been undergoing NCSIST training to learn to operate the Ten Yung 2.

**186 . Date: 24-04-2024Cargo - GeneralBMT Redefines Autonomous Payload DeliveryURL: https://www.uasvision.com/2024/04/24/bmt-redefines-autonomous-payload-delivery/**

In a major development for the BMT SPARO project, the British Army’s Futures Directorate has provided funding to build, supply and demonstrate the latest prototype for UK medics who took part in Project CONVERGENCE, the premier US Army experimentation exercise in March.

BMT SPARO is a small, suspended air-ground payload transfer device demonstrating a globally novel approach set to transform precision deliveries from drones. By allowing the aircraft to remain hundreds of feet above a destination throughout delivery, BMT SPARO elegantly avoids fundamental problems associated with operating large, noisy, hazardous drones close to people and infrastructure on the ground, especially in challenging environments.

This month BMT proudly announce the project’s first funding from the British Army, marking a pivotal step in the progression of BMT SPARO technology. This contract award highlights the growing importance of autonomous logistics within Defence and BMT SPARO’s unique role in making ‘drone delivery’ feasible in the most challenging and hostile environments. The contract is aligned with the Army’s strategic vision for modernisation and utilising advancements in artificial intelligence, robotics and autonomous systems.

The funding underlines the Army’s willingness to fund innovation and to investigate the potential benefits BMT SPARO offers Defence. It also allows BMT to accelerate the commercialisation of the technology into broader applications and markets in collaboration with established partners.

Specifically, the contract was to build, demonstrate and supply the latest BMT SPARO prototype for Military Capability Plans – CSS part of the Army’s Futures Directorate. The prototype was used for extensive experimentation with end users at Project CONVERGENCE, the premier US Army experimentation exercise. The objective was to understand how the robust device can augment drones to supply urgent medical equipment to medical personnel in the most demanding, hostile environments while simultaneously being precise, safe and survivable.

James Campbell, BMT SPARO and Emerging Products Manager at BMT, commented:

“BMT SPARO’s progression since 2019, and its initial acceptance from a government-customer, signals the dawn of a new type of robot: a small, safe, and quiet device suspended under a logistics aircraft that takes over responsibility for payload delivery, better suited to challenging and sensitive environments. This small, highly ruggedised robotic device could even autonomously collect packages as well as deliver them without the need for infrastructure on the ground.”

Phil Metcalfe, Regional Business Director for UK and Europe at BMT, said,

“As drone technology and its use in challenging situations accelerates, BMT’s SPARO autonomous delivery device is a safe, simple and cost-effective solution to the problem of using drones to deliver payloads in difficult environments. This is a great example of what BMT prides itself on – ‘Innovating to provide engineering solutions to today’s pressing challenges’.”

BMT’s development partner, Dr. Steve Wright from Wright Airborne Computing, remarked:

“During 30 years of working in aerospace, I have not seen anything like the surge in new aircraft, systems, and applications that has happened in the last five years. BMT SPARO is a perfect example of this revolution, fuelled by a happy convergence of 21st-century technologies harnessed together by computers and software that engineers like me could only dream about 30 years ago.”

About BMT SPARO:

BMT SPARO redefines drone deliveries by safely transferring payloads between an aircraft in flight and precise locations on the ground while being suspended on a weight-bearing line. It achieves this through onboard power, sensors, and processing, with a compact internal winch to control height, and small side-facing fans to control lateral position and yaw. The developments occurring last year started with a demonstration of its capabilities for the UK ‘Army Warfighting Experiment’, followed by the granting of a UK Patent (pending in the USA) and, most recently this year, development funding for a new prototype from the British Army.

Future Prospects: Beyond military applications, BMT SPARO holds wider potential across sectors like manned helicopter operations, maritime deliveries, maintenance support, emergency services, and e-commerce. Ongoing discussions with established suppliers and ongoing research and development underscore BMT’s commitment to advancing this technology that’s set to be critical to the success of autonomous logistics.

**187 . Date: 25-04-2024Armed ISR / ISTAR - MALE - General - PayloadGA-ASI Adding AESA Antenna to EagleEye RadarURL: https://www.uasvision.com/2024/04/25/ga-asi-adding-aesa-antenna-to-eagleeye-radar/**

General Atomics Aeronautical Systems, Inc

. (GA-ASI) is continuing its support of EagleEye multi-mode radar development with a company investment to add an Active Electronically Scanned Array (AESA) antenna and associated software that will increase range and deliver significant mode enhancements. AESA will be a “drop-in” hardware upgrade to the existing EagleEye radar and could be an option for the new Gray Eagle 25M (GE 25M) aircraft assembly when ready.

“We expect the AESA antenna to more than double the range for EagleEye,” said Jeff Hettick, GA-ASI vice president of Agile Mission Systems. “The increased range and optimized multi-mode performance of the radar are perfectly tailored to provide deep sensing capability in Multi-Domain Operations (MDO). That will allow the aircraft to operate well outside Weapons Effects Zone of most threat systems adding a layer of survivability supporting the Stand-Off survivability with Stand-In effects of long-range sensors. This is a key component of the Gray Eagle 25M Unmanned Aircraft System being developed for the U.S. Army.”

AESA antennas replace the mechanically steered dish antennas of earlier-generation radars with a solid-state, all-electronic emitter. In addition to enhancing the radar’s performance, by replacing the motor and other components that physically move the radar dish, AESA greatly improves repairability and reliability.

As part of the EagleEye development, GA-ASI will improve target detection range using Artificial Intelligence/Machine Learning (AI/ML). GA-ASI expects to have a working lab prototype of the new AESA component by the end of this year, with plans to conduct flight tests in 2025 and operational demonstrations on GE 25M after that.

EagleEye is a multi-mode radar that builds on years of pioneering expertise by GA-ASI. Using Synthetic Aperture Radar (SAR), Eagle Eye enables operators to look in detail through clouds, smoke, dust, haze, or other conditions that might obscure a purely visual sensor. And for the first time on the Gray Eagle platform, EagleEye delivers radar-based Full Motion Video (FMV) called “Video SAR,” which enables live visual tracking of moving targets via the radar system.

The EagleEye radar performs Moving Target Indication (MTI), detects changes, builds strip maps, and yields other precise insights to analysts, commanders, and operators. With its Maritime Wide Area Search (MWAS) mode, EagleEye also provides a dedicated maritime MTI mode for tracking and targeting vessels and further supports the MDO mission set of the U.S. Army, particularly in support of the U.S. Indo-Pacific Command (INDOPACOM) mission, but also in Europe, Africa and the Middle East where there is an increased need for maritime reconnaissance, surveillance and target acquisition, which is critical to achieve information dominance and overmatch.

**188 . Date: 29-04-2024Armed ISR / ISTAR - MALE - ContractGeneral Atomics Gets $53M US Army Gray Eagle Logistics ContractURL: https://www.uasvision.com/2024/04/29/general-atomics-gets-53m-us-army-gray-eagle-logistics-contract/**

General Atomics Aeronautical Systems Inc.

, Poway, California, was awarded a $52,918,826 hybrid (cost-plus-fixed-fee and cost-plus-incentive-fee) contract for Gray Eagle fleet sustainment and logistics support.

Bids were solicited via the internet with one received. Work will be performed in Poway, California, with an estimated completion date of April 23, 2029. Fiscal 2024 operation and maintenance, Army funds in the amount of $52,918,826 were obligated at the time of the award.

Army Contracting Command, Redstone Arsenal, Alabama, is the contracting activity (W58RGZ24-C-0031).

**189 . Date: 01-05-2024Loitering Munition - Mini - ContractAeroVironment Gets $32M US Army Switchblade ContractURL: https://www.uasvision.com/2024/05/01/aerovironment-gets-32m-us-army-switchblade-contract/**

AeroVironment Inc.

, Simi Valley, California, was awarded a $32,120,832 modification (P00044) to contract W31P4Q-20-C-0024 for the Switchblade Weapon System.

Work will be performed in Simi Valley, California, with an estimated completion date of June 30, 2024. Fiscal 2023 other procurement, Army funds and Marine Corps funds in the amount of $32,120,832 were obligated at the time of the award.

Army Contracting Command, Redstone Arsenal, Alabama, is the contracting activity.

**190 . Date: 02-05-2024Armed ISR / ISTAR - MALE - ContractPakistan to Purchase 10 More Chinese Caihong-4 DronesURL: https://www.uasvision.com/2024/05/02/pakistan-to-purchase-10-more-chinese-caihong-4-drones/**

Pakistan plans to purchase 10 more Caihong-4 (CH-4) Medium Altitude, Long Endurance (MALE) Unmanned Aerial Vehicles, costing an estimated 24 million USD.

Further details, such as variants or the date of the sale, are not currently known. The CH-4s sent to Pakistan could be outfitted with the superior turbocharged, four-stroke Lark HLE engine with 150 horsepower. The Lark HLE could also contain the high-pressure common-rail fuel system (HPCR), allowing for more efficient operations.

The CH-4s may also have full authorized digital electronic control (FADEC) for higher performance and an average time of 2,000 hours before an overhaul.

Pakistan operates the Turkish Anka, Bayraktar TB2, Akinci, their own domestically produced Shapar-II drone, the Chinese Wing Loong II, and the CH-4, serving either combat or reconnaissance operations.

The CH-4 has a payload of 761 pounds (345 kg), a maximum takeoff weight of 2,900 pounds (1,300 kg), an endurance of 40 hours, and a cruising speed of up to 205 mph (330 km/h).

The CH-4 can perform reconnaissance and combat roles, carrying up to six different types of munitions, including various missiles such as the AR-1 and AR-2, FT-7/130 286 pound (130 kg) glide bombs, and GB-7/50 110 pound (50 kg) precision-guided munition (PGM), among other weapons.

Pakistan’s acquisition of more CH-4s doubles its current fleet of UAVs, greatly enhancing combat and intelligence-gathering abilities.

Purchasing more CH-4s, a platform Pakistan is already familiar with. The Pakistani Air Force has operated and maintained the CH-4s since 2021, which could be why they wanted to purchase more. The repeat purchases, along with the joint Wing Loong II project, could mean China may consider selling the CH-5 to Pakistan, as they did with Iraq.

China also likely wants to keep selling drones globally to keep its place as an international drone exporter and compete with Western countries that export UAVs.

The purchased CH-4s could also be in response to the order of 31 General Dynamics MQ-9 Reaper drones by India in February 2024.Ten additional CH-4 drones are likely an attempt to match the recent MQ-9 purchase, along with India’s current fleet of UAVs.

Pakistan could also use the CH-4s to maintain balance within the region, such as the contested Kashmir border between India and Pakistan.

Unlike India, the United States refuses to sell the MQ-9 Reaper to Pakistan, likely due to accusations of human rights violations. Pakistan may not be able to afford the MQ-9, which costs around $31 million, compared to the average price for the CH-4, which is around $2–4 million.

**191 . Date: 10-05-2024ISR / ISTAR - Mini - General - PlatformQuantum-Systems Debuts Long-Range, Long-Endurance VTOL UASURL: https://www.uasvision.com/2024/05/10/quantum-systems-debuts-long-range-long-endurance-vtol-uas/**

Quantum-Systems

is debuting its long-range, long-endurance VTOL UAS – Reliant – at SOF Week in Tampa, Florida this week.

The Group 2 platform delivers over 10 hours of endurance and provides persistent Intelligence, Surveillance and Reconnaissance (ISR) and Target Acquisition (TA) in contested, demanding environments. Reliant joins the Family of Systems comprised of the mid-range, mid-endurance UAS – Vector – and short-range, short-endurance UAS – Twister. Reliant, Vector and Twister are interoperable, making simultaneous operation and coordination of multiple UAS possible for joint UAS missions.

“Reliant is the latest addition to our family of VTOL Uncrewed Aircraft Systems. Our goal in developing Reliant is to provide our customers with Group 3 UAS mission system capabilities in a Group 2-sized aircraft and operational footprint.”

Reliant is a fixed-wing, long-range vertical take-off and landing (VTOL) UAS designed for beyond-line- of-sight ISR/RSTA missions in inaccessible, denied environments. It merges the agility of rotary wing aircraft with the efficiency of fixed-wing models to deliver more than 10 hours of endurance.

The easily transportable system features a two- case mission pack-out and can be operational in less than 10 minutes with no tools required. Reliant features a secondary payload bay for additional ISR sensor integration and greater mission versatility.

Reliant has a flight time of 4 hours on its Li-Po Batteries alone, which rises to 10+ hours using Internal Combustion- based Hybrid-Electric Drive. Maximum cruise speed is 60 mph and payload capacity is 3 kg / 6.6 lbs. Length is7.8 ft / 2.37 m and wingspan is 12.8 ft / 3.9 m.

**192 . Date: 10-05-2024Cargo - Small - General - PlatformUS Army Tests UAV Resupply During Live-Fire Exercises in HawaiiURL: https://www.uasvision.com/2024/05/10/us-army-tests-uav-resupply-during-live-fire-exercises-in-hawaii/**

The US Army has successfully tested an autonomous uncrewed aerial vehicle (UAV) for battlefield resupply during live-fire exercises in the Hawaiian Islands. The aircraft was a vertical take-off and landing platform called the G1 Gabriel – a multi-rotor type designed by California start-up Soaring, which describes itself as a developer of autonomous heavy-lift cargo drones.

Soaring says the G1 Gabriel is a multi-purpose, multi-payload UAV intended to provide a solution for logistics in contested environments.

During recent exercises in Hawaii simulating such a scenario, a G1 Gabriel supported ground troops with the army’s 25th Infantry Division, delivering ammunition and food during night live-fire drills on the island of Oahu.

Over three flights, a G1 Gabriel delivered 2,400 rounds of 7.62mm belted machine gun ammunition to an infantry platoon. Those three flights were completed within 16min from the time the initial call for resupply was received, according to Soaring.

The company revealed the milestone on 7 May at the 2024 Special Operations Forces Week conference in Tampa, Florida.

“Safe and expedient resupply capabilities are critical to mission success, especially in the dynamic environments faced by our service members,” says Soaring chief executive Daniel Trunfio. “Our innovative G1 UAS has successfully proven it is capable of addressing both elements to deliver advantage at the tactical edge.”

The Pentagon increasingly seeks to incorporate autonomous systems across all realms of combat operations, particularly as Washington pivots forces away from counterinsurgency campaigns of Iraq and Afghanistan.

In the shift back toward preparation for high-intensity “peer-on-peer” conflicts, military planners have come to the realisation that many of their aircraft and personnel have become highly vulnerable to the latest precision munitions, air defence networks and cheap swarms of drones.

Functions like battlefield resupply, which could previously be reliably accomplished via helicopter, are suddenly high-risk operations in contested environments. Autonomous platforms like the G1 Gabriel offer a potential low-risk solution.

“The army is working to identify a reliable, autonomous alternative for tactical resupply, to replenish mission-critical resources at the point of contact with the enemy, without risking lives,”

says US Army Lieutenant Colonel Pete Walther, commander of the infantry forces involved in the recent live-fire training in Hawaii.

The Hawaii-based 25th Infantry Division, of which Walther’s troops are part, is among the Pentagon’s primary ground combat forces in the Indo-Pacific region. The soldiers have been tasked with developing techniques needed to fight and win in the dense jungle environments found across Southeast Asia and the Pacific islands.

“Our soldiers require resupply of water and ammunition to continue the fight, however lessons from the Ukraine conflict teach us that our current forms of tactical resupply will likely fail, especially in the Pacific region,” Walther says. “There is a real need for innovative low-risk resupply solutions critical to the success of the operation.”

Soaring says recent exercises with Walther’s battalion demonstrate the G1 Gabriel’s potential to resupply groups of 30-40 soldiers “faster and with less risk than ground vehicle-based resupply missions”.

While uncrewed aircraft have, over the past two decades, become essential capabilities for lethal strike and airborne reconnaissance, logistics support has largely remained within the realm of crewed aviation.

That is now changing.

In addition to the army’s experimentation with uncrewed resupply, the US Air Force is funding development of an autonomous light cargo aircraft by California start-up XWing. Additionally, the US Navy is testing autonomous UAVs for delivering supplies to ships at sea under its Blue Water Logistics Maritime UAS programme.

**193 . Date: 15-05-2024General - SoftwareAirbus to Develop Eurofighter STAR Manned-Unmanned Teaming for ‘Loyal Wingmen’URL: https://www.uasvision.com/2024/05/15/airbus-to-develop-eurofighter-star-manned-unmanned-teaming-for-loyal-wingmen/**

Airbus

is to develop a manned-unmanned teaming (MUM-T) capability to enable the Eurofighter Typhoon combat aircraft to remotely control ‘loyal wingmen’ under the System and Teaming Advanced Research (STAR) programme.

An employment opportunity recently posted by the company for a chief engineer on the project spelled out its key objectives, not just for the Eurofighter but also as a bridge to the Future Combat Air System (FCAS)/Système de Combat Aérien du Futur (SCAF) programme.

As noted in the listing, the project to be undertaken at Airbus Defence and Space’s Manching facility in southern Germany sits within the X-Platform Capability Study (XPCS). It is geared towards showcasing a first demonstration of MUM-T on the Eurofighter, with the mid- to long-term goal of introducing command-and-control capabilities onto the aircraft in preparation for FCAS/SCAF.

The project will see the “development of the STAR demonstrator, a Eurofighter twin-seat aircraft intended to incorporate new cockpit and connectivity elements to explore new human-machine interface (HMI) and connectivity technologies for future FCAS[/SCAF] applications, and [to] mature [the] Eurofighter to become a future FCAS[/SCAF] asset”, Airbus said.

The company added that the XPCS and STAR demonstration objectives are to be compatible and complementary to the four Eurofighter partner-country Long-Term Evolution (LTE) development.

Though not directly referred to in the Airbus posting, the Eurofighter MUM-T will be related to the control of remote carrier (RC) and Electronic Combat Wingman (ECW) ‘loyal wingmen’.

**194 . Date: 22-05-2024Armed ISR / ISTAR - HALE - General - PlatformANKA-3 UAV Successful Maiden FlightURL: https://www.uasvision.com/2024/05/22/anka-3-uav-successful-maiden-flight/**

Turkey’s ANKA-3 project, the country’s first vertical-tailless turbofan-powered unmanned aerial vehicle (UAV), achieved another significant milestone with its successful maiden flight. The ANKA-3’s inaugural flight lasted for 1 hour and 10 minutes.

Reaching an altitude of 8,000 feet, the ANKA-3 attained a speed of 150 knots. The ANKA-3 also conducted a runway pass-over test during this flight.

The maiden voyage of the ANKA-3 was flanked by the HURKUS basic training aircraft and the ANKA UAV, both of which were domestically engineered by Turkish Aerospace Industries (TAI).

The ANKA-3 represents a cutting-edge iteration of UAVs, boasting multifaceted capabilities ranging from reconnaissance and surveillance to intelligence gathering and air-to-ground assaults

This advanced platform is adept at engaging enemy helicopters, propeller-driven aircraft, and UAVs, while also excelling in scanning for aerial threats and neutralizing adversary radars emitting RF signals and air defense systems.

Moreover, it provides invaluable support to friendly forces both in the air and on the ground, offering services such as signal and communication intelligence, electronic warfare, and operational relay with allied elements, among other functionalities.

Turkey’s flagship project, the ANKA-3 Unmanned Combat Aerial Vehicle, made its debut with its new paint scheme. The aircraft, which has garnered significant acclaim, stands out for its versatility in carrying out multiple missions.

In recent months, ANKA-3, Türkiye’s second product in the unmanned combat aerial vehicle domain, has continued its test activities successfully. As the first Turkish air platform in the flying wing architecture, ANKA-3 was captured in its new paint scheme.

The new image of ANKA-3 showcases white lines around the fuselage, a departure from its previous fully dark gray paint. The change in the aircraft’s appearance is seen as more aesthetically driven than purely technical.

The ANKA-3 boasts shared avionics architecture and GCS (ground control station) with Anka and Anka II UAVs, featuring low radar visibility (stealth), high transit speed, and a high payload capacity.

With Line of Sight/Beyond Line of Sight (Satellite Control) capabilities, it has a maximum takeoff weight of 6,500 kg and a cruise speed of 250 knots/0.42 Mach at 30,000 feet, with a maximum speed of 425 knots/0.7 Mach.

This development signifies Turkey’s significant progress in unmanned combat aerial vehicles, showcasing its expanding prowess in country’s defense technology.

**195 . Date: 07-06-2024ISR / ISTAR - HALE - SafetyUS RQ-4B Global Hawk Lost Over the Black SeaURL: https://www.uasvision.com/2024/06/07/us-rq-4b-global-hawk-lost-over-the-black-sea/**

Reports indicate that the high-altitude drone, marked with flight number 10-2045 and call sign FORTE12, took off from NATO’s Sigonella Air Base in Italy. It navigated through Bulgarian airspace, heading towards the Black Sea to perform reconnaissance in the Crimean Peninsula’s special operation area.

However, as of now, neither RIA Novosti nor Flightradar have provided additional details about what transpired. The Russian Ministry of Defense has also refrained from commenting on the incident.

Earlier, on May 26, an RQ-4B Global Hawk was detected in the Black Sea near Sochi. As per its trajectory, the UAV had taken off from NATO’s Sigonella naval base located on the island of Sicily. By 3:00 PM Moscow time, it was spotted near the coastlines of Krasnodar Krai and Crimea.

In March 2023, Reuters reported that the U.S. had resumed reconnaissance drone operations over the Black Sea following an incident where an MQ-9 crashed into the water. It was noted that on the same day, an RQ-4 Global Hawk conducted a reconnaissance flight in the area. CNN also confirmed this flight, referencing data from the FlightRadar24 service.

Earlier that month, a U.S. MQ-9 Reaper drone had crashed into the Black Sea west of Crimea. According to an initial statement by the U.S. European Command [USEUCOM], a Russian Su-27 fighter jet allegedly clipped the drone’s propeller with its wing during an interception, leading to the crash in international waters of the Black Sea. However, the Russian Defense Ministry maintained that the plane neither used onboard weapons nor made contact with the drone.

**196 . Date: 11-06-2024Armed ISR / ISTAR - MALE - GeneralUS Navy’s MQ-8C Fire Scouts Retire Just Two Years After Entering Operational ServiceURL: https://www.uasvision.com/2024/06/11/us-navys-mq-8c-fire-scouts-retire-just-two-years-after-entering-operational-service/**

US Navy (USN) budget documents reveal that the service plans to retire the newest variant of an unmanned helicopter it spent more than a decade and nearly $1.5 billion developing.

The Northrop Grumman MQ-8C Fire Scout was to perform a range of surface warfare, airborne mine countermeasures, and intelligence, surveillance and reconnaissance (ISR) missions from the decks of Littoral Combat Ships (LCS).

But the USN now wants to mothball the helicopters, according to the service’s fiscal year 2025 budget request, which earmarks no funding for the 36 MQ-8Cs the service has acquired. “Operational employment of the MQ-8C will end in Q4 FY2024 and sundown will be completed by Q4 FY2026,” according to the documents. The US government’s fiscal year 2024 ends in September.

The decision comes just more than two years after the long-delayed MQ-8C’s first operational deployment on the USS Milwaukee (LCS-5) in mid-December 2021. Since then, despite high hopes for the programme, MQ-8Cs have rotated on detachments aboard only four LCS, and only two of the type are currently on detachment, with Independence-class LCS.

“You’re looking at 12 detachments out on these ships,”

in total, says Commander Ian Adams, MQ-8C resource officer for the navy’s Air Warfare Division.

That is a limited return for the programme, which began in 2012, at which time leaders expected the aircraft to be operationally available in late 2014.

Derived from Bell’s manned model 407, the unmanned MQ-8C did not achieve initial operational capability (IOC) until summer 2019. Originally intended to provide naval ships with defensive firepower using BAE Systems’ Advanced Precision Kill Weapon System (modified 70mm Hydra rockets fitted with guidance systems), the USN shifted the MQ-8C’s mission to be airborne surveillance and targeting in 2018, delaying IOC.

