Analysis: Aeronautics' UAS road map to build on lessons learned in global conflicts

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Author: **Gareth Jennings**, London

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Key points

- Aeronautics is mapping out an upgrade path for its portfolio of UASs, based on current global operational experience
- This experience has underlined the need for dedicated military systems, rather than COTS systems that are less resilient

UPDATED

Israeli company Aeronautics is mapping out an upgrade path for its portfolio of unmanned aircraft systems (UASs) that incorporates the experiences of customers operating them in global conflict zones.

Aeronautics' portfolio of unmanned aircraft systems, which it looks to improve on the basis of global operational experience. (Aeronautics)

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Speaking to *Janes* in late December 2024, CEO of Aeronautics Group Dan Slasky said that lessons being learned from war zones in the Middle East and Ukraine in particular have proven the need for military-designed UASs over commercial off-the-shelf (COTS) alternatives, and that these lessons are now being fed into a company 'road map' that aims to field new and enhanced products in the coming years.

"Every couple of years we take strategic analysis of the market, and we have a road map that we are implementing [based on that]. We are spending a lot on research and development, and we are doing a lot of activities," Slasky said. "We have a road map release of a new product about every

year-and-a-half, and we are on schedule for that."

UAS portfolio

Aeronautics' UAS portfolio comprises the tactical Group 1–2 Octoper multicopter, the Group 2–3 Orbiter series, the Group 3 Aerostar, and the medium-altitude long-endurance (MALE) Group 4 Dominator.

The Aeronautics Orbiter 4 VTOL is part of the Israeli company's wider Orbiter range of unmanned aircraft, with this model providing a vertical take-off and landing capability that is being rolled out to others in the range. (Aeronautics)

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The Orbiter-series comprises the Orbiter 1K (with a maximum take-off weight [MTOW] of 13 kg and an endurance of over two hours), Orbiter 2 (MTOW of 13 kg and endurance of up to three hours), Orbiter 3 (MTOW of 32 kg and endurance of up to six hours), Orbiter 4 (MTOW of 55 kg and endurance of up to 24 hours), and Orbiter 5 (MTOW of 75 kg and endurance of up to 24 hours). Of these, the Group 3 of UASs, which includes the Orbiter 5 that was debuted at the Paris Air Show in 2023, is where much of the operational experience is now being garnered.

"If we look at the conflicts that are going on all over the world, we see the place of this class of UAS, whether it's in Ukraine or other parts of the world. The susceptibility of larger UAVs [unmanned aerial vehicles] of the MALE type to anti-aircraft systems and to just being detected is a real issue. This Group 3 class of UAS is performing very strongly," Slasky said. "The Orbiter 5 is currently deployed in active operations, successfully performing roles that also were traditionally handled by larger MALE systems and across multiple dimensions. That was our vision, and it's very interesting to see it coming into fruition."

As Slasky noted, the Orbiter 5 essentially has the operational advantages normally associated with a tactical UAS – no runway, small logistic train, low cost, etc – combined with much of the capabilities of a larger MALE UAS. "We are seeing more need for this balance of [low cost and enhanced flexibility] with the survivability needed for operating in complex environments," he said.

Operational experience

One standout feature of this ‘complex environment' that has been a feature of the war in Ukraine in particular has been jamming, which entails the use of military-designed UASs over COTS alternatives. As Slasky explained, “A lot of the drones being used around the world today include a lot that were not designed to be used in a military environment – many systems were either designed for commercial use or were adapted to military use. One of the big takeaways has been the enormous number of drones being shot down or malfunctioning every month over Ukraine, the vast majority of which were not designed for military operations on the modern battlefield. This is one thing that we have been doing from scratch – [designing for military] communication, resilience, and the ability to operate in a jamming scenario. It is critical!”

Aeronautics' Orbiter 5 UAS is being used on military operations throughout the world, though Slasky declined to identify the company's customers. (Aeronautics)

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While the road map has yet to be revealed, Slasky was able to divulge some of the enhancements to the wider Aeronautics UAS portfolio that are in the works and under consideration. The Orbiter 1K has been upgraded to yield the new Orbiter 2 LM (loitering munition), while the Orbiter 3 “is being improved on multiple levels, and we are now going to be introducing an Orbiter 3 VTOL [vertical take-off and landing]”, he said. “Our family of VTOL solutions enables a strong portfolio for this growing need – including the Orbiter 4 VTOL, Orbiter 3 VTOL, and Octoper.

“We have also upgraded our Aerostar UAS significantly, which is a tactical UAS able to carry payloads exceeding 40 kg. Customers that operate it for years understand the significant value for flight hour that it enables – it is one of the most reliable UASs out there with very low cost of operation. So what we have done is a significant upgrade called the Aerostar New Generation (NG), including upgrades of new sensors, software, engine, and more, all using the same battle proven and reliable infrastructure,” Slasky said.

For more information on Aeronautics, please see Israeli MoD looks to increase local defence production .

Comment

While retaining its focus on the overland domain, Aeronautics is increasingly seeing an opportunity

in the maritime domain. “We are focusing very much on the naval domain, and that's something which is deep in our strategy. We already have orders from naval customers for various systems,” Slasky noted. He added that another strong vector for the company is UAV LMs.