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Swarm Drones in India: A Growing Capability

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Swarm drones are strategic weapons that have proven successful in conflicts such as the Russian-Ukraine conflict. They are a focus area as well as the foundation of the Indian Air Force (IAF) future Air Power strategy. In view of valuable lessons from these conflicts, the fourth largest air force in the world is making it its top priority to include these capabilities in its arsenal and, thereby, become a significant force of drone warfare in the global landscape.

On August 14, 2023, the IAF and Veda Aeronautical Pvt Ltd, a startup company in New Delhi, signed a historic agreement worth Rs 300 crore to produce 200 long-range swarm drones for the IAF.[1] This could be possible due to the IAF's Mehar Baba Swarm Drone competition. Through this order, the IAF has shown its unwavering commitment to supporting the local drone startup ecosystem as part of its commitment to enhance the level of the local drone startup ecosystem. These drones, also known as Kamikaze drones, are supposed to be released in small batches, but once they are airborne, they will join up together to attack or protect the targets. It is anticipated that the weapon system will be available for deployment by the end of this year.[2]

Enhancements and Acquisitions

In view of the lack of indigenous resources, importing weapons and ammunition from other countries was the only option left for the nation. The import of surveillance systems, arms, and ammunition requires a substantial amount of foreign exchange. The ongoing Russia-Ukraine conflict has considerably disrupted the supply chain and, therefore India's dependence on foreign suppliers for defence requirements. To bridge the voids in its operational preparedness, India is giving impetus to the indigenisation ecosystem for its supply of resources and the production of defence goods within the country.[3] This initiative underscores India's attempt to increase the country's productivity of defence goods.

The Indian government has been making significant endeavours to indigenise and acquire swarm drone technology in order to improve military capabilities. Swarm drones are an advanced form of unmanned aerial vehicle (UAV) that can be commanded by a single operator or autonomously. They are designed to saturate enemy defences by sheer numbers of drones and can be controlled by either method. Here are some advancements and acquisitions that have occurred in India about swarm drones:

(a) The First Batch of the Indian Army's Swarm Drones: The Indian Army has obtained its first swarm drones from a local startup firm based in Bangalore, Newspace Research &

Technologies Pvt Ltd. In September 2021, the Army has placed orders to the Company worth 15 million US dollars.[4]

(b) Swarm Drone Systems for Surveillance and Attack Operations: The Indian Army has ordered these technologically advanced drone systems from Newspace because of their multipurpose usage. These swarm drones are primarily used for surveillance and attack. However, this new kind of drone can conduct both kinds of tasks; the primary difference is the technology equipment gadgets through which these drones can identify the target.

(c) Loitering Munitions and High-Altitude Drones: The Indian Army has high-altitude drones and loitering munitions. Both weapons systems can fly to higher heights to drop a payload and are usually employed for reconnaissance and offensive operations.

(d) Swarm Drone Competition: The Indian Army has seriously ramped up its combat capabilities by acquiring sophisticated swarm drone systems through the Swarm Drone Competition. These swarm systems are specially designed to carry out surveillance and strike operations. State-of-the-art technology and AI-driven software are the basic elements of the structure of these swarm drones. Satisfactory results with stipulated precision and accuracy in identifying targets are vital aspects of their performance. This capability makes it a valuable asset for the Indian Army.[5]

(e) Veda Defence Systems' $36 Million Contract: Veda Defence Systems, a new company from New Delhi, has been awarded a contract worth three billion rupees (sums up to thirty-six million dollars) to make two hundred long-range swarm drones for the Indian Air Force. Dips Veda Defence System has been operating for three years; the managing director of which is Dipsesh Gupta, said that the UAVs have a range of around 150 kilometres (93 miles). He emphasised the qualities of the Drone. These kamikaze swarm drones are put in groups, but they fly together to attack or defend the targets when they are in the air.[6]

(f) Indigenous Navigation System and Anti-Swarm Drones of the Indian Navy: The Indian Navy has developed the indigenous navigation system and anti-swarm drones to protect itself from enemy drone attacks. The new anti-swarm drone system is capable of fortifying naval assets against hostile swarm drone assaults by forming an iron shield around them. Last October at Bhart Mandapam, Anri-drone 30 mm ammunition was displayed at the Indian Navy's Swavalambam 2023.[7]

Induction of AI-driven SWARM Drones by Indian Army

Swarm drones are being incorporated into the Indian Army's mechanised forces, a strategic step that ushers in a new era of "niche" and "disruptive technology." The employment of these drones will considerably enhance the Indian Army's capabilities to counter any threats to national security.[8]

India's swarm drone system is not just another drone system. It's a marvel of cutting-edge technology, equipped with AI-driven software that enables it to identify and recognise targets with precision.

The system is comprised of multiple drones controlled from a single station. These drones can be programmed to carry out particular tasks using an algorithm to carry out a variety of duties, including surveillance.

At the same time, the Chinese continue to be forward deployed along the Line of Actual Control (LAC) for the last four years and are not willing to revert to the status quo prior to Jun 2020. The Indian Army is preparing to transform itself into a technology-enabled force. It has been learnt that the Army has begun submitting a Make II case for the Autonomous Surveillance and Armed Drone Swarm (ASAD-S).[9]

Conclusion

Through these contemporary developments, India has demonstrated its firm commitment to the development and acquisition of swarm drone technology to strengthen its military capabilities and protect itself from dangers. The nation needs to be 100% self-reliant on swarm technology development and give impetus to the creation of a research and development ecosystem of swarm drone technology to enhance its military capabilities and counter potential threats.

Notes:

[1] Nivriti Mohan, "IAF signs kamikaze swarm drone contract with Indian start-up", The News Nine, August 14, 2023, https://www.news9live.com/india/iaf-signs-kamikaze-swarm-drone-contract-with-indian-start-up-2249686. Accessed on May 18, 2024.

[2] Sudhi Ranjan Sen, "Startup Wins $36 Million Swarm Drone Deal From Indian Air Force", The Bloomberg,

August 31, 2023, https://www.bloomberg.com/news/articles/2023-08-31/startup-wins-36-million-swarm-drone-deal-from-indian-air-force. Accessed on May 12, 2024.

[3] Bloomberg, "Delhi-based startup wins $36 Million swarm drone deal from Indian Air Force", CNBC 18 TV, August 31, 2023, https://www.cnbctv18.com/business/delhi-based-startup-wins-36-million-swarm-drone-deal-from-indian-air-force-17689121.htm. Accessed on May 12, 2024.

[4] Manu Pubby, "India places orders for drones, loitering munitions", The Economics Times, September 06, 2021, https://economictimes.indiatimes.com/news/defence/india-places-orders-for-drones-loitering-munitions/articleshow/85916604.cms. Accessed on May 12, 2024.

[5] "Indian Army inducts swarm drones: How it will impact balance with China along LAC", WION, August 28, 2022, https://www.wionews.com/photos/indian-army-inducts-swarm-drones-how-it-will-impact-balance-with-china-along-lac-510780. Accessed on May 12, 2024.

[6] Ibid (CNBC).

[7] ANI, Indian Navy Develops Anti-Swarm Drones To Safeguard From Enemy Attacks, NDTV, October 05, 2023, https://www.ndtv.com/india-news/indian-navy-develops-indigenous-navigation-system-anti-swarm-drones-to-safeguard-from-enemy-attacks-4451318. Accessed on May 12, 2024.

[8] Ibid (WION).

[9] Ibid (WION).