The service had originally planned to buy 177 MQ-8Cs for $3.47 billion, but in the end acquired only 38, of which two have already been struck from service.

That leaves the USN with 36 MQ-8Cs, though only 17 of those are operational, according to budget documents. Of the remaining 19, two are assigned to the USN’s Air Test and Evaluation Squadron Two Four at Webster Field in Maryland, and 17 are already in storage at the Naval Air Warfare Center Weapons Division in Point Mugu, California.

Asked why the service is retiring a capability it referred to as “a pillar in the navy and Marine Corps unmanned campaign plan” as recently as May 2022, Adams says the decision is rooted in cost versus capability.

“If you look at Fire Scout right now, it’s sitting around $28 million per copy. I can do the same mission with a $100,000 to $250,000 piece of gear. That’s what has changed – the maturation of group 3 UAV systems since that time.”

Group 3 unmanned aerial systems (UAS) are vehicles weighing less than 599kg (1,320lb) and that fly slower than 250kt (463km/h), like the Boeing Insitu RQ-21 Blackjack now in service with the USN and US Marine Corps for ISR missions.

But Adams says the USN currently has no unmanned aircraft available to replace capabilities the service will lose when it retires its MQ-8Cs this autumn. Industry-developed Group 3 UAS “that are 4X more-capable than current group 3 [UAS]” are being evaluated now, he adds.

“In concert with our industry partners, we look forward to flight-based testing at the end of this year.”

Manned aircraft, including Sikorsky MH-60s, will have to pick up the slack, Adams says. “We only have two [MQ-8Cs] out on deployment, so we think it’s reasonable that the MH-60s can cover-down on the two that are actually deployed. Those two [MQ-8Cs] are all we’ve been required to field.”

However, the USN’s Constellation-class frigates – originally intended to achieve operational capability in 2026 but now delayed until 2029 – are actually being designed to carry MQ-8Cs.

“The system is being built into the Constellation-class frigate design, most notably the USS Constellation (FFG-62), as well as other ship classes,”

Captain Dennis Monagle, who leads the USN’s Multi-Mission Tactical Unmanned Aerial Systems programme office that oversees MQ-8C, said in May 2022.

The MQ-8C retirements leave unclear how or if the USN will attempt to replace on its Constellation-class frigates the autonomous capabilities that the MQ-8Cs were to have provided, but Adams suspects relatively cheap “attritable” unmanned aircraft will fill the void.

“Realistically, with the [frigate] being delayed, I think we’ll find ourselves with these affordable, attritable, connected UAS,” Adams says, “that would team with our MH-60R aboard those ships.”

**197 . Date: 12-06-2024Armed ISR / ISTAR - MALE - SafetyEthiopia Loses Bayraktar TB2 DroneURL: https://www.uasvision.com/2024/06/12/ethiopia-loses-bayraktar-tb2-drone/**

In the rugged terrains of Ethiopia’s Oromia region, a Turkish-made Bayraktar TB2 drone was reportedly downed or crashed in late May, 2024. The incident occurred in the Horo Guduru Welega Zone, an area that has seen its share of conflict.

The loss of the Bayraktar TB2, a drone equipped with laser-guided MAM-L munitions, has sparked discussions on its operational effectiveness and resilience in combat zones.

The Bayraktar TB2 is a product of Turkish defense technology, developed by Baykar Makina. It has been in the spotlight for its role in various military operations across the globe. With a wingspan of 12 meters and a maximum takeoff weight of 650 kilograms, the drone is designed for extended missions, capable of flying up to 27 hours at altitudes reaching 27,000 feet. Its arsenal includes a suite of sensors for surveillance and targeting, and it can carry two MAM-L precision-guided munitions.

Despite the lack of official confirmation from Turkish and Ethiopian officials regarding the sale of drones, data from the Exporters’ Assembly indicates a significant increase in Turkish military hardware sales to Ethiopia, totaling nearly $95 million in the first 11 months of 2021.

The recent incident raises questions about the vulnerability of drones like the Bayraktar TB2 in active conflict zones. While the specifics of the drone’s loss are not fully known, it underscores the challenges faced by military technology in the field.

When Ethiopia acquired the Bayraktar, the United States government and Egypt expressed concern over Turkey’s sales of armed Bayraktar TB2 drones to Ethiopia, citing mounting evidence the government had used the weapons against rebel fighters.

Ethiopia’s air force has recently augmented its capabilities with the acquisition of a Sukhoi Su-30 fighter jet and a Turkish Akinci combat drone. The latter, a high-altitude, long-endurance UAV, is equipped with similar laser-guided MAM-L munitions and potentially the CATS electro-optical/infrared targeting system. These advancements signify Ethiopia’s commitment to modernizing its aerial warfare capabilities.

The incident involving the Bayraktar TB2 is a reminder of the complexities of modern warfare and the continuous evolution required in military technology to adapt to diverse and challenging environments.

Military drones have been a game-changer in the fight against terrorism in Africa, as they offer several advantages over traditional military operations. The impact of military drones on the African battlefield has been significant, as they have provided new capabilities to African militaries that were previously unavailable.

Ethiopia is also operating an unspecified number of Iranian-made Mohajer-6 unmanned aerial vehicles (UAVs), as well as a plethora of drones.

**198 . Date: 21-06-2024GeneralSchiebel Opens Facility in FranceURL: https://www.uasvision.com/2024/06/21/schiebel-opens-facility-in-france/**

The Schiebel Group is strengthening its European footprint by establishing Schiebel Aéronaval SAS in Toulon, France.

The CAMCOPTER S-100 has been in service with the French Ministry of Armed Forces since 2012. In order to more closely support this successful partnership and meet the operational requirements of the Armed Forces in case of major engagements, Schiebel has established a company in France, situated close to its customer, in Toulon. The new Schiebel entity will provide localised support for the French Navy’s fleet of S-100 within the framework of a 5-year contract DMAé (Direction de la Maintenance Aéronautique) awarded to Schiebel at the end of 2023.

Schiebel Aéronaval SAS will house a production and repair facility to conduct the assembly and maintenance of the S-100 systems for the French Navy and other customers. The new Schiebel company will also have a training department to train operators and maintenance technicians.

Furthermore and significantly, the entity is intended to become the main European production and payload integration site for the evolving CAMCOPTER S-300.

Schiebel Aéronaval SAS embeds itself into the French Aerospace industrial network, works closely with other local French companies and is expected to generate many employment opportunities in the Toulon area.

“We are extremely proud to count France, renowned for its emphasis on strategic autonomy, among the CAMCOPTER S-100 users. Opening a facility in Toulon not only enables us to serve the French Navy better, but also to be closer to our French industrial partners and benefit from the advantages of the region, including direct access to the sea. We are more than excited about the new opportunities this important step will bring“

said Lubos Sramek, CEO of Schiebel Aéronaval SAS.

**199 . Date: 24-06-2024Cargo - MALE - ContractLakota: The All in One UASURL: https://www.uasvision.com/2024/06/24/lakota-the-all-in-one-uas/**

The array of possibilities unmanned aerial systems (UAS) bring to vertical lift operations is generating increasing interest. The United States Marine Corps (USMC) is convinced, awarding Airbus US Space & Defense Inc a contract to develop an unmanned variant of the UH-72 Lakota.

Senior Manager, Business Development and Strategy, Carl Forsling, explains the value and challenges of integrating the versatility of Airbus’ range into a UAS.

It’s been 10 years since an EC145 was flown as an optionally piloted vehicle (OPV). In the subsequent decade, unmanned assets and their interoperability with traditional vertical lift solutions have become even more of an industry priority. Fittingly, it is a version of the H145, the UH-72 Lakota that is currently in the process of being adapted to fly unmanned missions for the USMC.

The USMC’s intention to deploy UAS is easy to understand. As Carl Forsling notes,

“the amount of cargo they must transport over vast areas simply demands the unmanned system delivery. Over time, a manned system can only fly so many hours per day, and yet there are these unmanned long-duration missions over extended distances. It’s well suited for it. The other aspect is that the increased threat requires unmanned because it means a person won’t be lost.”

A potential mission might be resupplying marine units of 60 to 70 people distributed throughout what is known as the first island chain. The capability of ferrying cargo to these forward bases that are going to be operating independently stretches the limits of traditional systems. An unmanned platform is better suited to keep up with demand and isn’t risk worthy.

The Lakota’s versatility makes it a very interesting aircraft for unmanned operations. Whereas some drones or UAS are designed for singular purpose, an unmanned Lakota can adapt itself to any H145 operation – and more. As Forsling explains, “with the right architecture, the interchangeability that this unmanned system can offer… It can carry a 2,000 -pound missile reload, but also 2,000 pounds that could be air launched effects. It could be an electronic warfare system. It could be anything – and the flexibility that this approach has, based on a very proven Airbus platform, by adding the computer architecture and the unmanned systems, allows it to do a plethora of missions that it wasn’t able to do before.”

Of course, an adapted Lakota is not simply a clean sheet design and the unmanned version can also benefit from lessons learned from throughout the entirety of Airbus’ range and demonstrators. Forsling, for one, can already see the benefits:

“we’re able to utilise a lot of the resources and benefit from some of the technologies that have been used on previous platforms and, where appropriate, leverage some of that to help us accelerate this project into the field.”

Notwithstanding Airbus’ significant experience and expertise, the project is not without its challenges. Forsling points out that

“it involves turning an aircraft that has traditional control systems—a combination of manual flight controls, push-pull rods, bell cranks into a hydraulic control system—into a fly -by -wire aircraft that a computer can control, that definitely involves some engineering work!”

A challenge it may be, but one that Airbus is well placed to overcome. The next phases of the project will involve system integration, ground tests and flight tests over the next couple of years.

Beyond development, Airbus’ approach augurs well for a smooth integration into operations.

“Airbus has already fielded unmanned naval rotorcraft in Europe, and obviously we’re able to benefit from that,”

explains Forsling.

“The UH-72 itself has extensive support networks, so both from a technical standpoint in development, and then as you phase into prototyping and production, you’ve got established products that can be integrated much more smoothly than clean sheet designs.”

**200 . Date: 03-07-2024Armed ISR / ISTAR - HALE - General - PlatformUS Air Force Unveils First Video of XQ-67 Drone Prototype in FlightURL: https://www.uasvision.com/2024/07/02/air-force-releases-first-video-of-xq-67-in-flight/**

The US Air Force Research Laboratory successfully flew the first of a second-generation of Autonomous Collaborative Platforms known as the XQ-67A demonstrator, built and flown in the Off-Board Sensing Station (OBSS) program Feb. 28, 2024.

The AFRL Off-Board Sensing Station program is the validation of a design, build and test process that has resulted in the XQ-67A. It is the first of its kind to be built on a common chassis or genus — much like that of a motor vehicle frame — and with its first successful flight, the XQ-67A is proof that the genus approach works. This enables a faster and more cost-effective replication of the aircraft.

This new approach also responds to the challenge of great power competition by speeding delivery of affordable, advanced capabilities to the warfighter. The XQ-67A is remotely piloted but is capable of autonomous flight.

The first test flight of the XQ-67A, took place at the General Atomics Gray Butte Flight Operations Facility near Palmdale, California.

The XQ-67A is part of the Air Force Research Laboratory’s Low-Cost Attritable Aircraft Platform Sharing (LCAAPS) program to test a so-called Off-Board Sensing Station (OBSS), which is exploring data-sharing technologies hosted on an autonomous drone. The aircraft is piloted remotely but capable of autonomous flight. It is the Air Force’s follow-up to Kratos’s XQ-58A Valkyrie, which was originally developed under the USAF’s Skyborg autonomous aircraft program and is now being tested by the U.S. Marine Corps.

**201 . Date: 08-07-2024ISR / ISTAR - Tactical - GeneralGerman Navy Ends UMS Skeldar Helicopter Drone ProjectURL: https://www.uasvision.com/2024/07/08/german-navy-ends-ums-skeldar-helicopter-drone-project/**

In recent weeks, there has been repeated speculation in expert circles that the integration of helicopter drones on the German Navy’s corvettes is facing major problems. Now, a spokesman for the Ministry of Defense confirmed that the project to deliver a naval drone system for “reconnaissance and identification in the maritime operational area” (AImEG) has been canceled.

The reason given was that contractually agreed milestones had not been reached.

The Sea Falcon helicopter drone, manufacturer name UMS Skeldar V-200, was to be used on the corvettes. The drone enables the ships to conduct long-range reconnaissance over a radius of more than one hundred kilometers, according to a Bundeswehr website. This “eye in the sky” ideally complements the corvettes’ main weapon, the long-range sea and land target guided missile RBS15 Mk3.

The manufacturing company UMS Skeldar is now fully owned by the Swedish defense group Saab, after the latter acquired the shares of the Swiss co-owner.

During the development phase, the Navy initially had a complete unmanned aircraft system (UAS) with two helicopter drones plus a control station with two consoles and an equipment kit in its inventory, according to the Bundeswehr website. The control console is installed in the operations center. The equipment kit includes connections for the console and take-off and landing sensors for the flight deck of the corvettes. According to aviation circles, however, a Sea Falcon is said to have crashed last year.

After the upstream development phase, the Navy was supposed to receive three Sea Falcon drone systems for its corvettes from this year, according to the original plans. The Bundeswehr Procurement Office BAAINBw announced the conclusion of a corresponding contract with the main contractor, Elektroniksystem- und Logistik-GmbH (ESG), at the end of 2021. This was intended to implement the AImEG project to expand the corvettes’ imaging reconnaissance capabilities.

The ESG led a consortium consisting of the manufacturer and supplier of the aircraft, UMS Skeldar Sweden, the manufacturer of the corvette, NVL B.V. & Co. KG, and the aviation electronics producer CUONICS.

In April 2021, the Bundestag committees for defense and budget gave the green light for the project as part of a 25 million euro proposal. The project was estimated at a total of 80.3 million euros at the time. The majority of 52.6 million euros was earmarked for development in the pilot phase until 2023. The procurement of the systems and their integration on board the corvettes in 2024 and 2025 was estimated at 27.7 million euros at the time.

It is unclear what will happen next for the Navy. The BAAINBw, which is responsible for armaments, has no further information on this, as it said when asked. The obvious options would be to test a different drone system or wait for an improved version of the Sea Falcon. As a representative of the Sea Falcon manufacturer recently said on the sidelines of the Eurosatory trade fair in Paris, the helicopter drone is constantly being developed further.

The German defense company Diehl also applied for the new marine UAS at the time, together with the Austrian company Schiebel and its Camcopter. However, the team around ESG and UMS Skeldar ultimately prevailed after Diehl and Schiebel did not submit a bid. The challenge was the Navy’s requirement to offer a powerful helicopter drone for the use of kerosene fuel.

The aviation group Airbus Helicopters is also dealing with the topic of drones for naval ships. The company is developing the VSR700 helicopter drone, based on a light helicopter, for the French Navy. The UAS, which is powered by a diesel engine like the V-200, has a significantly higher take-off weight and a higher payload.

**202 . Date: 09-07-2024GeneralNordic Unmanned Starts Offshore Logistics Services in BrazilURL: https://www.uasvision.com/2024/07/09/nordic-unmanned-starts-offshore-logistics-services-in-brazil/**

Nordic Unmanned, Omni Táxi Aéro and OHI Unmanned have announced that ANAC has issued the permit to fly Class 1 UAV in BVLOS flights in Brazil for Omni’s offshore missions and operations for offshore drone logistics for Petrobras have begun.

Nordic Unmanned is providing logistics services using Schiebel Camcopter S-100 drones from its fleet. The contract holder is Omni Táxi Aéreo, with OHI Unmanned—the joint venture between Nordic Unmanned and Omni Helicopters International (OHI)—as the executing party.

Regular operations are being conducted from Omni’s base in Macaé, Brazil. Flights will be safely executed in various airspace types during day and night hours to various offshore installations and mark the beginning of commercial long-range onshore-to-offshore drone flights in Brazil. This initiative builds on the extensive experience Nordic Unmanned has gained over the years working with operators in the offshore energy sector. The Nordic Unmanned Light UAS Operator Certificate (LUC) will be leveraged together with Omni Táxi Aéreos AOC to form the basis of the flight permits in Brazil.

“We are very pleased to begin this operation. It demonstrates the global scalability of the experience Nordic Unmanned has gained in Europe and how this can be transferred via reputable local partners, chosen for their industry knowledge and understanding of local client requirements. We are excited to see OHI Unmanned and Omni Táxi Aéro begin work and bring value so quickly after its establishment. This cooperation between manned and unmanned aviation organizations offers an opportunity for continued adaptation and growth of our services in the years ahead, both in general and specifically in logistics as the market develops,” s

ays Lars Landsnes, COO of Nordic Unmanned.

“OHI is at the forefront of sustainable solutions supporting the orderly energy transition – this permit opens the door to significantly reduced costs and CO2 emissions for smaller and urgent payloads replacing the use of conventional helicopters and boats. This important milestone was only possible thanks to a successful three way cooperation between Omni Táxi Aéreo, OHI Unmanned and Nordic Unmanned”

said João Welsh, CEO of OHI Unmanned.

**203 . Date: 17-07-2024Armed ISR / ISTAR - MALE - SafetyPilot Error, Overbearing Supervisor Caused MQ-9 CrashURL: https://www.uasvision.com/2024/07/17/pilot-error-overbearing-supervisor-caused-mq-9-crash/**

An inexperienced pilot’s errors exacerbated by an overbearing supervisor caused a U.S. Air Force MQ-9 to crash into the sea in the Middle East last September, a new accident investigation board report has found.

The Sept. 3, 2023, accident destroyed the $26.1 million aircraft, and had not been disclosed until now. It was among three unrelated Class A mishaps across the service in a five-day span that month.

According to the investigation report, the MQ-9 was launched by a Launch and Recovery Element in Africa, but controlled for its mission by a crew from the 162nd Attack Squadron at Springfield-Beckley Air National Guard Base, Ohio. The mission was within U.S. Central Command’s area of responsibility.

After completing the mission, the MQ-9 was returning to Africa when something in the electrical system malfunctioned. The drone pilot correctly diagnosed the malfunction as a “Starter-Generator failure,” investigators said. But then the pilot failed to follow the malfunction checklist for electrical system issues, making “numerous errors” in the process, and the operations supervisor created confusion over whether the malfunction was something worse that it actually was.

An MQ-9’s electrical systems are usually powered by two independent sources: the starter generator and the permanent magnetic alternator, or PMA. The PMA powers flight-critical avionics, while the starter generator powers things like satellite communications. If the starter generator dies or malfunctions, batteries can power SATCOM and other systems for a little while, and the crew can set a new emergency mission profile to have the aircraft return to base even after SATCOM dies.

In this case, the MQ-9 had enough power from the PMA to fly back to the original launch and recovery element, but the pilot accidentally calculated how much longer the aircraft could fly based on a dual generator failure.

Meanwhile, while the pilot was still working on the checklist, the operations supervisor added to the confusion by telling the pilot to conduct a generator reset—a maneuver that should “only be attempted if the aircraft was assessed unrecoverable,” investigators noted. This created uncertainty about the nature of the malfunction.

Initially, crew members decided to conduct a crash landing at a forward operating base, but the operations supervisor directed the drone pilot to climb and drop the aircraft’s landing gear. That slowed down the aircraft, reducing its ability to reach the base on its remaining power. Pivoting, they decided to crash the MQ-9 into the water near a U.S. vessel.

The pilot guided the drone to a patch of water near the vessel and set it to loiter there shortly before the crew lost connectivity as the battery gave out. At any point before the battery gave out, investigators wrote, the aircraft could have been saved—if the crew had set its emergency mission to return to the launch and recovery element. But when connectivity was lost, without an emergency mission set, the aircraft continued to loiter over the water until it ran out of fuel. That took more than two hours in this case. The bulk of the wreckage was not recovered.

Investigators laid most of the blame on the pilot and operations supervisor:

The inexperienced pilot “exhibited poor general knowledge of the electrical system,” investigators added. During a training simulation, the pilot “was slow to recognize and act on emergency management, … made multiple errors and omissions to checklists, … made frequent incoherent statements, and finally … demonstrated scattered skills and below average performance.” He was required to retake the necessary training.

The operations supervisor, meanwhile, “provided excessive advice and direction” and, despite being an evaluator pilot, did not follow the malfunction checklist correctly either. The supervisor was too quick to focus on crash landing, the investigators said, instead of assessing the source of the malfunction and whether a standard recovery was possible.

The Air Force suffered a string of MQ-9 mishaps and downings over the past 18 months.

In January 2023, a contractor crashed a drone, causing $16 million in damages in California. In May 2023, engine failure led another MQ-9 to crash at an undisclosed location in Africa, where it was destroyed. And in September, another contractor was killed after she walked into the propeller of an MQ-9 during ground testing.

On top of that, the Air Force has disclosed at least one MQ-9 crash in 2024—U.S. Air Forces in Europe announced a Reaper crashed in Poland in January.

In addition, six reapers have been damaged or destroyed by Russian fighter jets and Iranian-backed militias since March 2023:

The full 26-page report can be accessed here.

**204 . Date: 29-07-2024Armed ISR / ISTAR - HALE - GeneralGeneral Atomics Could Fly First CCA Prototype in Mid-2025URL: https://www.uasvision.com/2024/07/29/general-atomics-could-fly-first-cca-prototype-uas-in-mid-2025/**

General Atomics’s first prototype for the US Air Force’s autonomous combat drone program could start flight tests as early as mid-2025, the head of its aeronautics division told Breaking Defense in a recent interview.

Legacy drone maker General Atomics and defense tech startup Anduril in April defeated mega primes Lockheed Martin, Northorp Grumman and Boeing for contracts to make the first batch of prototypes for the Collaborative Combat Aircraft program.

The Air Force has yet to declare whether it will carry both companies — or just one — into production for the first increment of the program, which will see the firms square off to build uncrewed aircraft that can battle fighter jets at a cost of a fraction of a crewed fighter. But General Atomics is determined to make the service’s decision easy by moving quickly and proving its design is mature enough to be built en masse, said David Alexander, president of General Atomics Aeronautical Systems.

“We’re not just designing another stunt. We’re designing something you can go into full rate production on,” he said on the sidelines at the Royal International Air Tattoo last weekend. “We are heads down to beat the competition, no matter who it is. Whether it’s Anduril, who’s still in it, or the other three [competitors] that are trying to claw their way back in.”

The company has started building components for its first CCA prototype, which is set to roll off the production line next year, he said.

If General Atomics is selected to move forward with full rate production, it already has the facilities and capital infrastructure needed to ramp up production on the CCA program due to the upcoming sunset of the Army’s MQ-1C Gray Eagle and Air Force’s MQ-9A Reaper production lines, which will be down to two aircraft a month next year. General Atomics’ drone production peaked at about 8.5 aircraft per month in 2019, and Alexander said its current infrastructure would support a rate even higher than that for CCA production.

“We have this huge production gap. We have to be aggressive here — we have jobs on the line to fill that production line back up,” he said. “But we can easily do this program and build what they need easily, and it wasn’t that long ago when we were doing it.”

Under the current contract, General Atomics is on order for a “small number” of CCAs for development and testing, Alexander said.

However, Air Force leaders have said it could buy more than 1,000 drones over the course of the program, making it an unquestionably lucrative opportunity — particularly as the service considers whether to delay or cancel its next-generation fighter jet program.

General Atomics has said it derived its CCA design from its Gambit family of drones as well as the XQ-67A Off Board Sensing Station (OBSS) demonstrator it built for Air Force Research Laboratory that first flew in February. But Alexander noted that the CCA design is markedly different due to the air-to-air combat mission, which calls for faster speeds and a different flight envelope than the surveillance mission for which the OBSS platform was designed.

Alexander declined to comment on which engines the company is considering for its CCA variant as well as the other defense companies who are building the sensors and other mission systems that will be integrated into the aircraft.

