SWARM Autonomous surveillance and deployment

UNIQUENESS

This comparison highlights the strategic advantages of Al-driven drone swarms in large-scale, costsensitive operations, particularly where coordination and autonomy are critical.



IN A TABULAR FORM

FEATURE	AUTOMOUS AI DRONE SWARMS	TRADITIONAL UAVS	HIGH-END UAVS
Efficiency	HIGH	Moderate	Very High
Coordination	Advance Swarm Intelligence	Limited Coordination	Sophisticated Sytems
Operational Cost	Low	Moderate	High
Autonomy	Fully Autonomous	Human-Assisted	Semi-Autonomous
Cost per unit	\$10,000	\$50,000-\$200,000	>\$1,000,000



Technology Framework of SWARM Tech.

MASTER DRONE

The Master Drone serves as the central controller of the swarm. It is equipped with advanced AI and computational capabilities to handle critical tasks such as:

- Receiving mission inputs from Mission Control or user interfaces.
- Processing data from sensors (e.g., LiDAR, cameras, GPS) to generate insights.
- Running the AI Decision Engine for tasks like route planning, task allocation, and swarm coordination.
- Communicating updated plans, commands, and telemetry adjustments to the Slave Drones.



Slave Drones are the operational units in the swarm. Their role is to:

- Execute the flight plans and commands issued by the master drone.
- Provide telemetry and status updates back to the master drone for monitoring and adjustments.
- Respond promptly to new instructions or re-routing in dynamic scenarios.

Slave drones lack the advanced processing power of the master drone but rely on the communication network to perform efficiently as part of the larger system.





USE CASES

Each use case highlights the versatility and transformative potential of SWAR drone technology across industries, with the military and search and rescue as the major potential customer.



GLOBAL DRONE MARKET

The Global Drone Market size is expected to be worth around USD 88 Billion by 2033, from USD 33 Billion in 2023, growing at a CAGR of 10.1% during the forecast period from 2024 to 2033.

