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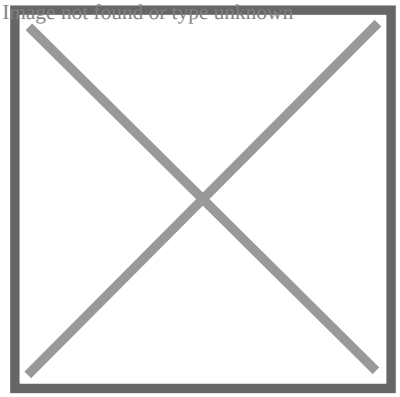

Killing By Drone: Hunting Enemies In Urban Combat

Description

To a Technocrat, efficiency is like catnip is to a cat – it cannot be resisted even to the point of creating automated killing machines. Why get your hands dirty, anyway? And if you make a mistake and kill the wrong person. well, just write that off to occasional collateral damage or friendly fire. This arms race cannot be stopped at this point. ? TN Editor

A new drone from Israel's Elbit Systems called Lanius combines a number of technologies that put it at the forefront of how drones are transforming war.

At the same time, reports about the drone may raise questions about how this technology may make war more controversial as "robots" play a larger role in it.

The more armies and defense companies invest in new technology that enables combat to take place remotely — without soldiers interacting with civilians, for instance — the more it seems like "robot wars."

Elbit Systems has said that Lanius is "part of the Legion-X robotic and autonomous combat solution." Elbit is one of Israel's three largest defense companies and is at the forefront of defense technology.

Its website says the drone "is a highly maneuverable and versatile drone-based loitering munition designed for short-range operation in the urban environment."

The drone can scout and map buildings, flying around small corridors and through doorways. This means it can help a user find "points of interest for possible threats, detecting, classifying and syncing to Elbit Systems' Legion-X solutions. Lanius can carry lethal or non-lethal payloads, capable of performing a broad spectrum of mission profiles for special forces, military, law enforcement, and HLS."

The small drone has an interesting appearance which differentiates it from the other types of small quadcopter-style drones. While it uses small rotors, it also has a large bug-like head full of optics, presumably helping it "see" better and aiding it in missions that involve mapping indoors.

Quadcopter drones were developed for commercial use but militaries have quickly adapted these small

“tactical” style drones for use with troops in the field.

Usually, small drones don’t have a long range and they can’t operate for long periods. However, as militaries adopt them they must be ruggedized and be able to operate in heat and cold, unlike their commercial cousins that may overheat easily in a desert environment.

Once militaries and defense companies got around the intrinsic problem that these drones could be easily damaged, such as when rotors run into branches of trees, the issue became how to make them not only survive missions but also to do what soldiers need them to do.

THE LANIUS has both surveillance and “attack” capabilities, another added function that modern drones need.

When commercial-style drones that people use to take videos of weddings and such were adapted to military use the idea was that they could do surveillance missions. That means that soldiers crouching behind a wall, rather than expose themselves to enemy fire, can send up a small drone to see what is happening in the area.

Once one adds new technology and artificial intelligence into the software of the drone, then it can help identify targets or points of interest. For instance, a drone can tell a soldier if it sees an enemy holding an RPG, or a man mopping his roof. It can help classify targets.

What about when the drone has the capability to neutralize the target? This is where the idea of adding attack functions to drones came into play.

Initially, these kinds of drones were called by other names, such as “loitering munitions” and their main point was that they had a warhead built in. This made them expendable so they either had to be used on high-profile targets, like radars, or they had to be cheap and expendable.

Combining the various functions into one lightweight drone, like Lanius, appears to be a game-changer in terms of giving soldiers the tools they need on a modern battlefield.

That means the soldier doesn’t necessarily have to risk his life and that it helps reduce collateral damage, meaning soldiers don’t get tied down in firefights in cities where civilians may end up in the line of fire. Ostensibly dispatching drones can reduce friction and reduce casualties.

Elbit’s website says the new drone is “equipped to engage with target (man-in-the-loop),” meaning a person signs off on the drone’s operations. The site also says the drone is very maneuverable, offers “low collateral damage” and is high-speed. It has an onboard computer that supports “AI advanced algorithm for collision avoidance/mapping/ classification.”

A video introducing the drone shows it being used in an urban environment: When soldiers get bogged down in a firefight, the Lanius is sent in to help. The video shows a kind of drone “mother ship” that can dispatch several Lanius. The drones then buzz around, like a swarm of bees, and identify enemy targets and help the soldiers who got bogged down defeat the enemy.

Drones have become more popular for the same reason as tanks, planes and other systems. The drone as a platform lets an army do lots of missions and protects troops in the process. If an unmanned vehicle can seek out explosive devices, then soldiers won’t step on mines; if a drone can

investigate a suspicious object, then people don’t need to be put in harm’s way.

At the same time, there is concern that drones enable militaries to engage in operations remotely. That could be a good thing because it means fewer soldiers interacting with civilians or getting into fire-fights in urban environments. Critics see a different problem, involving “robots” potentially identifying targets and users neutralizing the targets with the push of a button, turning war into something that looks more like a video game.

Some worry this makes militaries less accountable or can lead to mistakes. On the other hand, when countries like Russia or Iran use kamikaze drones, they tend to purposely direct them to attack civilian targets, as Iran did against a commercial tanker last week. Therefore, drones in the wrong hands can lead to dire consequences.

Last year, a Turkish drone was reportedly involved in an attack in Libya where the drone made the decision to attack on its own. The reports behind this story leave many questions and it is unlikely that the drone really did its mission “autonomously” and also executed an attack without a person “in the loop.” Nevertheless, the reports raised eyebrows and concerns about whether drones were getting ahead of their operators.

By SETH J. FRANTZMAN

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