Production of the first increment of CCA prototypes has just started, but companies have already started eyeing the second increment of the program. The Air Force has said little about how the second CCA round will differentiate itself from the requirements of the first batch, but stated in April that planning was ongoing and that “initial activities” are set to start later this year.

Alexander declined to comment on what new capabilities General Atomics could offer for the second increment.

“We’re going to be in it, and we’re going to be in it big,” Alexander said.

Boeing and Lockheed Martin are both also interested in returning to the CCA competition for increment two despite a loss on the first round of the program, top executives said during the Farnborough Airshow this week.

“We’re interested,” said Greg Ulmer, president of Lockheed Martin’s aeronautics unit. “We’re doing a lot of design development experimentation with CCA. We’re doing a lot of study of how you control and manage CCAs.”

Boeing’s current experiences building and developing the Navy’s MQ-25 tanker drone and Australia’s MQ-28 Ghost Bat are also helping the company push forward innovations in advanced materials, autonomy, software and artificial intelligence that can be parlayed into future CCA increments, said Boeing Space and Security CEO Ted Colbert.

“Unless there are contract terms that we just can’t sign up to or it’s a request that’s completely askew to our portfolio, we’re going to compete in every increment that comes forward in the space,” he said. “We’re going to invest, we’re going to keep competing and the sweet spot of intersection of the requirements for the customer and our capability will happen.”

**205 . Date: 30-07-2024Solar ISR / ISTAR - HALE - RegulationZephyr HAPS gets Design Organisation Approval from UK Civil Aviation AuthorityURL: https://www.uasvision.com/2024/07/30/zephyr-haps-gets-design-organisation-approval-from-uk-civil-aviation-authority/**

AALTO HAPS Ltd., which designs, manufactures and operates the stratospheric, solar-powered Zephyr High Altitude Platform Station (HAPS), announced that it has secured its Design Organisation Approval (DOA) from the UK Civil Aviation Authority. This is the first DOA to be issued to a HAPS company in the UK, marking AALTO and the UK Civil Aviation Authority’s leadership in the development and regulation of HAPS technology.

The announcement made at the Farnborough International Air Show follows several months of engagement between AALTO and the UK Civil Aviation Authority, as the Company progresses the process for a Type Certification of its latest Zephyr Z8 aircraft. UK-based companies must be granted a DOA before securing a Type Certification, an airworthiness standard that will help facilitate the commercial activation and roll-out of AALTO’s services globally.

As part of the DOA, the UK Civil Aviation Authority led an initial review of AALTO encompassing the Company’s procedures, facilities and competency of its design team. The DOA certifies AALTO is an organisation with capabilities to design aircraft to the highest standards. AALTO is now working closely with the UK Civil Aviation Authority on the Type Certification of Zephyr ahead of a targeted entry-into-service in 2026.

With a current flight-time record of over 64 days in the stratosphere, Zephyr is a world-leading HAPS that will be transformative for mobile connectivity and earth observation. As a payload agnostic platform, Zephyr can deliver several applications, including low-latency 5G direct-to-device (D2D) connectivity and high-quality earth observation services.

Samer Halawi, Chief Executive Officer of AALTO, said:

“This is a significant milestone for the industrial and commercial roadmap of Zephyr. Following a landmark investment in our business and the beginning of our comprehensive flight season, this approval underscores the regulatory confidence in HAPS as we demonstrate the potential of providing cutting-edge services from the stratosphere. The UK Civil Aviation Authority continues to show its global leadership as an enabler of sustainable technology such as Zephyr, which remains at the forefront of solar-powered innovation.”

Pierre-Antoine Aubourg, Chief Technology Officer of AALTO, added:

“This validation from a world-leading aviation authority is testament to the dedication and expertise of our teams at AALTO. Our technical and engineering departments continue to be driven by setting the highest possible standards, alongside the UK Civil Aviation Authority, whose support and insight has been vital in our certification journey.

“As we focus on securing a Type Certification for Zephyr, we look forward to working closely with the UK Civil Aviation Authority over the coming months. With their ongoing support, I am confident we will continue to break new ground in the regulation of Zephyr and HAPS technology.”

Garry Lathey, Design and Certification Manager at the UK Civil Aviation Authority, said:

“We are committed to working as the regulator with innovative companies like AALTO to play our role in realising their ideas in a safe, sustainable way. The granting of Design Organisation Approval to AALTO brings closer a future with certified RPAS, demonstrating our commitment to ensuring the UK stays at the forefront of global aviation innovation. We will continue to work with regulatory bodies around the world to protect consumers and enable the innovation of certified RPAS.”

About AALTOAALTO, a subsidiary of Airbus, is a global leader in connectivity and earth observation services from the stratosphere. Based in Farnborough, UK, the Company designs, manufactures and offers services using its record-breaking Zephyr High Altitude Platform Station (HAPS). Powered by solar energy and operating above 60,000+ feet, Zephyr’s persistence enables continuous flight for months at a time. Its current flight-time record is over 64 days in the stratosphere. As a payload agnostic platform, Zephyr can deliver several applications, including low-latency 5G direct-to-device (D2D) connectivity and high-quality earth observation services. Those solutions will deliver for several markets including mobile greenfield connectivity, disaster management, border protection, and precision agriculture.

**206 . Date: 01-08-2024PartnershipThales and Garuda Aerospace Sign MoU for Secure Drone Operations in IndiaURL: https://www.uasvision.com/2024/08/01/thales-and-garuda-aerospace-sign-mou-for-secure-drone-operations-in-india/**

Global player in the aerospace industry Thales, and Garuda Aerospace have signed a Memorandum of Understanding (MoU) to promote the development of the drone ecosystem in India. This collaboration aims to foster innovation and to advance the development of technological solutions that can enable safe and secure drone operations and help the growth of drone-based applications in India.

In addition to its broad expertise in the field of UTM solutions for the seamless management of Unmanned Aerial Vehicle (UAV) flight authorisations, Thales offers a range of radar and sensors for high-performance UAV detection, as well as being experienced in system integration. Garuda Aerospace, known for its expertise in the Indian market, is a leader in UAV manufacturing, and has extensive knowledge of the production of high-tech UAVs and service applications.

Established in 2015, Garuda Aerospace is a key player in the Indian drone sector, catering to the diverse needs of the industry. The company focuses on building advanced drone solutions for the armed forces, in collaboration with global giants in the defence and aerospace sectors. It also has a vast fleet of over 2500 drones and 4000 pilots across 400 districts.

Thales is recognised around the world for its expertise in aerospace and UAV solutions. From design and development to implementation and maintenance, Thales has built end-to-end solutions for drone integration and the development of advanced UTM systems. The company works closely with civil aviation authorities and air navigation service providers to deliver strategic UTM capabilities, including registration, authorisation and geo-awareness, while ensuring that incremental capabilities, such as aircraft tracking and deconfliction, can be added in the long term.

The MoU aims to transform the Indian drone landscape, and will come into effect in August 2024.

Ashish Saraf, VP and Country Director, Thales in India, stated:

“The government is providing a robust foundation for the drone ecosystem, fostering opportunities for collaboration, innovation, and growth. We are proud to partner with Garuda Aerospace in paving the way for the development of advanced UTM systems in India by leveraging our extensive global experience and expertise in aeronautical solutions. This collaboration aligns well with the Aatmanirbhar Bharat (Self-Reliant India) vision, and seeks to support India in realising its ambition to become a major global hub for drones by 2030.”

Speaking on the partnership, Agnishwar Jayaprakash, Founder CEO, Garuda Aerospace, said:

“We are thrilled to partner with Thales in driving technological innovations for the development of drones and drone-based applications in India. Ever since Honourable Prime Minister Shri Narendra Modi ji launched 100 Garuda drones in 100 Villages, we have scaled and cemented market dominance in the precision agri drone segment where 50% of agri drones in India is Garuda’s. Equipped with the largest fleet in India coupled with Thales’ UTM technology and their worldwide experience, Garuda Aerospace will aim to revolutionize the drone sector and play a key role in the transformation of India into a global drone powerhouse.”

**207 . Date: 05-07-2024Armed ISR / ISTAR - MALE - SafetyEighth MQ-9 Reaper Shot Down Over YemenURL: https://www.uasvision.com/2024/08/05/eighth-mq-9-reaper-shot-down-over-yemen/**

On August 4, local sources claimed that an American MQ-9 Reaper drone was shot down over Saada province in Yemen. These sources even published photos on the social network X [formerly Twitter], allegedly showing the remnants and debris of the downed MQ-9.

However, BulgarianMilitary.com cannot independently verify these claims, and there has been no official confirmation from U.S. authorities yet.

If confirmed, this would mark the eighth MQ-9 Reaper drone downed since October last year, amid the ongoing Israel-Hamas conflict. It would also be the second such incident within the same Yemeni province.

The first of these eight drones was reportedly downed by Yemen’s Houthi rebels on November 8, 2023, over the Red Sea during a period of attacks on U.S. bases in Iraq and Syria. Later, on January 18, 2024, the Islamic Resistance of Iraq claimed responsibility for shooting down another MQ-9 Reaper drone, which had allegedly taken off from Kuwait, near Muqdadiya, Diyala province.

On February 19, 2024, Houthi rebels shot down a U.S. Air Force MQ-9 over Al Hudeida, amid ongoing attacks on American bases in Iraq and Syria. A similar incident occurred on April 25, 2024, when another MQ-9 was downed over Saada province.By May 17, 2024, Yemen’s Houthi group claimed responsibility for shooting down an “American MQ-9 spy drone” in Yemen’s central Marib province.

Just a week later, on May 24, 2024, the group reported downing another MQ-9 over Sana’a. On May 29, 2024, an American MQ-9 crashed in Yemen under undisclosed circumstances.

**208 . Date: 05-07-2024ISR / ISTAR - Tactical - RegulationPrimoco UAV Moves Closer to NATO STANAG CertificationURL: https://www.uasvision.com/2024/08/05/primoco-uav-moves-closer-to-nato-stanag-certification/**

Czech UAV manufacturer Primoco UAV has moved significantly closer to completing certification under the internationally applicable NATO STANAG 4703 standard.

A series of tests at the Institute of Aeronautical Engineering of the Czech Technical University were successfully completed, proving the mechanical parameters of the aircraft and its structural operational safety. This is a world first for an unmanned machine. So far, only manned aircraft have been subjected to full-scale testing.

“Although the airframe of the One 150M has undergone only a few minor modifications compared to the original design, tests have shown that it achieves even greater durability compared to manned aviation designs,”

says Ladislav Semetkovský, CEO of Primoco UAV.

Structural tests are one of the most important areas of aircraft type certification, consisting of hundreds of different tests. Similarly important was the engine performance testing that the One 150M successfully underwent at the end of last year.

“From the very first plans and prototypes we have approached the development of our own Czech UAVs responsibly, professionally and with the vision to be among the best. This philosophy is now reflected favourably in the success of our extensive certification tests. With the majority of the certification process completed we expect to receive our type certificate by the end of 2024,”

adds Semetkovský.

Certification according to STANAG 4703 when completed will be evidenced by the issue of a type certificate. This will allow the aircraft to be exported to any NATO member country without the need to conduct type tests for each market separately. Primoco UAV will thus be the first manufacturer in the world to provide customers in the unmanned segment with the level of certification they have been accustomed to in the purchase of manned aircraft. It will further strengthen its position among the leading global suppliers of medium category UAVs with a take-off weight of up to 150 kilograms.

**209 . Date: 09-07-2024ContractNokia and Swisscom Broadcast to Deploy Largest Drones-as-a-Service NetworkURL: https://www.uasvision.com/2024/08/09/nokia-and-swisscom-broadcast-to-deploy-largest-drones-as-a-service-network/**

Swisscom Broadcast has selected Nokia to deploy a nationwide Drones-as-a-Service network across Switzerland. 300 Nokia Drone-in-a-Box units are planned for deployment to enable emergency response, perimeter protection and infrastructure inspection, which will help keep public safety workers safe.

This will be the second nationwide Nokia Drone Networks project after Belgium’s Citymesh deployment. It will support Switzerland’s public safety and Industry 4.0 efforts and highlight Nokia’s strength in modernizing digital infrastructure projects and utilizing mission-critical industrial edge computing (MXIE) with the support of 3GPP technologies for beyond visual line of sight (BVLOS) autonomous operation.

In addition to increasing first responders’ safety, drones support resource optimization and help to save the lives of those involved in incidents. The drones, which are operated remotely, gather relevant information within the first minutes following an emergency, enhancing first responders’ situational awareness.

Public safety agencies in Switzerland will easily tap into the nationwide drone network by simply requesting a drone flight, similar to a ride-sharing service, from Swisscom Broadcast. They will also be backed up by a service portfolio with expertise, compliance, data collection and analysis of the collected data from Nokia and Swisscom Broadcast.

The deployment is expected to be available in all areas of Switzerland. Nokia and Swisscom will continue cooperating with competent regulatory bodies to ensure all operations comply with regulatory frameworks, especially from spectrum and aviation safety standpoints.

Drones will also boost worker safety within the Swiss Industry such as inspecting tall or hard-to-reach infrastructure, which removes the need for workers to climb or walk around hazardous areas. As Nokia Drone Networks are an integral part of the Nokia MXIE platform architecture, they enable easy onboarding of additional applications for industrial customers with Edge computing needs, such as creating 3D maps or detecting assets.

The deployment will facilitate reliable Drone-as-a-Service operations at scale in Switzerland with Nokia Drone Networks, a turnkey Drone-in-a-Box solution that integrates the drone, a docking station, a ground control station, a payload with video and thermal cameras, related software, and service components. The solution also supports interfaces and APIs for easy third-party integrations, such as traffic monitoring systems, video management software, dispatch solutions, and industrial inspection and process monitoring systems.

This collaboration with Swisscom Broadcast will also enable the advancement of industrial use cases, automation, beyond visual line of sight (BVLOS) operations, and the expansion of 3GPP technologies for drone use in Switzerland.

Dominik Müller, CEO at Swisscom Broadcast, said:

“We are pleased to select Nokia as a partner for this important infrastructure project in Switzerland. Together, we can speed up the go-to-market of our Drones-as-a-Service offering to our customers in the industrial and public safety landscape in Switzerland. The integration of our existing People Density Tool and our Drone Operations expertise with Nokia’s industrial grade hardware in combination with an open and future proof Software architecture is an important key to support such large-scale projects.”

Raghav Sahgal, President of Cloud and Network Services at Nokia, said:

“We are proud to partner with Swisscom Broadcast, a true innovator in drones-as-a-services operation, for this important project to establish a nationwide Drone-as-a-Service network in Switzerland. Nokia Drone Networks solution enables large-scale projects as it incorporates our mission-critical industrial edge (MXIE) technology to power its advanced computing functions and software. It will undoubtedly help Swiss enterprises gain access to a superior Drones-as-a-Service offering to enhance worker and public safety.

**210 . Date: 12-07-2024Loitering Munition - Mini - General - PlatformBulgarian Company Launches Loitering Munition ProductionURL: https://www.uasvision.com/2024/08/13/bulgarian-company-launches-loitering-munition-production/**

Bulgarian company Samel-90 has launched an assembly line for a new one-way attack unmanned aerial vehicle (UAV) named SAMJET.

Developed in collaboration with Swiss defense drone specialists ALIDRONE SAGL, the SAMJET is designed for cost-effective and rapid production, with a design resembling the Iranian Shahed-136 drone.

https://youtu.be/oUg0GQP1e54

SAMJET is a next-generation loitering munition drone that features autonomous takeoff capabilities assisted by rocket engines. It is engineered for high-speed flight and ease of use, requiring no assembly. All SAMJET units can be operated using a common ground control station. During flight, the drone’s position is displayed on a map, and imagery from its onboard camera is available to operators.

The drone is equipped with a forward-facing camera stabilized on three axes, allowing for movement and zoom control to identify and confirm targets during the final attack phase.

The company says the new suicide drone has automatic takeoff with a rocket booster and can travel at 120 to 250 km/h, with a range of up to several hundred kilometers.

“All our SAMJET units can be operated using the same ground control station. During flight, the position is displayed on the map, along with the image from the onboard camera,” a company representative stated. This integration ensures ease of use and operational efficiency for military personnel.

The SAMJET’s capabilities make it a significant addition to the growing arsenal of loitering munitions, offering enhanced operational flexibility and precision for military applications.

**211 . Date: 13-07-2024ISR / ISTAR - Tactical - GeneralFrench Navy’s CAMCOPTER S-100 Squadron Secures Waters During the Olympic Games 2024URL: https://www.uasvision.com/2024/08/13/french-navys-camcopter-s-100-squadron-secures-waters-during-the-olympic-games-2024/**

The 2024 Olympic Games were held in France this year with the French Navy CAMCOPTER S-100 Unmanned Air System (UAS) Squadron securing the waters around Marseille for the Olympic events.

The CAMCOPTER S-100 are stationed on board the French Navy’s Flottille 36F in Var, and monitored the vicinity of the Olympic Games, a total of 22,500 nautical square miles. Flying from Saint-Mandrier (Var), the S-100s provided the authorities with real-time data of the maritime area towards Marseille, where a number of sailing, kitesurfing and windsurfing events took place.

While conducting these operations, the S-100 was equipped with a high performance EO/IR camera and an Automatic Identification System (AIS) to monitor and detect any suspicious activities at sea.

“It is an honour that the French Navy utilised their S-100 Squadron to monitor the surroundings of the Olympic Games. This is another great use case for the CAMCOPTER and shows the versatility of applications and capabilities“,

said Lubos Sramek, Director of Schiebel Aéronaval SAS in Toulon.

**212 . Date: 13-07-2024Armed ISR / ISTAR - HALE - General - PlatformNorthrop’s Stealthy Loyal Wingman Drone Breaks Cover – with a CockpitURL: https://www.uasvision.com/2024/08/13/northrops-stealthy-loyal-wingman-drone-breaks-cover-with-a-cockpit/**

The first images of Northrop Grumman’s Model 437, an advanced air combat drone that could potentially fill the requirement for the Air Force’s and/or Navy’s “loyal wingman” Collaborative Combat Aircraft (CCA) programs, as well as those of allies, have hit social media. The relatively small tactical jet looks impressive and is very much in line with the concept renderings we have seen of it, aside from one major detail — it has a cockpit.

Yes, that’s right, the Model 437 prototype features a cockpit for a pilot. While this may seem extremely odd for what is supposed to be an advanced unmanned air combat aircraft, it actually makes some sense and it could give Northrop Grumman (NG) an advantage in the red-hot contest to provide hundreds, if not thousands, of highly autonomous drones to the USAF, as well as the Navy.

The images were taken by aviation photographer @Task\_Force23 at Mojave Air And Space Port in California, which is the home of the famed Scaled Composites (SC) ‘bleeding-edge’ aerospace design house that is building the stealthy Model 437 prototype.

When concept art was first unveiled back in 2021, the Model 437 was envisioned as working alongside manned aircraft collaboratively, both fighters and larger combat aircraft, including in an asset protection role for the latter. In our initial report on the concept design, which you should read for full context of this article, its general characteristics were stated as follows:

“With regards to the new Model 437 design, it is also expected to have a range of some 3,000 nautical miles when carrying a load of 4,000 pounds of fuel, and will be able to cruise at around 0.8 Mach, according to Aviation Week. The drone has an internal centerline payload bay that is designed to carry up to 1,000 pounds of stores or other systems, as well. The outlet said that a pair of AIM-120 Advanced Medium-Range Air-to-Air Missiles (AMRAAM) or a side-looking radar imaging sensor were two possible loadouts.“

We don’t know if those design goals have changed, but they generally look copasetic with the aircraft in the pictures from Mojave Air And Space Port.

Initial Model 437 concept art (Northrop Grumman)

The aircraft, which sports the registry N437VN (certified in January of this year, according to FAA data), features a bowless bubble canopy, a pointed nose with a semi-trapezoidal fuselage, mid-set swept wings, a long dorsal air intake that hugs the rear of the canopy, a distinct chine-line that wraps around the airframe, trailing-link landing gear, and a splayed v-tail adorned in a camouflage pattern.

The aircraft also features a round exhaust and a long air data probe, which is customary for initial flight testing and is also visible on its nose. Once again, it looks very much like the Model 437 renderings, just with a bubble canopy. Overall, paired with its small size, it has a very futuristic, almost movie-prop-like look.

But why build the Model 437 prototype, supposedly a highly autonomous drone, with a cockpit?

Here are the possibilities and our overarching analysis, which is subject to change as we learn more about the state of the program:

Having this initial prototype piloted drastically increases the potential for rapid flight test and development of the Model 437 airframe and concept. The advantages include just accessing airspace pretty much anywhere its owners and potential customers want it to go.

Unmanned aircraft are still quite restricted as to where and how they can operate. A pilot totally changes this massive bottleneck and means the aircraft can be flown wherever it needs to go, to participate in any developmental flights or training exercises, no matter how complex. It can do this unburdened by typical drone airspace restrictions and the need for chase aircraft that can be required in certain situations. Just ferrying to a different location while manned, so it can access airspace where it can fly as if it were an unmanned aircraft, is a giant advantage.

For many tests, having a human onboard can accelerate the speed at which they can be accomplished. At its most basic, initial primary flight testing of the airframe will go far faster with a pilot at the controls. Overall, more risks can be taken when executing autonomous activities with a pilot there to take over and act as a safety backstop if needed.

The X-62 is being used in this exact manner today and it has been highly successful in doing so. But that is an adapted F-16D that is running autonomy agents (software), not a near-production representative CCA-like airframe. This is a huge difference, especially considering one is actually looking to be bought in large quantities, while the other is a one-off test surrogate.

If the Model 437 prototype we are seeing is a dedicated piloted configuration, it’s very possible that NG and SC have another Model 437 prototype airframe in the unmanned configuration, or at least one under construction. Then there is the possibility that the aircraft we see is truly optionally manned…

**213 . Date: 15-07-2024Cargo - MALE - General - PlatformRotor Technologies Launches World’s Largest Civilian Drone for Construction and AgricultureURL: https://www.uasvision.com/2024/08/15/rotor-technologies-launches-worlds-largest-civilian-drone-for-construction-and-agriculture/**

New Hampshire-based Rotor Technologies, Inc., announces two new unmanned aerial vehicles (UAVs) for the 2025 model year: Airtruck, a utility UAV with 1,000+ lbs of payload and Sprayhawk, an agricultural UAV with 110-gallon capacity. Introductory pricing for both aircraft is less than $1,000,000.

Airtruck and Sprayhawk, both based on the Robinson R44 full-scale helicopter, have a maximum takeoff weight of 2,500 lbs each, making them the largest civilian drones available to purchase in the world. Rotor and Robinson have collaborated on development and certification; the two companies displayed a static pre-production prototype of the Airtruck, previously referred to as the R550X, at HeliExpo earlier this year.

“With the unveiling of the Airtruck and Sprayhawk, we’re excited to bring drone manufacturing back to the United States – by being bigger, bolder, and more innovative than our global competition,” said Rotor CEO Hector Xu. “These two aircraft bear unprecedented capability that will be transformative for drone operators, who for many years have wanted longer flight times and larger payloads.”

The first Sprayhawk production aircraft has been completed and is undergoing ground testing ahead of delivery to an agricultural partner in the US Midwest later this year. The first batch of production Sprayhawks will be delivered to early-access partners throughout spring 2025 and are expected to begin commercial spraying operations in the 2025 corn run.

Rotor is opening up orders to customers in the US and Brazil for 2025 Model Year Airtrucks and Sprayhawks, with delivery slots still available for late 2025 and early 2026. The first 2025 production run will be limited to 15 Sprayhawks and 10 Airtrucks. Introductory pricing is $850,000 for the Airtruck and $990,000 for the Sprayhawk for orders placed before December 15, 2024.

Rotor Chief Commercial Officer Ben Frank emphasized the market impact of Airtruck and Sprayhawk in response to the increasing use of UAVs in critical industrial applications.

“We think that the Sprayhawk and Airtruck are the right path forward for US farmers, aerial applicators, and the construction and logistics industries,” said Frank. “Many of the drones on the market today are unlikely to stand the test of time. The need for larger and more reliable aircraft is clear, and our new slogan, ‘Big Drones for Tough Jobs’ will show the world that we mean business.”

