

Commentary: War in Ukraine accelerates global drive toward killer robots

February 21 2023, by James Dawes



It wouldn't take much to turn this remotely operated mobile machine gun into an autonomous killer robot. Credit: [Pfc. Rhita Daniel, U.S. Marine Corps](#)

The U.S. military is intensifying its commitment to the development and use of autonomous weapons, as confirmed by an update to a [Department of Defense directive](#). The update, released Jan. 25, 2023, is the first in a decade to focus on artificial intelligence autonomous weapons. It follows a related [implementation plan](#) released by NATO on Oct. 13, 2022, that is aimed at preserving the alliance's "technological edge" in what are

sometimes called "killer robots."

Both announcements reflect a crucial lesson militaries around the world have learned from recent combat operations in [Ukraine](#) and [Nagorno-Karabakh](#): Weaponized artificial intelligence is the future of warfare.

"We know that commanders are seeing a military value in loitering munitions in Ukraine," Richard Moyes, director of [Article 36](#), a humanitarian organization focused on reducing harm from weapons, told me in an interview. These weapons, which are a cross between a bomb and a drone, can hover for extended periods while waiting for a target. For now, such semi-autonomous missiles are generally being operated with significant human control over key decisions, he said.

Pressure of war

But as casualties mount in Ukraine, so does the pressure to achieve decisive battlefield advantages with fully [autonomous weapons](#)—robots that can choose, hunt down and attack their targets all on their own, without needing any human supervision.

This month, a key Russian manufacturer [announced plans](#) to develop a new combat version of its Marker reconnaissance robot, an uncrewed ground vehicle, to augment existing forces in Ukraine. Fully [autonomous drones](#) are already being used to [defend Ukrainian energy facilities](#) from other drones. Wahid Nawabi, CEO of the U.S. defense contractor that manufactures the semi-autonomous [Switchblade drone](#), said the technology is [already within reach](#) to convert these weapons to become fully autonomous.

Mykhailo Fedorov, Ukraine's digital transformation minister, has argued that fully autonomous weapons are the war's "[logical and inevitable next step](#)" and recently said that soldiers might see them on the battlefield in

the next six months.

Proponents of fully autonomous weapons systems [argue that the technology will keep soldiers out of harm's way](#) by keeping them off the battlefield. They will also allow for military decisions to be made at superhuman speed, allowing for radically improved defensive capabilities.

Currently, semi-autonomous weapons, like loitering munitions that track and detonate themselves on targets, require a "human in the loop." They can recommend actions but require their operators to initiate them.

By contrast, fully autonomous drones, like the so-called "[drone hunters](#)" now [deployed in Ukraine](#), can track and disable incoming unmanned aerial vehicles day and night, with no need for operator intervention and faster than human-controlled weapons systems.



This composite image shows a 'Switchblade' loitering munition drone launching from a tube and extending its folded wings. Credit: [U.S. Army AMRDEC Public Affairs](#)

Calling for a timeout

Critics like [The Campaign to Stop Killer Robots](#) have been advocating for more than a decade to ban research and development of autonomous weapons systems. They point to a future where autonomous weapons systems are designed specifically to target humans, not just vehicles, infrastructure and other weapons. They argue that wartime decisions over life and death must remain in human hands. Turning them over to an algorithm amounts to the ultimate form of [digital dehumanization](#).

Together with [Human Rights Watch](#), The Campaign to Stop Killer Robots argues that autonomous weapons systems lack the human judgment necessary to distinguish between civilians and legitimate military targets. They also lower the threshold to war by reducing the perceived risks, and they erode meaningful human control over what happens on the battlefield.

The organizations argue that the militaries [investing most heavily](#) in autonomous weapons systems, including the U.S., Russia, China, South Korea and the European Union, are launching the world into a costly and destabilizing new arms race. One consequence could be this dangerous new technology falling into the [hands of terrorists and others outside of government control](#).

The updated Department of Defense directive tries to address some of the key concerns. It declares that the U.S. will use autonomous weapons systems with "[appropriate levels of human judgment over the use of force](#)." Human Rights Watch [issued a statement](#) saying that the new directive fails to make clear what the phrase "appropriate level" means and doesn't establish guidelines for who should determine it.

But as Gregory Allen, an expert from the national defense and [international relations](#) think tank [Center for Strategic and International](#)

[Studies](#), argues, this language [establishes a lower threshold](#) than the "meaningful human control" demanded by critics. The Defense Department's wording, he points out, allows for the possibility that in certain cases, such as with surveillance aircraft, the level of human control considered appropriate "may be little to none."

The updated directive also includes language promising ethical use of autonomous weapons systems, specifically by establishing a system of oversight for developing and employing the technology, and by insisting that the weapons will be used in accordance with existing international laws of war. But Article 36's Moyes noted that international law currently does not provide an adequate framework for understanding, much less regulating, the concept of [weapon](#) autonomy.

The current legal framework does not make it clear, for instance, that commanders are responsible for understanding what will trigger the systems that they use, or that they must limit the area and time over which those systems will operate. "The danger is that there is not a bright line between where we are now and where we have accepted the unacceptable," said Moyes.

Impossible balance?

The Pentagon's update demonstrates a simultaneous commitment to deploying autonomous weapons systems and to complying with international humanitarian law. How the U.S. will balance these commitments, and if such a balance is even possible, remains to be seen.

The International Committee of the Red Cross, the custodian of international humanitarian law, insists that the legal obligations of commanders and operators "[cannot be transferred to a machine, algorithm or weapon system.](#)" Right now, human beings are held responsible for protecting civilians and limiting combat damage by

making sure the use of force is proportional to military objectives.

If and when artificially intelligent weapons are deployed on the battlefield, who should be held responsible when needless civilian deaths occur? There isn't a clear answer to that very important question.

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