**214 . Date: 27-08-2024Loitering Munition - Small - General - PlatformZelensky Presents Ukrainian Rocket DroneURL: https://www.uasvision.com/2024/08/27/zelensky-presents-ukrainian-rocket-drone/**

Ukrainian President Volodymyr Zelensky unveiled a newly developed weapon for the embattled nation’s armed forces, stating that the Palyanyitsya drone missile is to be integrated into Ukraine’s missile programme on Saturday.

The development of the Ukrainian long-range drone missile Palianytsia was completed in eighteen months, with several dozen Russian military air bases falling within its range.

[Palianytsia, a type of bread, is a Ukrainian word that Russians find difficult to pronounce properly. Since the full-scale Russian invasion started, Ukrainians have used the word as a means to identify Russian military or saboteurs]

Quote:

“In the two and a half years of full-scale war, Russia has launched about 10,000 missiles of various types and more than 33,000 glide bombs at Ukraine. Stopping attacks on our cities can be achieved by targeting the carriers of this weaponry – Russian aircraft stationed at military airfields.

Yesterday, the first successful combat use of our new weapon – the Ukrainian long-range rocket drone Palianytsia – took place. It was designed domestically to destroy the enemy’s offensive potential.

The number of rocket drones produced will grow just like our long-range strike drones production did, the efficiency of which we see almost daily.”

Details:

The video posted by the president notes that one of the most effective ways to counter Russian missile attacks is to target the carriers of these weapons – Russian military airfields.

However, Ukraine’s allies have not authorised the use of the supplied weapons for this purpose.

Therefore, Ukraine has introduced a grant programme for private missile projects, invested in state-owned design bureaus, and deregulated the industry to stimulate innovation. The Palianytsia missile is the first outcome of these efforts.

Details about the Palianytsia missile are largely classified. This drone missile can reach approximately two dozen Russian military airfields and was developed in just one and a half years. It is launched from a ground-based platform and features a turbojet engine. The cost of the Palianytsia is significantly lower than that of similar missiles, with ongoing efforts to further reduce costs and increase production.

The existence of a long-range jet-propelled kamikaze drone had been rumored for some time after images of the debris ofa jet powered flying wing drone was shared on Russian social media in June. The military technology expert HI Sutton,writing on the Covert Shores website, produced his assessment of the make-up and capability of that drone:

The choice of Palyanytsya as the name for the UAV showsthat someone has a sense of humor. It is the name of a traditional, round, hearth-baked wheat bread often eaten for breakfast or as an afternoon snack.

It is also a word that many Russians struggle to pronounce correctly and a way to identify Russian saboteurs. It was also said to have become a frequent password at roadblocks and check points.

During World War II, legend has it that the Dutch resistance could identify German spies because they were unable topronounce the name of the town of Scheveningen.

Russians may still not be able to pronounce it, but Ukrainians hope they will soon understand Palyanytsya’s new meaning with full force.

**215 . Date: 28-08-2024Cargo - MALE - GeneralReliable Robotics Performs Automated Cargo Deliveries for US Air ForceURL: https://www.uasvision.com/2024/08/28/reliable-robotics-performs-automated-cargo-deliveries-for-us-air-force/**

.Reliable Robotics announced that it recently completed a series of automated missions across airfields in California and Nevada for the Department of the Air Force.

In conjunction with Air Combat Command, Reliable demonstrated aircraft automation capabilities as part of the Agile Flag 24-3 exercise transporting cargo between military bases and airports, some hundreds of miles apart, on demand over the course of a week.

The exercise was designed to be representative of the Indo-Pacific region, demanding agility, readiness and multi-domain operations.

“The Air Force has a unique opportunity to redefine efficiency through autonomous operations, which can enable persistent maneuver in contested environments and simultaneous cargo delivery instead of our current sequential system. Autonomy in small platforms reduces risk and opens up the ability to land in more places including damaged runways or unimproved surfaces,” said Colonel Max Bremer, Mobility COE Senior Advisor, Chief of Special Programs Division, Air Mobility Command.

“Military exercises like Agile Flag provide a venue for us to more closely evaluate how technologies like autonomous systems operate in real missions.”

Automated flights of a Cessna 208B Caravan included autotaxi, autotakeoff, en-route navigation and autolanding. All flights were managed by Reliable’s remote pilot while an onboard pilot monitored. Reliable deployed a mobile control station onsite at Mojave Air and Space Port, which served as a base of operations for the military exercise. The rapid deployment of Reliable’s mobile control station enabled onsite demonstrations of the remote piloting side of the operation for Air Force and NASA personnel.

Over the weeklong exercise, Reliable flew to eight locations, transporting essential cargo. All flights were expedited and scheduled “on-demand,” and did not require deployment of any additional infrastructure for automated flight, demonstrating the additional utility and flexibility automation can provide. Preparation for the exercise required obtaining military airworthiness and flight safety approvals for expanded operations from the U.S. Air Force.

NASA Armstrong executive leadership came to observe Reliable’s Agile Flag operations at Mojave.

“We are excited to see the dual-use automation system Reliable has developed for commercial and defense customers,” said Brad Flick, Center Director at NASA Armstrong Flight Research Center. “It’s good to see the maturity of their technology.”

Reliable has the only FAA-accepted certification plan for full aircraft automation, and continues to make certification progress. The safety-enhancing automation system features redundancy, high integrity navigation and an “always on” autopilot that is engaged through all phases of aircraft operation.

The system is aircraft-agnostic – Reliable has remotely flown two different airframes uncrewed in civilian airspace, a Cessna 172 in 2019 and a Cessna 208B Caravan in 2023.

“We are proud to participate in military exercises. Agile Flag provided us the opportunity to show how our autonomous flight system benefits defense missions and to demonstrate timely mission readiness,” said Dr. David O’Brien, Major General (Ret.), and Senior Vice President of Government Solutions at Reliable Robotics. “We remain committed to serve and support the U.S. Air Force and other branches of our nation’s military.”

Reliable participated in Agile Flag 24-1 earlier this year, as well as the Golden Phoenix exercise in 2023 and has been collaborating with the Air Force Research Laboratory (AFRL) and AFWERX since 2021.

About Reliable Robotics

Reliable Robotics launched in 2017 to bring safe, certified automation systems to commercial aviation. The company’s system enables remote operation of any aircraft type. Reliable’s vision is to transform the way we move goods and people around the planet with safer, more convenient and more affordable air transportation. The company is headquartered in Mountain View, CA and has a distributed global workforce.

**216 . Date: 30-08-2024TrainingDemocratic Republic of Congo Launches ‘Congo Drone Académie’URL: https://www.uasvision.com/2024/08/30/democratic-republic-of-congo-launches-congo-drone-academie/**

On August 12, 2024, the Democratic Republic of Congo (DRC) officially launched the Congo Drone Académie, a first of its kind training initiative for remote drone piloting at the National Institute of Professional Preparation (INPP) in Limete, Kinshasa.

VillageReach launched its “Drones for Health” program in the DRC in 2020 to ensure the transport of health products by drones (vaccines, medicines, laboratory samples, lab results and health reports) across the Equateur province. However, faced by a lack of local pilots, the organization and its drone operator partners had to outsource qualified drone pilots from Malawi.

In 2021, VillageReach initiated contact with INPP to discuss the creation of a drone piloting training center to increase the local workforce and expertise. To realize this initiative, several steps were taken before the launch of the academy, including the training of INPP instructors and Civil Aviation Authority (AAC) executives at the Senegal Drone Academy, and the development of training modules and teaching materials.

This work ensured that, today, the DRC has the necessary infrastructure and materials for the creation of its very first drone academy.

“The creation of the Congo Drone Académie within the INPP allows the country [DRC] to have a local workforce of qualified and certified drone pilots,” declared Godefroid Stanislas Tshimanga, Director General of the INPP. “These training courses mean that thousands of Congolese will be able to access quality drone training. It will no longer be necessary to go abroad to train in remote drone piloting, which was previously achieved thanks to the partnership with Senegal Drone Academy.”

Drone technology is increasingly used across various sectors in the DRC: to conduct mapping, for transportation of health products, and in media for photography and videography. Local expertise will now be developed to meet this growing demand.

For VillageReach, two additional provinces, Maindombe and Mongala, will soon join Equateur in using drones to transport health products in hard-to-reach areas.

“When VillageReach initially announced its drone transportation project, five years ago, we were starting from nothing to realize the government’s vision of having hard-to-reach areas benefit from quality health products using this innovative means of transport. The academy is a great joy to see, not only for extending health delivery to more provinces, but also for sustaining the use of drones to benefit several key sectors in the country,” said Dr. Patou Musumari, DRC Country Director, VillageReach.

“We are thankful for this collaboration with INPP, which will make the DRC one of the countries with a critical mass of drone pilots. Our contribution, through the endowment of educational materials to INPP, will help to strengthen what the Congolese learn during their training within Congo Drone Académie.”

Drones, in addition to being a means of rapid transport to improve access to hard-to-reach environments, can be used in several sectors to overcome geographic and infrastructural barriers. They are used in sectors such as agriculture, livestock, energy and the environment. After more than 4 years of operations in the Equateur province, the DRC now has the largest network of transport of health products by drone in the world. Increasing local expertise will support not only the DRC’s health sector, but these other sectors.

INPP’s Congo Drone Académie, which is certified by the AAC, offer both local and international certification. The Academie’s inaugural cohort counts 10 students, who will be trained for 14-21 days.

**217 . Date: 31-08-2024Cargo - Tactical - GeneralUAE’s EANAN Achieves Successful Test Flight of Heavy Cargo UAVURL: https://www.uasvision.com/2024/08/30/uaes-eanan-achieves-successful-test-flight-of-heavy-cargo-uav/**

UAE technology company EANAN, an innovator in advanced aerial mobility solutions, successfully completed the significant test flight for its model “RIKAZ” Heavy Cargo Vertical Take-Off and Landing (VTOL) and Unmanned Aerial Vehicle (UAV). This marks a major milestone in company’s mission towards commercialising its innovative drone technology, which is poised to revolutionise logistics and transportation in the region.

The EANAN Heavy Cargo Drone underwent testing to evaluate and gain valuable insights into its automated flight controls, navigation systems, the stability of communication systems, ability to handle heavy cargo and the integration of flight operational excellence. The transformative UAV drone can carry a payload of 50kg with its size (3.5m x 1.9m) as well as increase its capacity to 200kg with a flying speed of up to 60 kilometre per hour. Furthermore, it can be charged within 15 minutes at the capacity of 16 kilowatt per hour and have a maximum flying range of 30 kilometre.

These components are essential for ensuring safe and efficient operations in diverse environments. This entails evaluating the UAV’s accuracy in navigation, responsiveness to control inputs, as well as dependability of its autopilot and other autonomous systems.

Ulrich Weckx, CEO at EANAN, stated:

“We are proud to have achieved this remarkable milestone, which aligns perfectly with Dubai’s vision of becoming a global leader in urban air mobility by embracing cutting-edge transportation technologies.”

Mashaal Al Marzooqi, R&D Director at EANAN, stated:

“By successfully testing the RIKAZ Heavy Cargo Drone’s communication stability, we have taken a significant step towards comprehending the full potential of UAVs to maintain consistent and secure communication during flight. This is extremely important while managing the UAV’s operations remotely, particularly in complex air traffic environments or when conducting sensitive missions such as delivering emergency or urban cargo supplies.”

The growing eCommerce sector in the Middle East has created a pressing need for faster and more efficient and sustainable delivery solutions. Additionally, the surge for quicker and more affordable logistics and transportation solutions is being driven by government initiatives such as the DEWA R&D Centre and Dubai Future Foundation, which have fostered a thriving ecosystem for drone technology in the region. With its ability to bypass traffic congestion, carry cargo payload and reach remote areas, the EANAN’s Heavy Cargo Drone has the potential to supersede cargo operations, as well as transform logistics and supply chain operations.

EANAN is progressing towards commercialisation by focusing on developing and shifting to a viable model for urban air mobility, in which the EANAN Heavy Cargo Drone is a crucial element. This entails rigorous testing to meet the operational needs and regulatory requirements essential for commercial deployment, particularly in specialised markets such as the UAE, where a high demand for such cutting-edge UAV solutions exists.

EANAN is dedicated to developing a comprehensive fleet of zero-emission aircraft, contributing to achieve Dubai’s vision of a smart and sustainable city. The RIKAZ Heavy Cargo Drone, along with EANAN’s additional GHAITH model, represents the company’s commitment to driving innovation and shaping the future of urban air mobility in the UAE.

**218 . Date: 01-09-2024Mini - TrainingBritish Army Launches Top Gun Drone AcademyURL: https://www.uasvision.com/2024/09/01/british-army-launches-top-gun-drone-academy/**

Soldiers’ skills as pilots have been put to the test as the British Army works towards flying ‘kamikaze drones’ on one-way missions to find and strike targets.

First Person View (FPV) Uncrewed Aircraft Systems (UAS) provide a precision strike capability on the battlefield and are being used to great effect by the Ukrainian Armed Forces. Flown using a virtual reality headset and carrying small explosive charges, the manoeuvrability of FPV UAS means they can punch above their weight, such as flying through an open hatch to destroy an armoured vehicle by exploding inside it.

As part of Project Lewes – the Army’s wide-ranging work to integrate new technologies and capabilities into its existing forces to improve lethality – troops are being trained to fly FPV UAS as use of the technology is developed.

16 Air Assault Brigade ran a screening session at Colchester’s Merville Barracks to find soldiers among its existing UAS pilots with the aptitude to join the jHub Drone Academy and develop their skills.

The jHub is part of Strategic Command and aims to grow the military’s capabilities through the adoption of innovative technology faster and better than our adversaries. Working with the Army’s Combat Manoeuvre Centre, the Drone Academy project has developed and delivered a distributed training solution for FPV flying for all three services.

Currently infantry units are issued with the Parrot and Black Hornet UAS to use for reconnaissance, with soldiers completing a three-week course to qualify as pilots. FPV drones lack the GPS and stabilization software fitted to conventional drones so are harder to fly; but this makes them less vulnerable to jamming and more resilient on the battlefield.

Sergeant Adam Barnes, the senior UAS operator in 2nd Battalion The Parachute Regiment (2 PARA), said:

“While it is harder to operate, an FPV UAS is a much simpler, more adaptable and cheaper bit of kit. With a skilled pilot and the right UAS, you can use them to strike targets as well as carrying out reconnaissance.

“An infantry unit equipped with FPV UAS can fly them to attack targets that it would otherwise have to call in mortars, artillery, or an air strike to hit. It shortens the kill chain and gives a commander more options, making for a more efficient use of resources.”

FPV UAS originate in drone racing and the training, delivered by commercial partner Point Zenith, provides soldiers with an FPV UAS and obstacles for flying practice and a laptop computer loaded with a sophisticated racing simulator.

Paratrooper from the 2nd Battalion, The Parachute Regiment, who passed the screening flew a simulated Aquila, Beta FPV (first person view), drone through a FPV virtual reality headset through a course of gates on the laptop as they get taught how to use the equipment at Corporal Budd VC Gymnasium on the 16th of July 2024.

2 PARA has set up a drone racing club to encourage interest in the pursuit among its soldiers

“This is a military skill that we can develop through a competitive hobby,” Sgt Barnes said. “Learn-ing to fly FPV drones is the difficult part, and then how to use them tactically is just a further skill to add on.”

Among those selected to join the programme was Lance Corporal Morgan McConnell, of 3rd Battalion The Parachute Regiment. On recent training in Estonia, he piloted Parrot drones on reconnaissance flights during a live fire trench clearance operation while enemy drones hovered overhead to scout the paratroopers’ actions.

“Flying drones is something that I enjoy, and it’s been a different skill to develop,” he said. “The Parrot has basically got an autopilot and you can be reasonably confident at flying it within a few hours. FPV takes a lot more effort and skill because you’ve got total control of it, and it’s going to take time to get to the stage of flying it instinctively.

“I’m looking forward to the challenge and it’s interesting to be working on a technology that is developing, particularly when it gets to adding munitions into what we’re doing.”

ITDU imagery showcasing the testing of newly developed SMASH sights for use in the British army, under evaluation by the Experimental Trials Groups from the Yorkshire regiment upon warminster ranges

As the Army’s highest readiness formation, 16 Air Asslt Bde is at the forefront of UAS and counter-UAS operations. It is the first to be issued with the SMASH sight, which mounts on the standard issue SA80 A3 assault rifle and uses image processing software to help soldiers shoot down UAS.

**219 . Date: 01-09-2024MarketCzech Drone Maker Primoco UAV Sees Record ProfitsURL: https://www.uasvision.com/2024/09/01/czech-drone-maker-primoco-uav-sees-record-profits/**

Czech drone manufacturer Primoco UAV has reported record-breaking financial results for the first half of 2024, driven by growing demand for its advanced unmanned aerial systems.

The company, which is listed on the Prague Stock Exchange, saw its revenue increase by 81% year-over-year to 331 million CZK ($14.6 million), while net profit surged by the same percentage to 121 million CZK ($5.3 million).

Ladislav Semetkovský, the CEO and founder of Primoco UAV, attributes the company’s success to the superior quality and durability of its drones, which have proven their capabilities in missions across four continents.

“Customers appreciate not only the quality of our machines but also our ability to respond flexibly to their individual needs and deliver quickly,”

said Semetkovský. He emphasized that the company’s focus on investing in innovative technologies, manufacturing capacity, and global partnerships has allowed it to maintain an operating margin above 40%.

Primoco UAV has also secured new contracts worth over 500 million CZK ($22 million) in the first half of the year, involving the delivery of 26 UAVs. This aligns with the company’s annual forecast to secure orders for 50 to 60 drones, valued at approximately 1 billion CZK ($44 million). Last year, the company delivered 33 of its Primoco UAV One 150 aircraft.

The rising demand for Primoco UAV systems is partly due to the current geopolitical situation, as governments and security forces increasingly recognize the importance of UAVs in national defense. Additionally, the company’s drones are finding new applications in the civil sector. For instance, a recent contract with an Asian customer involves using Primoco UAVs for airport navigation system calibration and evaluation missions.

The company is also expanding its production, service, and training facilities, having acquired 303,000 square meters of land in Písek for this purpose. “

We have already invested 125 million CZK in this crucial project from our own resources,”

said Semetkovský, noting that construction could begin as early as next year. The new facility is expected to increase annual production capacity from 100 to 250 UAVs, with project completion targeted for 2027.

**220 . Date: 01-09-2024ISR / ISTAR - HALE - ContractNorthrop Grumman Gets $31M US Navy Triton Upgrade ContractURL: https://www.uasvision.com/2024/09/01/northrop-grumman-gets-31m-us-navy-triton-upgrade-contract/**

Northrop Grumman Systems Corp., San Diego, California, is awarded a $30,686,611 modification (P00006) to a cost-plus-fixed-fee, firm-fixed-price order (N0001923F0041) against a previously issued basic ordering agreement (N0001920G0005).

This modification exercises Option Contract Line Item Number 0010 for system engineering and program management, and adds scope to procure the non-recurring engineering; a material kit for each aircraft; tooling required to complete the Integrated Functional Capability 4 change requests; and engineering change proposals in support of the MQ-4C Triton Unmanned Aircraft System air vehicles B5 and B11 for the Navy.

Work will be performed in San Diego, California (32.4%); Rolling Meadows, Illinois (24.8%); Waco, Texas (5.8%); Salt Lake City, Utah (4.0%); Red Oak, Texas (3.7%); Verona, Wisconsin (3.3%); Palmdale, California (3.2%); San Leandro, California (2.1%); Medford, New York (1.7%); Hialeah, Florida (1.6%); Greenlawn, New York (1.4%); Bridgeport, West Virginia (1.3%); Valencia, California (1.3%); Irvine, California (1.0%); Pompano Beach, Florida (1.0%); and other various locations within and outside of the continental U.S.(11.4%), and is expected to be completed by September 2027.

Fiscal 2024 aircraft procurement (Navy) funds in the amount of $30,686,611 will be obligated at the time of award, none of which will expire at the end of the current fiscal year.

Naval Air Systems Command, Patuxent River, Maryland, is the contracting activity.

**221 . Date: 06-09-2024PartnershipUkrainian SHARK and PD-2 Drones to be Manufactured in PolandURL: https://www.uasvision.com/2024/09/06/ukrainian-shark-and-pd-2-drones-to-be-manufactured-in-poland/**

Poland’s defense industry representatives have received licenses from Ukrspecsystems, the Ukrainian defense company, to produce its advanced drones.

With this step, the Ukrainian enterprise has begun collaborating with Poland’s ALS Systems, which plans to manufacture SHARK, MINI SHARK, and PD-2 reconnaissance drones.

Ukrspecsystems will provide technology and expertise, while the Polish defense company will produce the drones at its facility in southern Poland. According to the enterprise, the production will help conquer new markets in the future and promote Ukrainian drone systems on the Western market.

SHARK and MINI SHARK drones at the ALS Systems booth at MSPO. September 2024. Photo – Militarnyi

The multifunctional Shark unmanned aerial system is designed for a wide range of missions – to help Ukrainian forces locate Russian equipment and positions, subsequently guiding artillery strikes on them.

It provides the capability for fully autonomous reconnaissance, surveillance, precise identification, and recognition from long distances and at significant altitudes.

The PD-2 drone can also detect targets and adjust fire behind enemy lines, both on land and at sea. This reconnaissance drone has a controlled flight radius of up to 180 km and is equipped with an optical observation station featuring a 30x zoom for the daytime channel and a 5x zoom for the thermal imaging channel.

**222 . Date: 09-09-2024RegulationEASA Launches Public Consultation for Proposals on Drone Airworthiness and CertificationURL: https://www.uasvision.com/2024/09/09/easa-launches-public-consultation-for-proposals-on-drone-airworthiness-and-certification/**

The European Union Aviation Safety Agency (EASA) has published Notice of Proposed Amendment (NPA) 2024-06 to consult aviation stakeholders and citizens on draft proposals for the initial and continuing airworthiness of certified unmanned aircraft systems (UAS).

EASA proposes amendments to the existing acceptable means of compliance and guidance material (AMC & GM) to the UAS Regulations and Part 21, as well as new AMC & GM to the newly published Regulations (EU) 2024/1107 and (EU) 2024/1109, which were based on EASA Opinion No 03/2023.

The draft proposals aim to:

Regulations (EU) 2024/1107 and (EU) 2024/1109 were issued in May following the publication of EASA Opinion No 03/2023 back in August 2023. Opinion No 03/2023 contained regulatory material for the airworthiness and certification of UAS including vertical take-off and landing (VTOL) aircraft and air taxis. The related NPA 2024-01 with the draft AMC & GM on VTOL-capable aircraft was published in January 2024. This NPA is one additional step of this rulemaking task (RMT.0230), which will be concluded with the publication of the final AMC & GM under the respective Executive Director Decisions.

**223 . Date: 11-09-2024AcquisitionRed Cat Closes Acquisition of FlightWave AerospaceURL: https://www.uasvision.com/2024/09/11/red-cat-closes-acquisition-of-flightwave-aerospace/**

– Red Cat Holdings, Inc. , a drone technology company integrating robotic hardware and software for military, government, and commercial operations, announced the closing of its acquisition of FlightWave Aerospace Systems Corporation, a provider of VTOL drone, sensor and software solutions.

The acquisition officially brings the Edge 130, FlightWave’s Blue UAS approved military-grade tricopter, into Red Cat’s family of low-cost, portable unmanned reconnaissance and precision lethal strike systems.

“Today marks a transformative milestone for Red Cat and our goal to provide warfighters with a diverse set of rucksack portable drones required for mission effectiveness on today’s evolving battlefield,” said Jeff Thompson, Red Cat CEO. “The acquisition of FlightWave broadens our range of drone products and opens up an entirely new revenue stream. The FlightWave Edge 130 Blue completes our Family of Systems and we will begin ramping manufacturing this quarter.”

Red Cat’s mission is to redefine the role of sUAS for defense applications by combining the capabilities of ISR drones with precision strike payloads. The company is an established leader in the sUAS (Group 1) space with its flagship Teal 2 aircraft. Red Cat is adding FlightWave’s Edge 130 to its larger family of systems, alongside a new line of FANG First-Person View (FPV) drones with precision strike payload capabilities that are all deployable in air, land, sea, and sub-sea environments.

The Edge 130 Blue is a UAS Certified military-grade tricopter for long-range mapping, inspection, surveillance, and reconnaissance needs. Designed specifically for government and military applications, the Edge 130 Blue can be assembled and hand-launched in just one minute by a single user to capture high-accuracy aerial imagery with long-range autonomy.

Weighing in at only 1200g, the Edge 130 has been flown for up to 2 hours in certain configurations in forward flight mode, an industry-leading endurance among all other Blue UAS-approved drones available.

**224 . Date: 11-09-2024ISR / ISTAR - Small - ContractTextron Gets $15M NAVAIR Surveillance Services ContractURL: https://www.uasvision.com/2024/09/11/textron-gets-15m-navair-surveillance-services-contract/**

– Textron Systems Corp., Hunt Valley, Maryland, is awarded a $15,219,207 firm-fixed-price order (N0001924F5002) against a previously issued basic ordering agreement (N0001921G0008).

This order provides Unmanned Aircraft Systems intelligence, surveillance, and reconnaissance services for the Department of Defense and other government agencies, and domestic and overseas contingency operations.

Work will be performed in Hunt Valley, Maryland (20%); and various locations outside of the continental U.S. (80%), is expected to be completed in September 2029.

Fiscal 2024 operations and maintenance (Navy) funds in the amount of $15,219,207 will be obligated at the time of award, $15,219,207 of which will expire at the end of the current fiscal year.

– Naval Air Systems Command, Patuxent River, Maryland, is the contracting activity.

**225 . Date: 16-09-2024ISR / ISTAR - Tactical - GeneralPeregrine Rotary Wing UAS Conducts Initial Royal Navy Flying Trials from HMS LancasterURL: https://www.uasvision.com/2024/09/16/peregrine-rotary-wing-uas-conducts-initial-royal-navy-flying-trials-from-hms-lancaster/**

In late August, 700X Naval Air Squadron conducted the first flying trials of the Peregrine RWAUS from HMS Lancaster in the Gulf of Oman.

Secured under the Future Tactical Uncrewed Air System (FTUAS) programme, the RN selected the Schiebel S-100 Camcopter as the basis for Peregrine. The aircraft will be equipped with the Thales I-Master radar, a compact, lightweight airborne surveillance radar that offers ultra-fine Synthetic Aperture Radar (SAR) imagery, Maritime Moving Target Indication (MMTI) and Ground Moving Target Indication (GMTI) modes.

Peregrine will operate in the intelligence-gathering, surveillance and reconnaissance role.

The Austrian-made Schiebel S-100 is a very mature platform that has been in service with civilian and military users since 2005, having successfully performed more than 2,000 deck launches and recoveries from ships including in challenging winds and sea states.

During the testing phase, Thales and Schiebel showcased the Peregrine’s exceptional capabilities to the specified requirements. The results have been outstanding, highlighting the program’s steadfast adherence to schedule and the unwavering commitment of both companies to excellence.

The Peregrine Programme, a joint effort between Thales and Schiebel, in conjunction with the UK MOD’s support, is now set to commence its first deliveries, ahead of schedule signifying an important advancement in strengthening the UK MOD’s operational capabilities.

“We are immensely proud of the successful Factory Acceptance Test and the progress achieved in the Peregrine Programme,” stated Hervé Hamy, Vice President ISR Business Line at Thales.“Our unwavering dedication to precision engineering and collaboration with Schiebel has resulted in a cutting-edge solution that will undoubtedly strengthen the UK MOD’s operational capabilities.”

It is extraordinary that it has taken the RN so long to acquire a viable RWUAS. An urgent capability requirement was issued in mid-2022. Thales and Schiebel completed factory acceptance trials of the S-100 and radar integration in August 2023. but it has taken a further year to get this well-proven aircraft to sea. Once fully operational, Peregrine will eventually offer a low-cost alternative or complementary capability to the crewed Wildcat helicopter. It will also greatly add to the situational awareness of the frigate, especially valuable in the complex maritime environment of the Middle East.

**226 . Date: 17-09-2024Armed ISR / ISTAR - MALE - General - PlatformEgyptian Company Unveils MALE Drone and Smart MunitionsURL: https://www.uasvision.com/2024/09/17/egyptian-company-unveils-male-drone-and-smart-munitions/**

Egyptian company Robotics Engineering Systems (RES) showcased its locally manufactured drones and smart munitions at the recent Egypt International Airshow (EIAS 2024), which was held at El Alamein International Airport over three days.

The company’s flagship product, the “6th of October” drone, was a key attraction. It is a multi-mission unmanned aerial vehicle, entirely designed, developed, and manufactured in Egypt. It was first unveiled at the Egypt Defence Expo (EDEX 2023).

The “6th of October” drone, a medium-altitude long-endurance (MALE) aircraft, features a sophisticated design with two engines producing 145 horsepower each, an increased main fuel tank capacity compared to previous models, and advanced landing gear with automatic takeoff and landing capabilities.

The drone was displayed armed with guided missiles and smart aerial bombs, enabling it to carry out offensive missions, armed reconnaissance, and border security operations. It boasts a conventional range of 240 kilometres, extendable by deploying multiple ground control stations or satellite control. The drone can remain airborne for over 30 hours and operates at an altitude of up to 18,000 feet. It can fly at a speed of 260 kilometres per hour and land at 120 kilometres per hour. It measures 8.9 metres in length, 5 metres in height, and has a wingspan of 18.5 metres.

The “6th of October” drone is equipped with 13 hardpoints for carrying reconnaissance and surveillance systems, electro-optical and infrared sensors, and synthetic aperture radar (SAR), which can generate 2D or 3D images and maps of terrain. It also features additional fuel tanks.

RES also showcased its range of smart munitions, all manufactured in Egypt for the first time. These included a glide bomb, equipped with aerodynamic control surfaces (wings and tail) and a domestically-made GWD-6 smart munition guidance system that operates in three guidance modes: GPS, inertial navigation system (INS), and electro-optical guidance. It carries a warhead weighing up to 1,000 kilograms and has a range of 50 kilometres.

The company also unveiled long-range standoff munitions. These air-to-ground munitions consist of a 155mm warhead equipped with an aerodynamic control system and the PGK long-range smart munition guidance kit, locally produced by RES. These munitions have a range of up to 80 kilometres. The guidance system weighs 60 kilograms and utilises INS, GPS, and electro-optical guidance.

Finally, RES showcased small-sized smart munitions. These munitions contain 122mm and 155mm artillery shells equipped with an aerodynamic control system and the PGK smart munition guidance kit, manufactured by RES. The munitions have a range of up to 30 kilometres and a guidance system weighing 10 kilograms, utilising INS, GPS, and electro-optical guidance.

**227 . Date: 19-09-2024Armed ISR / ISTAR - HALE - General - PlatformLockheed Eyes Low-Cost Attritable Drone for CCA Increment 2URL: https://www.uasvision.com/2024/09/19/lockheed-eyes-low-cost-attritable-drone-for-cca-increment-2/**

– Lockheed Martin, having “gold-plated” its initial bid for the Collaborative Combat Aircraft program, will focus on lower cost, more attritable aircraft in its proposal for the second increment, the head of the company’s legendary Skunk Works division told reporters Sept. 17.

“What we see from a macro-level environment is … something that has more expendable characteristics and is at a much, much lower cost point seems to be a good place to go explore. And so that’s where we’re exploring and putting time and energy in,”

said John Clark, a Lockheed vice president and general manager of the experimental engineering outfit. He spoke at a briefing at AFA’s Air, Space & Cyber Conference.

He added that the Air Force was still developing requirements for Increment 2 of the CCA program, which aims to produce uncrewed, autonomously piloted aircraft that will partner with manned fighters like the F-35 and provide additional firepower.

“Right now we’re actively looking at how the Air Force is going to go with their requirements,”

he said, adding that he did not want to get out ahead of service leaders.

But he also cited the famous advice from ice hockey legend Wayne Gretzky:

“’Skate where the puck is going to.’ That’s where we think it’s going to,” he said.

Lockheed was one of three unsuccessful bidders for Increment 1 of the CCA, and Clark said the company offered stealth capabilities in that bid that were above and beyond what the Air Force requested. He attributed that decision to the company’s conviction, based on its operational analysis, that stealth was required to make the aircraft survivable and capable of providing “something that actually had value to the Air Force over long haul.”

“With 20/20 hindsight, you could certainly armchair quarterback [that decision] and say, well, the Air Force isn’t valuing survivability right now, so we gold-plated something that they didn’t need gold-plated,” he explained.

Because of the physical characteristics of the winning designs for the current generation of CCA aircraft, and in particular the tail fins, they are likely to be visible to the enemy long before they are able to deploy their sensors, Clark said.

“These tails on the side … are big reflectors,” he said, making the aircraft visible to enemy radar, “which is why, when you look at things like the B-21 [bomber] or … the RQ-170 [Sentinel UAV] they don’t have tails.”

“The whole objective with [intelligence, surveillance and reconnaissance, or] ISR, is you’re trying to create an asymmetric advantage. If I can see you well before you can see me, I have an information advantage, and I can exploit that information to my benefit,” he said.

Clark added there is a trade-off between visibility and affordability.

“I think that there will be a reckoning to come at some point when acquirers are looking at, ‘All right, I’m going to spend $15 million or $20 million an airplane, and the [operational analysis] is telling me that 80 percent or more of them don’t make it home.’”

That begs the question of what is the sweet spot for balancing cost and survivability, he said. “How many airplanes am I willing to spend that sort of money on before that’s a losing proposition financially as a nation?”

He said he was “very interested in how the Air Force will ultimately choose to go down that path. What is the right place [in the force structure] for an expendable asset, and what’s the right place for an attritable asset, and where do you want to have something that comes home every time?”

**228 . Date: 20-09-2024Contract - SoftwareDARPA Awards BAE Systems $4M for Tactical Autonomy ProgramURL: https://www.uasvision.com/2024/09/20/darpa-awards-bae-systems-4m-for-tactical-autonomy-program/**

The Defense Advanced Research Projects Agency (DARPA) has awarded BAE Systems’ FAST Labs research and development organization a $4 million contract for Phase 1 of the Artificial Intelligence Reinforcements (AIR) program.

BAE Systems will use machine learning to innovate simulation models of existing sensors, EW systems, and weapons.

To overcome the fast-paced and uncertain environment that is inherent to air combat and presented a challenge for autonomous agents, the DARPA AIR program aims to advance dominant tactical autonomy for beyond visual range air combat missions. Autonomy solutions will be developed and demonstrated on F-16 testbeds.

“Generating reliable, consistent air combat performance requires a vast amount of data and rapid, robust testing cycles,” said Michael Planer, scientist and principal investigator at BAE Systems’ FAST Labs. “Using machine learning, we will train the models used to make dynamic decisions – ensuring that the Artificial Intelligence (AI) pilot is tested and trusted by human pilots.”

Under the AIR contract, BAE Systems will use machine learning (ML) to innovate simulation models of existing sensors, electronic warfare systems, and weapons within dynamic and operationally representative environments. ML techniques will also capture the underlying physics of aerial maneuvers and systems. The company will then create the processes needed to rapidly design, test, and deliver future iterations of AIR software products.

Work on the AIR program, which is part of BAE Systems’ autonomy portfolio, will take place in Arlington, Virginia and Burlington, Massachusetts.

**229 . Date: 20-09-2024Component - General - Engine / PowersourceNew NSK Gas Turbine Generator Bearing Promotes Longer eVTOL FlightsURL: https://www.uasvision.com/2024/09/20/new-nsk-gas-turbine-generator-bearing-promotes-longer-evtol-flights/**

– NSK has launched a new gas turbine generator bearing specifically for use in electric vertical take-off and landing (eVTOL) aircraft, including large drones. Among the major advances of the bearing are higher speed revolution performance and a new mechanism that reduces the necessary lubricant supply by around 80%, providing a significant contribution to longer eVTOL flight range.

New developments mean that eVTOLs are making significant progress as a means of transportation, with a predicted market size of €124 billion by 2035. Previously, mainstream eVTOL propulsion systems featured complete motorisation. However, to meet the growing need for longer flight range and improved transportation capabilities, most expect the demand for high-output, compact, lightweight hybrid motors to continue growing.

Gas turbine generators stand out from other hybrid motor designs because they can use fuel sources such as biofuels and hydrogen, making them attractive from a carbon neutrality perspective. Today, gas turbine generators are the strongest contender for practical propulsion mechanisms in eVTOL aircraft.

Extending the flight range of eVTOL aircraft hinges on a variety of factors, including the high-speed revolution performance of its gas turbine generator bearings. To meet this demand, NSK set about developing a bearing capable of delivering over 2.5 million dmn (the product of bearing pitch diameter and rotational speed). In addition, the company succeeded in supporting this high-speed revolution performance with minimal yet optimal lubrication needs.

The problem with jet lubrication, the most common lubrication mechanism for high-speed bearings, is that it requires a large amount of lubricating oil and promotes high power loss. Among the alternatives is under-race lubrication, which uses dedicated flow channels in the shaft and bearing inner race to supply oil. While this method offers minimal power loss and oil usage, it has low versatility and comes at a high cost.

To overcome these limitations, NSK’s new lubrication mechanism features an improved spacer shape. Following temporary storage of lubricating oil in the spacer, the mechanism supplies the minimal yet optimal amount of oil to the inside of the bearing using centrifugal force.

NSK’s innovative solution reduces the amount of lubricating oil that the bearing requires to just 25% of that needed by conventional jet lubrication, while also cutting power loss by a third. The new design also yields a highly versatile, low-cost lubrication solution in comparison with under-race lubrication. As another advantage for OEMs, oil supply scavenge pumps and the lubricant tank can now be lighter in weight, contributing further to the flight range of eVTOL aircraft.

**230 . Date: 23-09-2024Armed ISR / ISTAR - MALE - SafetyMQ-9B Sea Guardian on Lease Ditches into Bay of BengalURL: https://www.uasvision.com/2024/09/23/mq-9b-sea-guardian-on-lease-ditches-into-bay-of-bengal/**

A high-altitude-long-endurance MQ-9B Sea Guardian drone that was taken on lease by the Indian Navy from the U.S. ditched into the Bay of Bengal off Chennai after encountering a technical failure on Wednesday (September 18, 2024).

The drone was operating from naval air station INS Rajali in Arakkonam near Chennai, the Indian Navy said.

In 2020, the Indian Navy had taken on lease two MQ-9B Sea Guardian drones from American defence major General Atomics for a period of one year for surveillance in the Indian Ocean. The lease period has been extended subsequently.

“A high altitude long endurance remotely piloted aircraft leased by the Indian Navy operating from INS Rajali, Arakonnam encountered a technical failure at about 2 pm while on a routine surveillance mission which could not be reset in flight,”

the Indian Navy said in a statement.

“The aircraft was navigated to a safe area oversea and carried out a controlled ditching at sea off Chennai,” it said.

The Navy has sought a detailed report from the OEM or the original equipment maker. Controlled ditching generally refers to an emergency landing of an aircraft on water.

General Atomics has been operating and carrying out maintenance of the drones as per the lease agreement. The company is expected to replace the lost drone with another one as mandated under the pact.

The incident comes as India is in the process of procuring 31 MQ-9B Predator drones. India is planning to acquire the drones at a cost of nearly $3 billion primarily to crank up the surveillance apparatus of the armed forces, especially along the contested frontier with China.

In June last year, the Defence Ministry approved the procurement of the MQ-9B Predator armed drones from the US under a government-to-government framework.

The MQ-9B drone is a variant of the MQ-9 ‘Reaper’.

**231 . Date: 01-10-2024Cargo - MALE - Contract - PlatformUS Army Selects LIFT Aircraft and Near Earth Autonomy to Develop Uncrewed Casualty Evacuation SystemURL: https://www.uasvision.com/2024/10/01/us-army-selects-lift-aircraft-and-near-earth-autonomy-to-develop-uncrewed-casualty-evacuation-system/**

– LIFT Aircraft announced that it has been awarded a contract by the US Army Applications Laboratory (AAL) to design a medical multi-mission modular payload, a container that can carry blood supply and casualty evacuations (CASEVAC).

LIFT has partnered with Near Earth Autonomy (Near Earth) to address one of the Army’s biggest challenges – the need to autonomously perform these functions within the crucial “golden hour,” the critical period immediately following trauma when rapid medical intervention significantly increases survival rates.

Major Rickey Royal stated,

“The current practice of relying on crewed vehicles to provide blood resupply and CASEVAC in contested areas has significant challenges. The Army has identified a significant need for a modular, multi-mission payload capable of climate control and telemedicine that can deploy via an autonomous aerial and/or ground platform. An autonomous solution enables speed and efficiency in casualty evacuations and delivery of medical supplies.”

This contract is part of the Special Program Awards for Required Technology Needs (SPARTN) program. This program uses Small Business Innovation Research (SBIR) funding as a powerful innovation tool that moves at the speed of business. SPARTN reduces time to contract and time to payment so the Army can bring in the best company with the best solution.

Designed with a priority on swift deployment and integration with existing military operations, the payload system being developed by LIFT and Near Earth is distinguished by its adaptability, facilitating easy incorporation into various transportation methods and ensuring widespread usability. The payload will utilize proven technologies to incorporate vital signs tracking monitors and will be climate-controlled to maintain blood temperatures.

Matt Chasen, Founder and CEO of LIFT, emphasized the impact of the partnership:

“After multiple contracts with the US Air Force, we’re thrilled to continue our work alongside the Army with broad implications for the wider Department of Defense. Our selection for this project underscores our readiness to expand into broad defense applications. We are confident that this collaboration will ensure swift, autonomous delivery of blood and evacuation services for casualties, and will ultimately save lives.”

At the culmination of the contract, LIFT will demonstrate the modular medical payload being transported by air and ground vehicles, including LIFT’s HEXA Cargo platform with its own uniquely modular design flown and tested by the USAF.

Near Earth has a history of autonomous aerial systems for medical logistics, including the Army Combat Medic autonomous CASEVAC helicopter program, and blood delivery in Project Crimson which was nominated for the Association for Uncrewed Vehicle Systems International (AUVSI) Xcellence in Mission — Humanitarian Award. Near Earth has also developed aerial autonomy for other significant defense logistics programs, including USMC Logistics Connector with Honeywell and Leonardo, USMC MARV-EL with Kaman, OSD Joint Capability Technology Demonstration Unmanned Logistics Systems – Aerial with SURVICE Engineering, and USMC Autonomous Aerial Cargo/Utility System (AACUS) with Aurora Flight Sciences.

Sanjiv Singh, CEO of Near Earth Autonomy, said,

“Our collaboration focuses on integrating proven aircraft, autonomy, and medical technologies to meet urgent battlefield needs. We plan to develop, test, and demonstrate the system over the next 12 months. LIFT’s HEXA and Near Earth’s autonomy systems have a strong synergistic fit. We believe that our approach of combining existing, proven systems is the most efficient way to rapidly revolutionize battlefield medical support while minimizing costs and delays. The sooner we demonstrate the system’s effectiveness and reliability, the sooner it can potentially be out in the field, saving lives.

**232 . Date: 07-10-2024PartnershipUSA and Taiwan Look to Boost Drone CollaborationURL: https://www.uasvision.com/2024/10/07/usa-and-taiwan-look-to-boost-drone-collaboration/**

Drone companies from Taiwan and the United States are exploring ways to work together in a market dominated by China, bringing together Taiwanese enterprises and more than two dozen American companies and officials recently in Taipei.

Attacks by swarms of drones have become an almost daily occurrence in Russia’s war in Ukraine, with Kyiv and Moscow using unmanned aerial vehicles, or UAVs, to carry out strikes and defend themselves from attacks.

As the threat China poses to Taiwan grows, many see drones playing a crucial role in a potential conflict there as well. China’s leader, Xi Jinping, has tasked his troops to be prepared for an invasion of Taiwan by 2027.

And with Chinese companies dominating the market and critical resources used in making drones, analysts say it is important for Taiwan and the U.S. to find ways to create a China-free supply chain.

At a drone expo at National Taiwan University in Taipei this week, hundreds of Taiwanese producers met with several officials from the U.S. Department of Defense and Raymond Greene, director of the American Institute in Taiwan, which serves as the de facto U.S. embassy on the island.

Patrick Mason, the deputy assistant secretary of the Army for defense exports and cooperation, and Andrew Hong, deputy director of the cyber portfolio of the Defense Department’s Defense Innovation Unit, or DIU, spoke at the expo. Mason spoke about

“The Pathway to U.S.-Taiwan Defense Industrial Cooperation” and Hong’s remarks centered on “Defense Innovation with Taiwan.”

For U.S. drone companies, the forum offered the potential to expand business ventures with Taiwan and grow the bilateral trade partnership, according to a statement from the American Institute in Taiwan on Wednesday.

Demand for drone technology in Taiwan is large, especially given China’s drone production prowess. Chinese drone company DJI held 76% of the consumer market for household drones in 2021. These drones have also been deployed on the battlefield in places like Ukraine and Myanmar, a practice that the Chinese government and DJI have condemned.

Hsu Chih-hsiang, an assistant researcher at the Institute of National Defense and Security Research in Taipei, described drones as “combat force-multipliers,” and explained that, even in peacetime, China has already begun sending large drones into Taiwanese territory and even uses small civilian drones to hover in Taiwanese airspace in the Kinmen Islands.

In 2022, former Taiwanese President Tsai Ing-wen made the drone industry a development priority in Taiwan. Since then, Taiwan has established the “Drone National Team” program, subsidizing domestic production of these systems.

Taiwanese Minister of National Defense Wellington Koo revealed in mid-September that Taiwan would procure 3,422 units of six types of domestically produced military drones, including mini-drones, before 2028, and that Taiwan would also separately acquire two types of missile-type attack drones, totaling 976 units, before 2026, to enhance precision strikes and anti-armor capabilities.

Wang Shiow-wen, who is also an assistant researcher at the Institute of National Defense and Security Research, said American support of Taiwanese drone modernization presents an opportunity for Taiwan to break through barriers in production capacity and ensure the security of the supply chain for drones.

Taiwan’s government has set a goal for domestic manufacturers to produce 15,000 drones per month by 2028. That is three times current production levels, according to Taiwan’s government-funded Central News Agency.

Ja Ian Chong, a political scientist at the National University of Singapore, said the three most important considerations for the U.S. and Taiwan in the future of drone production without Chinese components are cost, mass production capacity, and the impact that this might have on American and Taiwanese budgets, technology transfer and scientific development.

China strongly opposes collaboration and engagement between Taiwan and the United States, and it was watching the gathering in Taipei closely.

Chinese state media criticized the visit to Taiwan by the delegation of American companies and defense officials, as well as efforts to create a “China-free” drone supply chain.

Liu Heping, a Chinese commentator, said that by attempting to make Taiwan the “democratic drone supply chain center,” the United States and Taiwan were preparing for a “vigorous arms race” with China.

**233 . Date: 08-10-2024Armed ISR / ISTAR - Small - General - Engine / PowersourceSouth Korean Hydrogen-Powered Drone Flies 14 HoursURL: https://www.uasvision.com/2024/10/08/south-korean-hydrogen-powered-drone-flies-14-hours/**

– Hogreen Air, a local firm in South Korea, has unveiled a high-speed, long-range hydrogen fuel cell drone at the H2 Mobility Energy Environment Technology (MEET) conference in Seoul.

The company developed this long-duration surveillance and reconnaissance hydrogen unmanned aerial vehicle (UAV) for various mission execution.

The drone utilizes hydrogen, either in gas or liquid form.

This hydrogen-powered drone can fly for up to 14 hours. It features radio frequency and an LTE/5G communication system. The drone can carry a maximum payload of 10 kg.

What differentiates this drone from traditional drones is its range of operation. The drone recently flew remotely in Germany, while its operators were located nearly 5,778 miles away in South Korea.

It also flew autonomously in the US, 5,618 miles from the drone’s operators in South Korea.

This has significantly boosted drones’ long-range operations. Drones can be controlled from anywhere in the world as long as they are connected to a mobile network.

The drones also use fuel cells powered by liquified hydrogen, which is 800 times denser than hydrogen gas.

Unlike other drones, which can fly for 10 to 30 minutes using lithium batteries, the Hogreen Air drones can fly for more than 14 hours.

A spokesperson for Hogreen Air told IE at the show that the drone’s high speed, long endurance, better communication systems, and hydrogen fuel have made it possible to fly across the continents.

Hogreen Air specializes in establishing stable systems in the drone industry and provides customized services for various sectors such as defense, industry, education, and services.

The company aims to innovate in accident and safety management for UAVs by promoting drones’ efficient operation and services.

It was founded to focus on the proliferation of green energy through hydrogen fuel cells.

The company, known for manufacturing and selling various drone hardware, software, and comprehensive drone solutions, has developed the ‘Hydrogen Power Pack,’ a power generator system combining hydrogen fuel cells and tanks.

Hogreen Air holds numerous drone patents, including ‘LTE-Based High-Speed Encryption of Video Data’ and ‘Unmanned Pesticide Supply System.’

They are involved in drone development across various agriculture, defense, and AI industries.

Hogreen Air’s PEM (Polymer Electrolyte Membrane) fuel cell platform is characterized by high-performance air-cooled fuel cells that use minimal peripheral components, ensuring reliability and cost-effectiveness.

This system produces clean DC power from supplied hydrogen, emitting only pure water vapor when it combines with oxygen from the air.

Additionally, it operates with minimal noise and vibration, offering environmental advantages over conventional diesel generators.

In 2022, UK-based Intelligent Energy (IE) signed a memorandum of understanding with drone software specialist Hogreen Air in Yokohama.

**234 . Date: 09-10-2024MarketDutch Defence Minister Pledges $440M for Ukraine Drone PlanURL: https://www.uasvision.com/2024/10/09/dutch-defence-minister-pledges-440m-for-ukraine-drone-plan/**

Dutch Defence Minister Ruben Brekelmans said on a surprise visit to Kyiv on Sunday that his country will invest 400 million euros ($440 million) in advanced drone development with Ukraine and deliver more F-16s in the coming months.

More than 2-1/2 years since the start of the Russian full-scale invasion, Ukraine is fighting to thwart Russia’s troops as they inch forward in the east and attack critical infrastructure ahead of the winter months.

“The war, of course, is intensifying every day, and Ukraine is setting up more brigades who all need support, who all need military equipment. We need to have this continuous flow of support,”

Brekelmans told Reuters in Kyiv. The drone action plan will combine Ukraine’s innovation and Dutch knowledge to improve technology used on the battlefield, he said.

“We will focus on different types of drones, so both surveillance drones, more defensive drones, but also the attack drones, because we see that Ukraine needs those more offensive drones also to target military facilities,”

Brekelmans said.

Around half of the investment will be spent in the Netherlands, while the rest will be split between Ukraine and other countries, he added. If the developed drones are successful, more funding will be available to scale up production, according to the defence minister.

The Netherlands has pledged 10 billion euros in military support for Ukraine since the beginning of the Russian invasion and spent around 4 billion euros so far.

After visiting the city of Kharkiv, pummelled by Russian glide bombs, on Saturday, Brekelmans said attacking military targets in Russia was the only way to defend the city.

Ukraine has asked its partners to give it permission to use their weapons to strike targets deep in Russia and provide it with more air defences.

The Netherlands has contributed to its air defence support by driving international partners to supply Ukraine with F-16 jets and pledging 24 of them.

The first batch of planes from the Netherlands is already operating in Ukrainian airspace, according to the minister, while the others will be delivered “in the upcoming months and maybe beginning of next year.”

The country is also delivering reserve parts, ammunition and fuel for jets as it seeks to expand pilot training opportunities through meeting with partner countries and private sector players like Lockheed Martin to keep jets operational, he said.

The Netherlands has also announced a plan to assemble a Patriot air-defence system for Ukraine relying on parts from different countries but Brekelmans said it had struggled to source some parts.

He said Ukraine was already using one Dutch-supplied Patriot radar and “three launchers are going to be delivered very soon.”

**235 . Date: 15-10-2024Loitering Munition - Mini - GeneralAeroVironment to Manufacture Switchblade 600 in UkraineURL: https://www.uasvision.com/2024/10/15/aerovironment-plans-to-manufacture-switchblade-600-in-ukraine/**

The American company AeroVironment has signed an agreement with a Ukrainian company to localize the Switchblade 600. The agreement was signed at the International Defense Industries Forum in Kyiv.

The Ukrainian company is not named for security reasons.

Brett Hush, Senior Vice President and General Manager of AeroVironment’s Barrage Strike Systems Division, shared in a comment to Militarnyi that cooperation with the Ukrainian company will be phased.

“It will start with basically sending subsystem components… So, it will start with a very simple integration. And then over time, we will localize more and more systems and improve the system so that it becomes better than it is today,” he said.

Now, the agreement has to be approved by the US government, and both countries are working on it. It may take about nine months. As for the volume of future production, the figure is not specified. At the same time, Brett Hush noted that it should be several thousand Switchblade 600s per year.

He noted that the Ukrainian military is not using the Switchblade 600 loitering munition as planned. Initially, this weapon was provided to U.S. Special Forces for irregular warfare and engaging moving targets.

The Ukrainian military uses these weapons to hit targets worth $20-25 million, such as the Pantsir missile system or S-300 air defense systems.

“There are some impressive videos in open sources. I think it’s really important that although it is an anti-tank missile, the same one used in the Javelin, it is not used in Ukraine against tanks. The Russians can replace tanks on a regular basis. But they can’t replace expensive air defense systems because they have a limited number of technicians to work with the electronics,” said Brett Hush.

The AeroVironment representative also noted that the company is working on simplifying Switchblade’s operation. Brett Hush noted that there is different feedback on the effectiveness of the application from different departments. However, the result can be improved with the help of training, which should be carried out directly in Ukraine.

“In accordance with US policy, training is carried out outside Ukraine. So operators have to travel to Poland, where we have the right to conduct training, or to other places outside of Ukraine. We are trying to lobby our government to get permission for instructors to come to Ukraine. I have a few people now, but they can’t teach. They can only listen and get feedback. I think it will make a big difference if we simplify the process,” added Brett Hush.

In August of this year, it became known that the United States had placed an order to purchase Switchblade 600 worth about $1 billion.

**236 . Date: 18-10-2024Cargo - MALE - GeneralAirbus Completes First Aerial Logistics Connector Demo for US Marine CorpsURL: https://www.uasvision.com/2024/10/18/airbus-completes-first-aerial-logistics-connector-demo-for-us-marine-corps/**

– Airbus recently completed its first program demonstration in support of the U.S. Marine Corps Aerial Logistics Connector contract at Marine Corps Air Station New River and Marine Corps Base Camp Lejeune.

The demonstration evaluated the performance characteristics of the UH-72B Lakota platform, validated the aircraft’s ability to carry specialized cargo, showcasing Airbus’ approaches to meeting Marine Corps requirements for an Aerial Logistics Connector system to support expeditionary advanced base operations.

“Integrating warfighter inputs early on in this phase of the contract helps ensure we’re hitting all the marks and gives us invaluable insights so we deliver the right capabilities to the U.S. Marine Corps,”

said Rob Geckle, Jr., Chairman and CEO of Airbus U.S. Space and Defense.

This event is part of the Aerial Logistics Connector Middle Tier of Acquisition (MTA) Rapid Prototyping Program, which aims to provide the service with aircraft prototypes to demonstrate capabilities to the warfighter through a series of operational demonstrations and experiments. Future demonstrations will provide further information about the aircraft’s capabilities and will focus on modifications necessary for the aircraft to meet Marine Corps requirements to operate autonomously and carry specialized payloads. These demonstrations will continue throughout the rest of 2024 and 2025 and will inform future acquisition decisions for the opportunity to build prototype aircraft.

In May 2024, Naval Air Systems Command (NAVAIR) awarded Airbus U.S. Space & Defense a Phase I Other Transactional Authority Agreement, through Naval Aviation Systems Consortium, based on its unmanned UH-72 Logistics Connector concept, a variant of the proven UH-72 Lakota platform.

The Aerial Logistics Connector effort is one of several efforts across the Department of Defense to deliver logistical support in distributed environments during peer or near peer conflicts.

**237 . Date: 23-10-2024Cargo - MALE - Contract - SoftwareDARPA Taps Sikorsky to Add Autonomy to a US Army Black Hawk HelicopterURL: https://www.uasvision.com/2024/10/23/darpa-taps-sikorsky-to-add-autonomy-to-a-us-army-black-hawk-helicopter/**

– Sikorsky, a Lockheed Martin company, has received a $6 million award from the Defense Advanced Research Projects Agency (DARPA) to install the company’s ALIAS/MATRIX flight autonomy system onto the U.S. Army’s experimental fly-by-wire UH-60M Black Hawk helicopter.

Designated MX, the upgraded aircraft will enable the U.S. Army Combat Capabilities Development Command (DEVCOM) to test and evaluate a wide range of autonomy capabilities, from single pilot operation to fully uninhabited flight.

“Autonomy-enabled aircraft will reduce pilot workload, dramatically improve flight safety, and give battle commanders the flexibility to perform complex missions in contested and congested battlespace, day or night in all weather conditions,” said Rich Benton, Sikorsky vice president and general manager. “Soldiers will rely on Black Hawk helicopters into the 2070s, and modernizing the aircraft today will pay dividends for decades across Army Aviation’s current and future aircraft.”

The MATRIX autonomy system forms the core of DARPA’s ALIAS (Aircrew Labor In-cockpit Automation System) program. As part of ALIAS in 2020, Sikorsky provided the hardware and engineering support to add fly-by-wire flight controls to the MX aircraft. When combined with the MATRIX autonomy system, the MX aircraft will be a near-exact copy of Sikorsky’s UH-60A fly-by-wire Optionally Piloted Black Hawk helicopter, the company’s flying lab that has tested MATRIX autonomy over hundreds of flight hours.

Sikorsky will integrate the MATRIX system into the MX helicopter in 2025. The aircraft will enable DEVCOM to explore and mature the practical applications and potential concept of operations of a scalable autonomy system. Evaluation will include assessment of different sensor suites to perceive and avoid threats, obstacles and terrain, and develop standards and system specifications interfaced with the MATRIX system and a fly-by-wire flight control system.

In July 2024, Sikorsky and DARPA demonstrated to U.S. military service personnel and senior Department of Defense officials how the Optionally Piloted Black Hawk helicopter can easily be flown and controlled by an operator in the cabin, or on the ground by entering high level mission goals via a tablet.

These recent demonstrations built on autonomous flights at Project Convergence 2022, when Sikorsky and DARPA successfully demonstrated to the U.S. Army how the Optionally Piloted Black Hawk helicopter, operating without humans on board, can safely and reliably perform internal and external cargo resupply missions.

Autonomous capabilities such as MATRIX technology are a key part of Lockheed Martin’s 21st Century Security® vision, which includes modernizing the Black Hawk helicopter to stay ahead of new and emerging threats.

**238 . Date: 28-10-2024Armed ISR / ISTAR - HALE - GeneralUS Marines Deploy ‘Loyal Wingman’ Drone in Joint Force TestURL: https://www.uasvision.com/2024/10/28/us-marines-deploy-loyal-wingman-drone-in-joint-force-test/**

A test Kratos XQ-58A Valkyrie unmanned combat aerial vehicle deployed recently in a first-ever joint force data link integration test during Emerald Flag 2024.

The Marine Corps’ “Loyal Wingman” drone provides targeting data to F-35Bs and other aircraft.

“The XQ-58A effectively demonstrated its capabilities as a forward deployed sensing platform – providing critical threat targeting data to Marine Corps fifth-generation aircraft,”

reads a Marine Corps press release on the integration effort.

Procured by the service under the Penetrating Affordable Autonomous Collaborative Killer, or the Portfolio (PAACK-P) program, which will serve as an experimentation bed for the Marine Air-Ground Task Force Unmanned Aerial System Expeditionary (MUX) Tactical Aircraft (TACAIR), the Marine Valkryie drones took flight for the first time last year. Successive flight tests occurred in February and September of this year, with the latter acting as preparation for the service’s data link integration effort at Emerald Flag.

Starting in 2020, the Air Force-led Emerald Flag series of exercises focuses on the joint integration of platforms across the services in a multi-domain environment. The exercise’s activities are centered around Eglin Air Force Base, which hosts numerous test and development components and a maritime testing range. The exercise has also been the site of previous force integration efforts by the Air Force, as seen in the 2022 iteration that included MQ-9A Reaper drones demonstrating their Satellite Communication abilities to conduct cross-country operations in support of Agile Combat Employment.

Elgin has also hosted the Marines for prior testing efforts of Valkyrie under PAACK-P. The base hosted the service’s second flight test, which was called a “key milestone in implementing Project Eagle,” the notional name for the Marine Corps yet-to-be-released 2024 aviation plan.

For the Marine Corps, this year’s iteration of Emerald Flag centered around the Valkyrie as a sensor and its ability to transmit what it saw back to both the service’s F-35B fifth-generation fighters and platforms from other services. Col. Derek Brannon, the branch head for the Cunningham Group within the office of the deputy commandant for aviation, highlighted the integration of Valkyrie with a four-ship of Lightning IIs and other aircraft via tactical data links and digital communication.

“The success of this flight test during Emerald Flag pushed the manned-unmanned teaming concept a step further for the entire Joint Force,” Brannon said.

Valkyrie’s Link-16 capabilities were previously tested and verified during the drone’s third flight test, which also marked the first time the Pentagon “controlled an air vehicle using offboard expeditionary methods.”

“Initial results indicate that the prototype met threshold requirements for autonomously exchanging relevant tactical information. These Link-16 capabilities significantly enhance the Marine Air-Ground Task Force’s ability to conduct integrated and joint operations, contributing to the Marine Corps’ mission to deter conflict and, when necessary, defeat enemies in complex and evolving scenarios,” reads a news release about the September test.

With this latest test, the Kratos drone should only have two more planned tests under the original PAACK-P requirements. The service’s tests aim to examine the viability of the “Loyal Wingman” platform to support the F-35B through autonomous electronic support, AI-enabled assistance to combat air patrols and delivering or supporting long-range fire missions. Kratos demonstrated the platform’s electronic warfare capability in April when one of the drones, in conjunction with two F-35Bs, conducted an electronic attack. The service did not publicly report this test despite it occurring before the third flight test in September.

“This test flight marked the capstone event for the PAACK-P Rapid Defense Experimentation Reserve project and proved the tactical utility of uncrewed offboard sensing platforms,”

said Lt. Col. Bradley Buick, future capabilities officer for Cunningham Group.

**239 . Date: 29-10-2024PartnershipEDGE and Baykar Partner on UAS DevelopmentURL: https://www.uasvision.com/2024/10/29/edge-and-baykar-partner-on-uas-development/**

– EDGE, a global advanced technology and defence group, and Baykar, Turkey’s unmanned aerial vehicle (UAV) and artificial intelligence technology company, have signed a Cooperation Agreement at SAHA Expo 2024. Formalised by Hamad Al Marar, Managing Director and CEO of EDGE, and Haluk Bayraktar, CEO of Baykar, during the event, this agreement establishes a framework to strengthen ties, enhance capabilities, and expand market presence for both companies.

Under the terms of the agreement, the cooperation will centre on integrating EDGE’s guided munitions and payloads onto Baykar’s advanced UAS platforms, with Baykar leading the integration efforts. EDGE will provide technical assistance, including designing, manufacturing, and supporting the necessary equipment for successful integration. This initiative aims to meet market demand swiftly and effectively, ensuring supply chain security and delivering high-performance solutions for their customers.

Hamad Al Marar, Managing Director and CEO of EDGE, said:

“This agreement with Baykar represents a significant milestone in further strengthening our established collaboration. By integrating our advanced solutions onto Baykar’s proven UAS platforms, we can respond swiftly to evolving market demands while further enhancing the capabilities we deliver to our customers. Additionally, this partnership underscores the strategic importance of working with Türkiye’s well-established companies and leveraging its robust defence ecosystem. Together, we are reinforcing our commitment to delivering cutting-edge technology with agility, efficiency, and innovation, while ensuring secure and resilient supply chains.”

Haluk Bayraktar, CEO of Baykar, said:

“Today, alongside the CEO of EDGE, one of the largest defence organisations in the UAE and one of the top 30 in the world, we signed an agreement between BAYKAR and EDGE to integrate EDGE-developed smart munitions into our platforms and for joint cooperation. In recent years, the UAE and Türkiye have built significant defence relations, with the UAE being Türkiye’s largest trade partner in the Middle East. I would like to extend my gratitude for this agreement, with the hope that it will contribute to the independence and security of both nations.”

**240 . Date: 29-10-2024Cargo - GeneralMalta’s First Drone Delivery Service Coming SoonURL: https://www.uasvision.com/2024/10/29/maltas-first-drone-delivery-service-coming-soon/**

A new drone delivery service that promises to halve the time needed to transport medical supplies between hospitals in Malta is set to be launched within weeks, according to the company behind it.

Flying ZERO plans to use a fleet of drones to deliver goods around the country. The service will initially connect St James Hospitals in Żejtun and Sliema, with founder and CEO Alexander Esslinger saying the journey will take just seven minutes.

That’s significantly faster than the 20-minute drive, which can be much longer during times of traffic congestion.

The company completed its first test flight in Ta’ Qali last summer and plans to conduct its final test flight before the transport authorities by the end of October. Transport Malta will need to give the final authorisation after the test flight for the company to proceed further.

Esslinger, a former commercial pilot, explained that the demonstration will involve delivering “lifesaving” medical supplies between the two private hospitals. He added that the company hopes to begin commercial operations within days of the final test.

The company, which plans to start with four drones capable of carrying up to three kilogrammes over distances of 120km, has ambitious expansion plans.

Esslinger said they aim to extend services to Gozo and eventually other destinations like Sicily and transport heavier cargo with future models able to transport up to 15 kilogrammes over 50km.

“We can quickly respond and deliver spare parts… And this is not only to Malta, we’re not talking only land-to-land delivery; we also have plans for shore-to-ship and ship-to-ship,”

he said, pointing to fuel samples and medical supplies as examples of items that could be carried to vessels in Maltese waters.

Esslinger said while the company was eyeing commercial delivery services marketed directly to consumers, for now such a service was not cost-effective due to the company’s small size and unfeasible due to “regulatory challenges”.

“For now, having just two locations to connect, we can clearly define a flight path,”

he said, stressing the company’s route between St James Hospitals had been agreed with the authorities in advance, involving environmental assessments and consultation with groups including Birdlife.

Esslinger said that sending an item by drone within four hours will cost €39 at launch while sending an item immediately will cost €69 but noted that studies by accounting firms suggested the price could be brought down as low as €5 in the future.

Keen to stress the company’s green credentials, Esslinger said the company will charge its drones using energy generated from solar panels at launch sites in Żejtun and Sliema, which, he said, should be able to store energy for 48 hours of operations.

The company estimates it will be able to save more than four kilograms of CO2 emissions for every 35km flown using its small class of drones. But, with drones flying overhead, equipped with cameras used to pilot them, privacy concerns are likely to be raised.

Confirming that footage of flights will be recorded for “insurance purposes”, Esslinger stressed it “will be deleted if the flight is successful”, adding people did not complain about CCTV systems on buses or in other public places.

“It’s really for possible investigations… and for safety that we have the recordings on board… once we are operational, we will provide footage of our test flights on our website so that everybody can see what we see,” he said.

“They are commercial drones; they are not for surveillance.”

Responding to concerns of drones encountering issues during flight and falling to earth, potentially with safety implications, Esslinger stressed the company was an operator and not the manufacturer of the drones.

“This question would be addressed to somebody who is prototyping, making test flights… we are an operator like Air Malta; we use technology, aircraft which are already tested and certified by authorities.”

Esslinger said the routes used by the company’s drones had been planned to avoid high-density population areas, buildings and other hazards.

“What we do is look where we fly and what is the ground risk; are we flying over fields? Is the area populated? Are there farms and cities?”

He said that, while the fastest route was a straight line between two points, the company’s flight paths looked more like a “zigzag” and had been agreed with transport authorities in advance, adding the company would avoid flying in adverse weather conditions.

“We spent two years here making it safe… [to be] the first aerial delivery service here in Malta.”

St James Hospital confirmed the partnership between the two companies, while a spokesperson for Birdlife confirmed the NGO had been consulted and had warned the drone company about the danger of collisions with birds, among other concerns.

Transport Malta will need to give the final authorisation after the test flight for the company to proceed further.

The company is among those taking part in Malta Enterprise’s Startup Festival Malta event at the Malta Fairs and Conventions Centre today and tomorrow.

**241 . Date: 30-10-2024AcquisitionDELAIR Acquires SQUADRONE SYSTEMURL: https://www.uasvision.com/2024/10/30/delair-acquires-squadrone-system/**

– DELAIR has announced the acquisition of Grenoble-based drone manufacturer SQUADRONE SYSTEM, a specialist in drone swarms and industrial inspection. The Toulouse drone manufacturer confirms its dual development strategy (civil & defense) and accelerates the deployment of its technological roadmap.

Founded in 2014 in Grenoble, SQUADRONE SYSTEM., with a workforce of 22 and estimated turnover of €2M in 2024, specializes in the design of multi-copter drones for complex use cases:

SQUADRONE SYSTEM has also proved its ability to mass-produce UAVs in significant volumes with the HEXO+ drone, which was produced in France at a rate of 600 UAVs/week, and to form partnerships for the dissemination of its key technologies (swarms, anti-drone systems) with major defense players such as Thalès and Safran Electronics & Defense.

With this acquisition, aerial and underwater drone manufacturer DELAIR positions itself as a player in the strengthening of the drone sector in France, and reaches a new milestone in its growth, with a workforce of 150 and a projected turnover of over 30 million euros by 2024.

“While DELAIR’s Security/Defense business has been particularly dynamic over the past 2 years, our positioning is resolutely dual, with the aim of balancing our civil and military activities at mid-term. The acquisition of SQUADRONE SYSTEM enables us not only to acquire directly the technological backbone of drone swarms, but also to develop our civil industrial inspection activity”, explains Bastien MANCINI, CEO of DELAIR.

“The acquisition of SQUADRONE SYSTEM is perfectly aligned with our technological roadmap, which is built around 5 major technological building blocks (energy, image processing, electronic warfare, swarms and certification). The synergies generated will enable us to gain precious time in an increasingly intense European and global competitive field” adds Bastien MANCINI.

After Toulouse, the world’s leading aeronautics center, and Marseille, home to its marine and submarine activities, Delair confirms its local presence by opening a third site in Grenoble, the historic hub of microelectronics in France. At the heart of a world-beating micro and nanotechnology innovation ecosystem.

“This industrial and territorial vision of our development will enable us, step by step, to create a European leader in robotics, based on the technological, academic and industrial specialties specific to each territory and necessary for our complex systems. This will enable us to confront global competition with great ambition,” concludes Bastien MANCINI.

**242 . Date: 31-10-2024Armed ISR / ISTAR - MALE - Partnership - PayloadBayraktar TB2 UAV to Carry FPV Drones Made by Croatian Firm, ORQAURL: https://www.uasvision.com/2024/10/31/bayraktar-tb2-uav-to-carry-fpv-drones-made-by-croatian-firm-orqa/**

Turkey’s Bayraktar TB2 UAVs which have made a name for themselves as attack drones, will now carry Croatia-made FPV drones which are increasingly being used in battle for attack and reconnaissance missions.

A deal to this effect was signed between Turkish Baykar, the maker of Bayraktar drones and Croatian firm, ORQA, a specialist manufacturer of first-person view (FPV) drones at the SAHA Expo 2024 in Istanbul today.

Using the Bayraktar TB2 as an aerial platform to release the FPV drones from a height will provide a significant advantage in battle, being able to operate from a contested environment and release the drones in close proximity to the enemy.

“Today, together with the esteemed representatives of the Croatian Ministry of Defense and our Croatian Ambassador, we signed an agreement with the Croatian company ORQA for the integration of the FPV Drones they developed into our Bayraktar TB2 platform, the development of joint operational use concepts and technological cooperation. I wish this agreement between the two countries to be beneficial,”

BAYKAR General Manager Haluk Bayraktar was quoted as saying by SavunmaSanayiST.com.

ORQA skydive

The concept of using large drones to launch smaller drones is not new and provides several advantages, such as enhanced reconnaissance through wider area coverage and increased situational awareness. Smaller drones can improve survivability by absorbing enemy fire to protect the primary drone and by carrying specialized equipment, which expands mission capabilities and increases payload capacity. Additionally, they extend the primary drone’s range for longer missions and are particularly effective in search and rescue operations, allowing access to areas that larger drones cannot reach.

In March 2021, the U.S.-made Kratos XQ-58 Valkyrie successfully released an Area-I Altius-600 small unmanned aerial system (UAS) from its internal weapons bay during its sixth test flight.

This concept is also being explored on land. At the Zhuhai Airshow this year, China unveiled a concept for a “land aircraft carrier” drone. This innovative design involves a large unmanned ground vehicle (UGV) that functions similarly to an aircraft carrier but operates on land. The UGV is capable of carrying, deploying, and retrieving multiple smaller unmanned aerial vehicles (UAVs), offering a mobile platform for drone support and launching. Such systems could significantly enhance operational flexibility and reach, enabling rapid deployment and support of drone fleets in areas lacking traditional airbases or carriers.

**243 . Date: 05-11-2024PartnershipBaykar to Manufacture Drones in KazakhstanURL: https://www.uasvision.com/2024/11/05/baykar-to-manufacture-drones-in-kazakhstan/**

Kazakh Defense Minister, Colonel General Ruslan Zhaksylykov has visited Istanbul, Turkey to participate in the SAHA EXPO Defense and Aerospace Exhibition.

Zhaksylykov held discussions with Turkish counterparts, including National Defense Minister Yasar Guler and President of the Defense Industry Agency Haluk Gorgun, Caliber.Azreports, citing the Kazakh defense ministry.

The talks with CEO of Baykar Defense Haluk Bayraktar were particularly productive. The sides agreed to develop a roadmap for localizing the production of tactical unmanned aerial systems and operational-level loitering munitions within Kazakhstan.

Since 1986, Baykar has championed domestic production to enhance Turkey’s technological independence and has recently emerged as a leader in revitalizing the Turkish defense and aviation sectors.

The company proudly transitioned its engineering expertise, originally from the automotive industry, into aviation with a new generation of engineers, becoming one of the world’s leading developers of unmanned aerial vehicles (UAVs). Baykar’s development of Turkey’s first indigenous UAVs has been driven by a commitment to trust in engineering talent and intellectual resources.

This culture of continuous production and innovation has significantly contributed to the success of Baykar’s defense technologies, which have been integrated into the Turkish Armed Forces and exported to numerous countries. At the Baykar R&D Centre, certified by the Turkish Ministry of Industry and Technology, the company focuses on creating groundbreaking technologies with indigenous capabilities. Its result-oriented and motivated team, combined with interconnected R&D and production processes, enables the swift application of new technologies.

Beyond designing and producing unmanned and autonomous systems, Baykar aims to ensure that all societal groups, including military personnel and industrialists, adopt these innovations. With remarkable achievements in Turkish aviation and defense driven by self-funded R&D and a 93 per cent localization rate, Baykar continues developing some of the world’s most advanced systems in the UAV sector.

**244 . Date: 07-11-2024ISR / ISTAR - Mini - GeneralNYPD to Equip Some Cruisers with DronesURL: https://www.uasvision.com/2024/11/07/nypd-to-equip-some-cruisers-with-drones/**

The NYPD’s Drone as First Responder program is expanding to equip some police vehicles with drones, allowing officers to deploy them directly from patrol cars as needed.

This initiative, now in its third phase, builds on the department’s existing use of drones to respond to 911 calls, emergency situations and to monitor high-crime areas, according to the report.

Deputy Commissioner Kaz Daughtry said:

“If people are reporting shots fired, reporting an assault in progress, yes, the drone will be arriving simultaneously with a police car”

Since its launch in May, the program has been deployed in precincts with higher violent crime rates.

When a 911 call is made, it is relayed to both police dispatch and drone operators in the Joint Operations Center to enable rapid aerial support, according to the report.

Daughtry shared long-term plans for drones to assist in medical emergencies.

“Eventually, we’re exploring options where let’s say for example in Central Park, someone calls 911 and there’s an overdose. I want that drone to drop Narcan. Somebody called and there is a person having a heart attack on the actual track and field section of Central Park. I want that drone to drop an AED before EMS even gets there so that they can start the process of first aid.”

In the next phase,

“We’re going to have drones in the back of some of the police cars. For example, if we’re chasing a suspect and the suspect goes into the woods or he’s now hiding behind houses, I can go into the back of my car, open up the trunk, take out the drone, turn it on, and then tell the Joint Operations Center to launch that drone. They can launch that drone autonomously from One Police Plaza and help with the aerial search and give us an aerial tactical view,”

**245 . Date: 08-11-2024Armed ISR / ISTAR - HALE - General - PlatformNew Heavyweight Chinese Jet Drone Could be a Swarm MothershipURL: https://www.uasvision.com/2024/11/08/new-heavyweight-chinese-jet-drone-could-be-a-swarm-mothership/**

Anew very large jet-powered Chinese drone said to have a 10-ton maximum takeoff weight, or a mockup thereof, has emerged ahead of the formal opening of this year’s Zhuhai Airshow. The design notably appears to be at least depicted as being fitted with a modular payload section designed to launch swarms of smaller uncrewed aerial systems.

Reportedly dubbed Jiu Tian, or “High Sky” in Chinese, the new jet drone design comes from the state-run Aviation Industry Corporation of China (AVIC). The example at Zhuhai, which officially opens next week, is also marked “SS-UAV” in Latin script. While “UAV” (uncrewed aerial vehicle) seems obvious, it is unclear what the “SS” might stand for.

The Jiu Tian has a high main wing with minimal, if any sweep and small winglets at the tips, along with an h-shaped tail. The design is powered by a single jet engine on top of its central fuselage and has a tricycle landing gear arrangement. The combination of features gives the drone, in some very broad strokes, the outward visual appearance of something of a mashup of the A-10 Warthog and OV-10 Bronco attack aircraft.

A sensor turret of the kind typically fitted with a mix of electro-optical and infrared cameras is mounted under the Jiu Tian’s nose. The drone also has a nose radome pointing to provisions for a radar inside.

As noted, there are reports that the Jiu Tian has a maximum takeoff weight of around 10 tons. For comparison, the CH-6 armed drone that emerged at Zhuhai in 2021, another relatively large jet-powered design, is said to have a maximum takeoff weight of 7.8 tons. A year later, AVIC’s Chengdu Aircraft Industry Group (CAIG) subsidiary also rolled out a new Wing Loong 3 pusher-propeller-driven armed drone, the largest member of the Wing Loong family to date, with a stated maximum takeoff weight of six tons. As another reference point, the stated maximum takeoff weight of newer extended-range versions of the U.S. MQ-9 Reaper is just under six tons.

The Jiu Tian also sports four stores pylons under each wing, though nothing is seen loaded onto them in the images that have emerged so far.

By far, the most interesting feature is the central payload section, which is labeled “Isomerism Hive Module” in English. Isomerism is a term typically used in chemistry that refers to the potential existence of isomers, which are molecules or ions with identical molecular formula, but that differ in the physical and chemical arrangements of their atoms. This appears to be something of a mistranslation of the Chinese phrase printed above on the drone, which says “ascension of the beehive mission module,” according to a machine translation. That, in turn, points strongly to the module as least being meant to reflect one capable of launching smaller drones, potentially in networked swarms.

China’s interest in swarming capabilities and the ability to launch them from various platforms, including high-altitude balloons, is not new. For military purposes, swarms have a number of inherent benefits, including the ability to rapidly fan out across a broad area to carry out various missions depending on how they are configured, including intelligence, surveillance, and reconnaissance (ISR), electronic warfare, and kinetic strike. Individual drones in a swarm can also equipped with different payloads to give the entire grouping a multi-mission capability. Large numbers of uncrewed aerial systems operating closely together also present significant challenges for defenders, who could easily find themselves overwhelmed or otherwise confused about how to best respond to the incoming threats.

The War Zone previously laid out a case for giving exactly this kind of drone swarm launch capability to reconfigured P-8 Poseidon maritime patrol planes, which you can read more about here. Drones launching other drones offers a way to push these capabilities further forward while reducing the risk to crewed platforms.

Beyond the ability to launch swarms, Jiu Tian’s underwing pylons and sensors point to the drone being designed to have onboard ISR and strike capabilities, as well. Though shown with the drone mothership module, the design appears to have a highly modular central section that could be reconfigured to give the drone other capabilities, such as additional sensor packages, air sampling systems, or even the ability to deliver certain cargoes.

More broadly speaking, Jiu Tian could give China’s armed forces a valuable additional multi-mission long-range and long-endurance uncrewed platform. Jet propulsion, in general, offers benefits when it comes to reducing transit times to and from mission areas and endurance once on station.

Though not a stealthy design, Jiu Tian presents another potentially important addition to China’s uncrewed arsenal, including in the role of drone swarm mothership.

**246 . Date: 12-11-2024Tanker - HALE - General - PlatformSkunk Works Reveals New Optionally Crewed Tanker ConceptURL: https://www.uasvision.com/2024/11/12/skunk-works-reveals-new-optionally-crewed-tanker-concept/**

– Lockheed Martin’s Skunk Works advanced projects division has put forward a new notional vision for a stealthy pilot-optional aerial refueling tanker. This comes as the U.S. Air Force is refining requirements for a future Next Generation Air-Refueling System (NGAS) ‘system of systems’ and amid serious concerns about how the service expects to pay for that and other modernization priorities.

An artist’s rendering of a Lockheed Martin Skunk Works concept for a potential stealthy and autonomous Next-Generation Aerial-refueling System (NGAS) aircraft is getting new attention after a repeat display at the recent Airlift/Tanker Association meeting.

The concept breaks with many other notional futuristic tanker designs which have been variations on a crewed flying wing or blended wing body. The Skunk Works artwork shows an uncrewed aircraft with a conventional planform, shaped for some degree of stealth.

The image, displayed at the A/TA’s conference last week in Grapevine, Texas, reveals a highly flattened design with Air Force-style refueling booms deployed from pods on the far outboard of the wings. Two outward-canted stabilizers at the tips of the elevators sit well apart from a central, sawtooth exhaust, but out of the way of the two refueling stations. The exhaust suggests a single engine, but the angle of the depiction does not reveal where the air intakes are, or their shaping.

It’s not clear whether the flying booms used to connect to receiver aircraft could be made stealthy, a problem long acknowledged by designers. The ones shown in the image appear similar to those used on the KC-135, although a differently-colored leading edge on the control winglets may suggest a stealth treatment.

The notional NGAS images show the aircraft refueling two Lockheed F-35s. No central refueling station is depicted, nor is there an indication of a Navy-style probe-and-drogue capability.

There is no apparent cockpit in the images, indicating the aircraft would be autonomous. That fits with a growing trend, as Boeing’s MQ-25 tanker for the Navy is an autonomous aircraft, and several other companies have demonstrated the ability to conduct air refueling without a human crew onboard. The Air Force has also expressed a desire to reduce the number of aircrew required on tankers.

The general shaping of the design—chines, sawtooth seams, and wing leading edges at the same angle as the elevators—suggest a low-observable design, but perhaps not an extremely low observable concept.

“This graphic depicts a notional concept of an optionally-crewed future air-refueling platform,” a Skunk Works spokesperson said.

“Our team has been maturing the next generation of air mobility through investments in survivability, autonomy, resilient communications and digital transformation that will enable the range and persistence needed for contested air refueling operation.”

The spokesperson noted that the design was publicly displayed at the 2023 A/TA conference but it “didn’t draw the attention it’s receiving this year.” Lockheed has subsequently released other NGAS artist’s concepts, and the spokesperson said none of them exactly represent what the company may submit to the Air Force for an NGAS competition.

The concept art is drawing attention as the Air Force wraps up its NGAS Analysis of Alternatives. Air Force acquisition executive Andrew Hunter has said on various occasions that the AOA would be concluded in the fall of calendar 2024 and provide a way ahead for NGAS and a potential “bridge tanker.”

Hunter has described the latter as a way to keep some kind of tanker in production until the stealthy NGAS is available, circa 2033-2035. The current contract for Boeing KC-46As concludes around 2028 at 179 aircraft. Air Force officials have said the “bridge tanker” program could involve as many as 75 aircraft.

The concept for the NGAS is that it will accompany crewed fighters and Collaborative Combat Aircraft into contested airspace. It will be much smaller than traditional tankers like the KC-46 and KC-135 in order to have comparable stealth with the aircraft it escorts, and to be able to operate out of smaller airfields. The concept also calls for the NGAS to shuttle between older, larger tankers, flying out of reach of adversary missiles, and combat aircraft well inside the combat zone. The Lockheed concept shows the tanker with an aerial refueling receptacle of its own, centrally located on the aircraft’s spine.

Whether the NGAS will come to fruition is in considerable doubt, however. Air Force Secretary Frank Kendall, speaking at the A/TA meeting, said the service cannot simultaneously afford the NGAS, Next-Generation Air Dominance (NGAD) air superiority fighter and Collaborative Combat Aircraft (CCA) fleet of autonomous wingman drones simultaneously. Absent a large influx of resources, the Air Force will have to “get creative” to come up with a scheme for air dominance that will work with a mix of new and old systems.

Analysts at several think tanks have said that five percent funding increase above inflation for the U.S. military, suggested by some close to incoming President Donald Trump, would not be sufficient to address the wave of conventional and strategic weapons modernization deficits facing the Air Force.

The Skunk Works’ notional design is pilot optional, with no clear provision for a crewed cockpit seen in the renderings available. It is possible that a cockpit could be fitted, as required, in place of a faired-over section on top of the forward fuselage. Another variation of the rendering might also exist showing a cockpit.

A pilot-optional design versus a completely uncrewed version does offer certain benefits. The War Zone previously explored this in detail after the emergence of the stealthy Model 437 Vanguard technology demonstrator jet from Northrop Grumman subsidiary scaled composites earlier this year, writing:

“Unmanned aircraft are still quite restricted as to where and how they can operate. A pilot totally changes this massive bottleneck and means the aircraft can be flown wherever it needs to go, to participate in any developmental flights or training exercises, no matter how complex. It can do this unburdened by typical drone airspace restrictions and the need for chase aircraft that can be required in certain situations. Just ferrying to a different location while manned, so it can access airspace where it can fly as if it were an unmanned aircraft, is a giant advantage.”

“For many tests, having a human onboard can accelerate the speed at which they can be accomplished. At its most basic, initial primary flight testing of the airframe will go far faster with a pilot at the controls. Overall, more risks can be taken when executing autonomous activities with a pilot there to take over and act as a safety backstop if needed.”

**247 . Date: 17-11-2024Hybrid Rotary / Fixed Wing - Cargo - MALE - ContractSkyfly’s eHarrier eVTOL Selected for UK Ministry of Defence Heavy-Lift UAS Supplier FrameworkURL: https://www.uasvision.com/2024/11/17/skyflys-eharrier-evtol-selected-for-uk-ministry-of-defence-heavy-lift-uas-supplier-framework/**

UK eVTOL manufacturer Skyfly has been selected to join the UK Ministry of Defence’s UASHLC (Uncrewed Air Systems Heavy Lift Capability) Framework with the eHarrier unmanned electric vertical Take-Off and Landing (eVTOL) aircraft.

The eHarrier is a military version of Skyfly’s Axe eVTOL, a two-seat general aviation aircraft aimed at private owners, which recently commenced manned test flights.

The eHarrier boasts the same basic design as the Axe, combining the vertical take-off and landing capabilities of a helicopter with the efficiency and simplicity of a fixed-wing aircraft – but at a lower cost and with a lower noise footprint than either.

Like the Axe, the eHarrier can be used in a fully-electric or hybrid-electric configuration. However, unlike the Axe, it can be piloted remotely or autonomously, and is able to be fitted out for crewed or uncrewed missions. These missions could include the insertion of troops, medical evacuation and the transportation of cargo and supplies, among various other potential mission sets.

“Upon the release and launch of the Axe as a 2 seat personal vehicle, we have received significant interest from both public and private sectors for an unmanned variant due to the heavy lift capability and improved range when compared to existing UAV systems on the market. We look forward to demonstrating the eHarriers capabilities to the MOD,”

said Michael Thompson, CEO, Skyfly.

The UASHLC Framework is a £95 million programme run by the UK Ministry of Defence’s Future Capabilities Innovation office. It is tasked with expediting the development of unmanned heavy-lift aircraft and bringing them to market as fast as possible to meet the requirements of the UK military.

The project is particularly aimed at developing new technologies for the maritime environment, where the eHarrer could be used to transport equipment and supplies between vessels, or from ship to shore, operating at a fraction of the cost of a conventional helicopter.

Skyfly will be eligible to bid for upcoming UASHLC contracts and associated funding by optimising the eHarrier to meet specific tasking requirements and mission sets.

**248 . Date: 21-11-2024RequirementUkraine to Produce 30,000 Long-Range Drones in 2025URL: https://www.uasvision.com/2024/11/21/ukraine-to-produce-30000-long-range-drones-in-2025-volodymyr-zelenskyy/**

Ukrainian President Volodymyr Zelenskyy presented the country’s resilience plan to the Ukrainian Parliament and emphasized goals for advancing Ukraine’s defense capabilities, Ukrainian media UNIAN reported on November 19.

Among other things, Zelenskyy pointed out the importance of focusing on drone and missile production in 2025.

“Next year, Ukraine will produce at least 30,000 long-range drones,”

Zelenskyy announced, highlighting the critical role of UAVs in the country’s defense strategy.

He also set a target for manufacturing 3,000 long-range missiles and introduced plans to establish a Technological Headquarters to coordinate and streamline these efforts.

“As for our missile program. Many people, especially Russians, remember our Ukrainian Neptune missiles. But we have also made ‘long’ Neptunes. And the name itself speaks of the task. And we already have first hits,”

added the President.

“The first meeting of the Technological Headquarters will be held in early December. In this format, we will gather the best specialists and the most useful technological ideas regularly. It is Ukraine’s strong defense industry that can ensure our independence in choosing our military strategy,”

President Zelenskyy concluded.

Meeting this goal would require Ukraine to produce approximately 80 long-range drones and 8 ballistic missiles daily, amounting to approximately 2,400 drones and 240 missiles each month.

According to Forbes, Russia currently manufactures between 132 and 171 missiles per month, significantly fewer than Ukraine’s proposed output.

**249 . Date: 25-11-2024Hybrid Rotary / Fixed Wing - Armed ISR / ISTAR - Small - General - ArmamentUkrainian Uncrewed Aerial Mothership Launches Kamikaze DronesURL: https://www.uasvision.com/2024/11/26/ukrainian-uncrewed-aerial-mothership-launches-kamikaze-drones/**

Ukraine’s domestically developed Dovbush T10 drone has taken on a new role acting as a mothership for first-person view (FPV) kamikaze quadcopters. In this configuration, the T10 also serves as a key signal relay node between the highly maneuverable one-way-attackers and their operators.

Serhii Beskrestnov recently posted video, seen below, of an apparent test of a mothership T10 carrying two FPV kamikaze drones, one under each wing, on his Telegram channel.

Beskrestnov (sometimes referred to by the pseudonyms Serhii Flash or Flesh; his first name can also be found written as Serhiy) is a Ukrainian servicemember who has been cited as an expert in “radio technologies” and other military electronics. He regularly posts about new uncrewed aerial systems, electronic warfare, and other battlefield developments.

Ukrainian “Dovbush” UAV carrying and releasing two FPV drones during tests.

According to Beskrestnov, the T10 mothership can carry up to six FPVs at a time. The footage he shared online shows picture-in-picture views as the kamikaze drones are released while their launch platform continues on separately. A single pickup truck looks to be the test target for both kamikaze drones.

Screen captures showing the view from the two T10-launched FPVs as they approach the target truck. captures via X

Interestingly, the clips also show that the drones are held in place upside down under the T10’s wings via their small bomb-shaped payloads and that they flip over when they are released.

I find the way the FPV is attached to the wing amusing. The bomb acts as an adapter between the mothership and the FPV-Kamikaze. And the FPV itself hangs upside down

In his Telegram post, Beskrestnov did not provide more details about the T10 mothership’s capabilities, including its range and endurance and how far the FPVs can reach after launch.

The T10 first emerged in late 2022 configured as a surveillance and reconnaissance platform with an unspecified sensor package and a reported range of just under 22 miles (35 kilometers). The drone can also be employed as a one-way-attacker with a nearly 26-and-a-half-pound (12-kilogram) warhead. In its baseline configuration, the design reportedly costs around $12,000.

The T10’s primary mode of launch appears to be via a rack installed on the top of a pickup truck, which gets it up to a suitable speed to fly off on its own. How it might be recovered after a mission is unclear. The design reportedly features a navigation package that can fall back in some way on inertial navigation system (INS) guidance if its GPS signal is jammed, something that is a major threat on the battlefield in Ukraine.

At its most basic level, the T10 mothership offers a way to maximize the reach of typically short-range FPV drones by releasing them at the edge of its own combat radius. The FPVs also gain extra loiter time, which they could spend on identifying and/or maneuvering to their targets, or even waving off an initial attack run and coming back from a different, unexpected vector.

Putting the signal relay on the mothership orbiting above also puts that node closer to where the FPVs are actually operating, making it easier to maintain connectivity. The graphic below offers a good visual depiction of the overall benefits of this combination.

FPV drone mothership/relay concept of operations. Tyler Rogoway/The War Zone

The T10 mothership is not the first such combination to emerge on the battlefield in Ukraine, with the Russians also employing larger drones as aerial launch platforms and signal relay nodes for FPVs.

Russian forces started using Pchelka drone carrier in Ukraine. The UAV is capable of carrying and dropping FPV drones from the air. Moreover, it also serves as a signal repeater, increasing the range of use of drones.

The Drone-type “ mother” was used, which serves as a repeater for the control and video signal for up to 40 km distance and also a carries multiple FPV drones.

While Ukraine’s T10-based drone mothership may not be the first such design to emerge in the conflict there, it is more evidence of the value this kind of combination offers already.

**250 . Date: 27-11-2024GeneralUkraine Delivers Over 1 Million Drones in a Year Exceeding TargetURL: https://www.uasvision.com/2024/11/27/ukraine-delivers-over-1-million-drones-in-a-year-exceeding-target/**

Ukraine surpassed the President’s directive to deliver one million drones to the frontlines in a year, reported Deputy Prime Minister for Innovations Mykhailo Fedorov on November 26.

“The state’s main task is to provide the Armed Forces with everything they need. If they need drones, we provide drones. If they need new technologies, we launch Brave1 and built the Tech Command,” Fedorov said.

Fedorov highlighted that Ukrainians have repeatedly demonstrated their ability to work cohesively and achieve ambitious objectives.

Collaborative efforts between the Ministry of Digital Transformation, the Ministry of Defense, the State Special Communications Service, the President’s Office, the Ministry of Strategic Industries, and the General Staff are all aligned toward the singular objective of safeguarding the nation.

State institutions aim to expand drone deployment into other areas of technological warfare.

“Unity has been Ukraine’s greatest asset since February 24, 2022, and it will remain so. Our mission is to work together for victory, each in our own role,” Fedorov concluded.

Earlier, The Ukrainian company Buntar Aerospace unveiled the Buntar-1, a vertical takeoff and landing (VTOL) reconnaissance drone designed for the Ukrainian Armed Forces.

**251 . Date: 29-11-2024MarketFinland’s Summa Defence to Establish a Drone Production Facility in Finland with Ukrainian PartnersURL: https://www.uasvision.com/2024/11/29/finlands-summa-defence-to-establish-a-drone-production-facility-in-finland-with-ukrainian-partners/**

The Finnish defense and security technology group Summa Defence Ltd is establishing a drone production facility in Finland in collaboration with its Ukrainian partners.

The purpose of the facility is to rapidly increase production capacity for drones used in combat in Ukraine, while also introducing industrial-scale drone production in Finland and Europe. Widescale drone production is planned to begin in the first half of 2025.

“The demand for drone technology and production capability is high. Drones will be delivered not only to Ukraine but also across the European Union and NATO countries. Drones will become a permanent part of society, playing a vital role in securing critical societal functions across civilian, defense, and security sectors,”

says Jussi Holopainen, CEO of Summa Defence Ltd.

The first drone production facility is a strategic investment, for which Summa Defence Oy will establish a subsidiary, Summa Drones Ltd. Summa Drones will then form a joint venture in Finland with its Ukrainian partners, with Summa Drones holding the majority ownership. The Ukrainian drone companies participating in the joint venture are Kort, Elf Systems, Skyassist and MPS Development. In addition to manufacturing aerial drones, Summa Drones will also produce ground and marine drones.

“The drones which will become part of Summa Defence Group’s product portfolio through the joint venture have already demonstrated their importance and strategic capabilities in Ukraine. Drones play a key role in protecting critical infrastructure and in emergency and rescue missions. Establishing production in Finland enhances security of supply both in Ukraine and internationally,”

Holopainen continues.

Summa Defence aims to bring together defense and security sector actors to build a strong growth-oriented company, focusing on dual-use technologies related to situational awareness, mobility, and protection, benefiting civilian, security, and defense sectors. These companies must have a passion and capability for international growth, particularly in NATO member countries. Owners’ commitment to continue developing and growing the company is also crucial. Acquired companies will continue to operate under their own identities while benefiting from group synergies and participating in larger international projects.

Summa Defence is currently finalizing acquisition negotiations with several companies in the security and defense technology sector.

**252 . Date: 02-12-2024Fixed Wing - Armed ISR / ISTAR - HALE - ContractKratos Gets $35M US Navy XQ-58A Support ContractURL: https://www.uasvision.com/2024/12/02/kratos-gets-35m-us-navy-xq-58a-support-contract/**

– Kratos Unmanned Aerial Systems Inc., Roseville, California, is awarded a $34,856,449 modification (P00013) to a previously awarded cost-plus-fixed-fee contract (N0042123C0010).

This modification increases the contract ceiling to provide continued non-recurring engineering in support for the XQ-58A Unmanned Aerial Systems mission systems and subsystems integration for the Marine Corps. Additionally, this modification provides for flight tests, spares and materials.

Work will be performed in Sacramento, California (25%); Oklahoma City, Oklahoma (50%); China Lake, California (20%); and Patuxent River, Maryland (5%) and is expected to be completed in September 2026.

Fiscal 2024 research, development, test and evaluation (Navy) funds in the amount of $22,972,359 will be obligated at the time of award, all of which will expire at the end of the current fiscal year.

The contract being modified was not competed. Naval Air Warfare Aircraft Division, Patuxent River, Maryland, is the contracting activity.

**253 . Date: 06-12-2024Hybrid Rotary / Fixed Wing - Cargo - MALE - General - PlatformFirst Flight of Piasecki ARES Tilt-Duct VTOLURL: https://www.uasvision.com/2024/12/06/first-flight-of-piasecki-ares-tilt-duct-vtol/**

When the ARES-DV Flight Module lifted off from Piasecki’s West Helipad in Essington, Pennsylvania, it achieved a sustained hover for a duration of approximately one minute before descending. Upon landing, the team attached the U.S. Army’s Mobile Multiple Mission Module (M4) to the ARES-DV Flight Module, and conducted a second successful one-minute hover, demonstrating the ability of its triplex fly-by-wire flight control system to sustain a stable hover in multiple configurations and a dynamic ground environment.

ARES is a modular multi-mission tilt-duct VTOL vehicle that can be operated as an unmanned aerial system (UAS) or with an optional manned flight module. ARES is designed with a small landing footprint to enable shipboard and expeditionary operations as well as provide embedded multi-mission C4I, ISR, combat, and logistics support to small, distributed combat forces operating over extended distances and in complex terrain. Rapidly reconfigurable Mission Payload Modules are supported by a common Flight Module to deliver multi-mission flexibility with significantly reduced overall logistics footprint and cost.

ARES features Honeywell Aerospace’s Compact Fly-By-Wire system, an integrated flight control system that is both lightweight and robust. Designed to fit into the limited space available on smaller aircraft, this state-of-the-art system provides safety-critical flight control capabilities typically found in much larger airliners and advanced fighter aircraft. It enables precise handling and stability across a wide range of flight conditions, thereby enhancing safety and performance — and is especially advantageous for VTOLs, where space is at a premium and weight efficiency is paramount.

The hover test flight was funded by an Army SBIR Sequential Phase II contract and by an Air Force TACFI Sequential SBIR II award. In November 2023, Piasecki announced that it was awarded a $37 million multi-year contract by AFWERX, the Air Force’s innovation arm, in conjunction with the Air Force Research Laboratory (AFRL) and Army Medical Research and Development Command (MRDC), as part of its Strategic Funding Increase (STRATFI) program to accelerate ARES development and flight testing, among other advanced VTOL enabling technologies.

**254 . Date: 09-12-2024Hybrid Rotary / Fixed Wing - N/A - MALE - General - PlatformChina’s Lanying R6000URL: https://www.uasvision.com/2024/12/09/chinas-lanying-r6000/**

– China’s Lanying R6000 drone is purportedly intended for non military uses, but concept drawings that displayed Chinese military logos on the wings and body of the aircraft sparked worries that it may be used for military transportation, surveillance, reconnaissance or attacks.

Tiltrotor aircraft such as the Lanying R6000 combine the flying speed of airplanes with the takeoff and landing maneuverability of helicopters, providing them with the advantages of both systems.

The new drone has a cruising speed of 550 kilometers per hour, a range of up to 4,000 kilometers, a maximum take-off weight of 6,100 kilograms and a maximum payload of 2,000 kilograms according to the website of United Aircraft, a Shenzhen-based company.

The business was born in 2014 after the Chinese government began efforts to integrate civil companies into defense technology development. In 2023, United Aircraft received funding from state-backed investment firms totaling nearly $276 million.

The company website describes the R6000 drone as a “car in the sky,” that can seat up to 12 people with additional applications that include “urban air traffic, logistics transportation, emergency rescue” and others. But some observers say printed designs of the drone with military markings suggest that the company is looking toward military applications of the Lanying system.

The drone could serve to increase the efficiency of military logistics and transportation in the event of conflict in the Taiwan Strait, with its long range and rapid deployment capabilities, military analysts tell VOA.

The drone does not need a runway “making it particularly suitable for special terrains such as mountainous areas and islands,” stated the United Aircraft website’s product description.

Hong Kong-based Asia Times reported in October,

“China’s UR6000 may perform rapid resupply missions to support airfield seizure operations during a potential invasion of Taiwan.”

Yao Cheng, a former lieutenant colonel staff officer of the Chinese Navy Command who is now based in Los Angeles, told VOA that the Lanying R6000’s advantages lie in its fast speed, unmanned operation and strong emergency response capabilities.

These advantages, he confirmed, would be useful if a conflict were to break out over Taiwan.

“If there is fighting in the Taiwan Strait, because its speed is 550 [kilometers per hour], it can deliver the materials to the battlefield in about half an hour,” Yao said.

Taiwan is located 180 kilometers from China. With a range of 4,000 kilometers, the Lanying R6000 could make more than 10 round trips from China to Taiwan before refueling.

Yao said the drone’s wide range covers the Western Pacific, giving it the ability to reach locations throughout the South China Sea and U.S. military bases in Japan and South Korea.

Given the trend of warfare toward unmanned and intelligent warfare, Yao expects the Lanying R6000 to become an important force in military transportation.

However, Su Tzu-yun director of the Institute of National Defense Strategy and Resources at the Taipei-based National Defense Security Research Institute, told VOA that the Lanying R6000 has more value in commercial transportation than in the military.

The drone has low stealth capabilities given that helicopters and other similar aircraft that make use of tiltrotors tend to be noisy and produce radar signatures, Su said, making the drone an easy target for air defense missiles.

The size of the Chinese army’s helicopter force, coupled with the limitations of Lanying system’s stealth capabilities, makes it unrealistic for the drone to be considered as an ideal option in high-risk military operations, Su said.

He added that China possesses close to 1,000 helicopters, including the Z-20, China’s version of the American Black Hawk helicopter. This number still trails behind that of the U.S., which has around 5,500 helicopter units.

Su said the drone could still play a limited role in the Chinese Navy. With its compact size and high speed, it is suitable for carrier-based tasks, such as rapid anti-submarine patrols or replenishment missions.

The Luying R6000 model could also develop into technology that is more appropriate and valuable for military use in the future, Su added.

**255 . Date: 13-12-2024Contract - Engine / PowersourcePowerLight Technologies Selected by CENTCOM to Deliver Prototype Wireless Power BeamingURL: https://www.uasvision.com/2024/12/13/powerlight-technologies-selected-by-centcom-to-deliver-prototype-wireless-power-beaming/**

– PowerLight Technologies, an experienced provider of safe wireless power transfer, producing long-distance, high-power solutions that deliver mission critical power to hard-to-reach areas, announced that it is working with United States Central Command (CENTCOM) and the DOD’s Operational Energy Innovation Directorate, to demonstrate delivery of wireless power beaming to a Group-2 Unmanned Aerial System (UAS) aloft at 5,000 feet altitude, allowing it to rapidly recharge in flight and to conduct its mission without landing.

The demonstration program, called Power TRansmitted Over Laser to UAS (PTROL-UAS), is part of the DOD’s initiative to maximize effectiveness of autonomous systems by extending their range, operational endurance, and payload capacities to conduct critical surveillance and communications missions.

PowerLight is conducting an alpha integration of this capability in partnership with Kraus Hamdani Aerospace, who currently provides ultra long endurance UASs (KL1000ULE) to both the U.S. Navy and U.S. Army. This disruptive integrated capability will be showcased in an integrated wireless power beaming flight demonstration, planned for Fall of 2025.

“US Central Command (CENTCOM) desires to employ energy on the battlefield in new and disruptive ways. Wireless power beaming to aerial autonomous systems (UAS) is one such way, and the current Power Transferred Over Laser PTROL – UAS program is developing this new capability for field test and evaluation. CENTCOM is supporting and leading the PTROL – UAS wireless power beaming to Group 2 UAS program and, following successful field test and evaluation, is supportive of the transition of this capability to meet current and future operational requirements. Operation forces are aware of our work in power beaming and desire to move this capability into the battlefield immediately,”

said Eric Follstad, Science Advisor and Requirements & Technology Chief, USCENTCOM.

Diagram showing UAS Concept Of Operation for ISR and Communications using Power Beaming to extend operating capability

Funding for the program comes from multiple service entities, as well as in-kind contributions from private investors. PowerLight is announcing an award this week from the DOD’s Operational Energy Prototyping Fund (OEPF) for up to $5M and $2M received from the Operational Energy Capability Improvement Fund (OECIF) this summer that launched the program.

PowerLight will work with CENTCOM, DOD, and leading aerospace companies to develop and resource a comprehensive, multi-year program for rapid prototyping, maturing and productizing power beaming systems for multidomain autonomous systems and making them available to the services.

“Dynamically delivering wireless power to UAS aloft significantly increases their range, extends operational endurance, and reduces risks to mission and personnel, particularly in contested logistics environments,” said Richard Gustafson, President and CEO of PowerLight. “The DOD envisions wireless power beaming as a competitive advantage, a catalyst to initiate the process of breaking the chain of fossil fuel dependency and enabling autonomy at scale. Specifically, power beaming enables autonomous systems, including those operating in the stratosphere, that are maximized to deliver extremely high value communication coverage for defense and telecom companies, along with higher-resolution sensing, imaging, and reconnaissance capabilities. This program transitions power beaming towards a commercially-available capability, and the continuing technical, operational and financial support of OECIF, OEPF, and CENTCOM, means it will soon be in the hands of those that need it most,” continued Gustafson.

PowerLight is a world leader in power beaming and power beaming safety with a strong IP portfolio in this area. PowerLight has developed advanced safety systems for both wireless power beaming and power over fiber (PoF) that have been approved by multiple governing agencies, enabling large-scale commercialization of the technology.

**256 . Date: 16-12-2024RequirementKazakhstan Seeks International Collaboration to Boost Military Aviation and Drone IndustryURL: https://www.uasvision.com/2024/12/16/kazakhstan-seeks-international-collaboration-to-boost-military-aviation-and-drone-industry/**

Kazakhstan’s Deputy Defense Minister Shaykh-Khasan Zhazykbayev has called on foreign military agencies to cooperate with his country in developing its military aviation, including the drone industry.

He made the remarks at a briefing held for foreign military diplomats at the Kazakh Defense Ministry’s National Military and Patriotic Centre on December 9, according to the Kazakh government’s website, Gov.kz.

The deputy minister said that in 2025, Kazakhstan’s

“efforts will be focused on developing the potential of its military transport and unmanned aircraft industry, and training Special Operations Forces, and electronic warfare, air defense and cyber security units.”

“We look forward to constructive and mutually beneficial cooperation with your countries’ defense agencies in implementing these cooperation areas,” Zhazykbayev added.

He stressed that military and technical cooperation in equipping the Kazakh army with modern weapons and military hardware would continue.

On November 25, Kazakh President Kassym-Jomart Tokayev ordered Defense Minister Ruslan Zhaksylykov to step up the security and safety of all military and civilian facilities across Kazakhstan, intensify cooperation with domestic defense enterprises, develop territorial defense, Special Operations Forces, and strengthen social and legal work.

In early October, Tokayev also ordered a newly-appointed deputy defense minister, Dauren Kosanov, to modernize his country’s air defense forces.

Kazakhstan is actively developing the production of unmanned aerial vehicles (UAVs) with the involvement of foreign partners. One of the significant projects is the joint production of Anka drones with Turkey.

Kazakhstan’s Defense Ministry announced on November 11 that it would send a delegation of military specialists to Turkey to study drone production at the Baykar factory and participate in demonstration flights of Bayraktar TB3, Bayraktar Kalkan unmanned aircraft, and loitering Mosquito-U munition there.

The statement was issued following the Kazakh Defense Ministry’s participation in the fourth SAHA EXPO International Defence, Aerospace and Space Industry Fair held at the Istanbul Expo Center between October 22–26, 2024.

Baykar is a private Turkish company that produces drones, communications systems, and artificial intelligence devices. After the Kazakh Defense Ministry’s talks, the Baykar company said that localizing drone production in Kazakhstan and providing training and technical support would be possible.

In late October, the Kazakh defense minister and the head of the Turkish company Baykar Defense, Haluk Bayraktar, reached an agreement to launch the production of drones in the Central Asian country. The minister also held talks with Turkish Minister of National Defence Yasar Guler and the head of the Defense Industry Agency, Haluk Gorgun, as well as with UAE Minister of State for Defense Mohamed Mubarak Fadhel Al Mazrouei.

The chairman of the Board of the National Company Kazakhstan Engineering joint-stock company, Temirzhan Abdrakhmanov, said in May that “one of the best” Turkish unmanned aerial vehicles will be produced in his country.

A line for the assembly and maintenance of ANKA unmanned combat aerial vehicles will be organized in Kazakhstan on the basis of the subsidiary company Kazakhstan Engineering. This would be the first such production outside Türkiye.

In May, Kazakhstan Engineering JSC and Turkish Aerospace (TUSAS) signed a memorandum on military-technical cooperation.

“Within the framework of the agreement, long-term cooperation is planned in the field of joint production of UAVs, as well as the transfer of technologies and training of personnel for the maintenance and repair of UAVs for the Armed Forces of the Republic of Kazakhstan,”

according to the Kazakh defense ministry.

In addition to Turkey, Kazakhstan cooperates with China and South Korea on drones. In August 2023, Kazakhstan’s Petropavlovsk Heavy Engineering Plant launched local production of six different drones that can be used for military and civic purposes, using components from China.

In November 2023, the Kazakh defense minister revealed plans to co-produce combat drones together with South Korea in Kazakhstan. In April 2024, Astana hosted the “2024 Kazakhstan-Korea Drone Roadshow,” which included a seminar on the development of UAVs and the creation of the Kazakhstan-Korea Drone Competence Development Academy.

Overall, the country’s fleet of drones currently consists of Russian Orlan-10, Turkish Anka, Israeli Skylar I-LEX, Chinese Wing Loong 1, and US RQ-11 Raven drones. In the annual rating of countries based on their level of military power, Global Firepower-2024, Kazakhstan was placed 58th out of 145. Kazakhstan’s armed forces are recognized as being the strongest in Central Asia.

**257 . Date: 18-12-2024Fixed Wing - Armed ISR / ISTAR - MALE - ContractGeneral Atomics Gets $48M French Air Force MQ-9 Maintenance ContractURL: https://www.uasvision.com/2024/12/18/general-atomics-gets-48m-french-air-force-mq-9-maintenance-contract/**

General Atomics Aeronautical Systems Inc.,

Poway, California, has been awarded a face value $48,482,812 cost-plus-fixed-fee contract modification (P00021) to a previously awarded contract (FA8689-22-C-2017) to exercise an option for continued sustainment of the French Air Force MQ-9 unmanned aerial system program fleet.

Work will be performed in Poway, California; and France, and is expected to be completed by Dec. 31, 2025. This contract involves Foreign Military Sales (FMS) to France. FMS funds in the amount of $48,482,812 are being obligated at the time of award.

The Air Force Life Cycle Management Center, Wright-Patterson Air Force Base, Ohio, is the contracting activity.

**258 . Date: 18-12-2024Fixed Wing - Armed ISR / ISTAR - HALE - General - PlatformKratos Conducts First Flight Of Thanatos UCAVURL: https://www.uasvision.com/2024/12/18/kratos-conducts-first-flight-of-thanatos-ucav/**

Kratos Defense and Security recently completed the first flight of its Thanatos stealthy uncrewed combat air vehicle, proving out the aircraft’s basic design as the company now focuses on flying a fully integrated system.

Steve Fendley, president of Kratos’ Unmanned Systems Division, tells Aviation Week the company hopes to learn more about the system as it evolves over the next 6-12 months. The company would not say when the first flight occurred, just that it was within the past several months.

Kratos unveiled the Thanatos design in November 2023 when company CEO Eric Demarco said in an earnings report that the company hoped to have a contract within a year. The design shows what appears to be a single-engine UCAV with two inlets and a single exhaust. The aircraft does not have a vertical tail and horizontal stabilizers, showing the company’s stealth approach.

Fendley said during a Dec. 7 interview at the Reagan National Defense Forum here:

“The air vehicle for Thanatos is now effectively proven. We’re not trying to figure out does the airplane fly, we’re now trying to figure out does the integrated system tick the mission box.”

Kratos says it has strong interest in the upcoming increment of the Air Force’s Collaborative Combat Aircraft (CCA) program. The first increment awards went to Anduril and General Atomics. Fendley says members of the CCA class of aircraft show the ability to augment what is being done with fifth-generation fighters and with offboarding systems from fourth-generation fighters to make them more survivable. For example, that would include a “high initial focus” on electronic warfare to provide greater standoff for fourth-generation fighters like Boeing F-15s and Lockheed Martin F-16s.

The company points to its ongoing work with both the U.S. Marine Corps (USMC) and Air Force with its XQ-58 Valkyrie.

Fendley says the Valkyrie program is focused on

“integrating different operational mission sets” in testing, including flights during a recent Emerald Flag exercise in October. During that mission, the XQ-58A passed targeting data to USMC Lockheed Martin F-35Bs to “close the kill chain” for the first time, he says.

The Marines have expressed interest in ultimately fielding a system like the XQ-58, he says.

One aspect that Kratos argues is operationally relevant is that the Valkyrie is runway independent, having been launched both on rockets and last year using a trolley.

“The DOD has come back and said runway independence is king,” he says. “It’s gone back and forth, back and forth, but now it’s pretty much in ink.”

That said, Kratos also is working on a conventional takeoff and landing system with retractable year, he says.

The company is designing its UCAV offerings with manufacturing feasibility in mind. For example, the company was asked what it would take to conduct a 1,000-unit production run for its Valkyrie. That study has shown propulsion likely would be a choke point, as Kratos would look to use both in-house designed engines and those from partners. The finding was the production run would take “not very long, [but] the engines were the constraint,” he says.

The company builds its own engines for targeting drones and other small uses, and in July announced a collaboration with GE Aerospace to develop scalable uses on systems including CCAs.

“We build to manufacture right from the start, and that’s a pretty good advantage for us, both in our own systems and to be able to work with others who might want to develop their own system,” Fendley says.

Kratos said that it hopes to have a contract for Thanatos by next year, and said that the project was one of a number of “new programme opportunities” that would require additional investment in 2024, but that could then contribute to significant growth for the company in 2025.

This funding profile may fit with the USAF’s plan to mount a competition to pick one or more CCA designs in the 2024 Fiscal Year (which runs from October 1) with work due to start on the initial batch of those aircraft beginning could begin in Fiscal Year 2025.

It may be entirely coincidental that the CGI concept art released by Kratos includes a US Air Force logo on the rear fuselage, leading some to conclude that the aircraft could be tied to the USAF’s Collaborative Combat Aircraft programme.

**259 . Date: 20-12-2024Fixed Wing - Armed ISR / ISTAR - Small - GeneralUkraine’s Long-Range Taipan 100 Bomber Drone Aims to Disrupt Russian Supply LinesURL: https://www.uasvision.com/2024/12/20/ukraines-long-range-taipan-100-bomber-drone-aims-to-disrupt-russian-supply-lines/**

The KOLO Charitable Foundation announced\* the delivery of two Taipan-100 bomber drones to Ukrainian special forces, specifically the Tymur Special Unit. This contribution, valued at $146,000, was funded through the Hurkit crowdfunding project.

The equipment provided includes advanced systems designed to enhance the offensive and reconnaissance capabilities of Ukrainian operators.

The Taipan-100 is a state-of-the-art bomber drone produced by a Ukrainian manufacturer specializing in unmanned aerial systems. Designed for long-range operations, it is ideal for missions deep behind enemy lines. This drone boasts an impressive operational range of 120 kilometers and is distinguished by its resistance to electronic interference, thanks to advanced dynamic transmission technology that constantly changes control frequencies.

Nearly impossible to jam, the Taipan-100 can carry precise explosive payloads for targeted strikes against critical infrastructure, vehicles, and other strategic targets. Equipped with modern sensors and high-definition cameras, it ensures real-time target acquisition and monitoring. Its modular design allows it to be easily adapted for different missions, enhancing its versatility and battlefield effectiveness.

The Taipan-100 provides Ukraine’s armed forces with a strategic advantage by combining long-range capabilities (up to 120 km) with resistance to electronic countermeasures. Its ability to deliver precise strikes against high-value targets deep behind enemy lines disrupts logistics, command structures, and critical infrastructure.

Additionally, its modular design enables adaptation to various mission types, increasing operational flexibility. Equipped with advanced sensors and real-time imaging, the Taipan-100 ensures effective target acquisition and damage assessment, making it a valuable asset in Ukraine’s arsenal.

\*November 29, 2024,