International Committee for Robot Arms Control (ICRAC)

# LAWS: Ten Problems For Global Security

**Memorandum for delegates at the Convention on Certain Conventional Weapons (CCW) Meeting of Experts on Lethal Autonomous Weapons Systems (LAWS)**

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ICRAC is an international not-for-profit association of scientists, technologists, lawyers, and policy experts committed to the peaceful use of robotics in the service of humanity and the regulation of robot weapons http://www.icrac.net.

ICRAC is a founding member of the Campaign to Stop Killer Robots
http://www.stopkillerrobots.org.

We are in the midst of a robotics revolution that is beginning to move the control of many processes out of human hands.

Such advances can help to make our lives better by taking care of dull, dirty, and dangerous tasks, increasing productivity and helping to mitigate the impacts of natural disasters and assisting humanity in general.

But we must be wary of the challenges and ethical risks that more automation poses to our humanity. As we increasingly delegate important decisions to machines, we must ask:

- What aspects of human life do we want to automate?
- Are there essentially human decisions that we wish to keep firmly in human hands?

ICRAC wishes to draw a bold red line and keep one such decision, the decision to apply violent force, out of the automated realm:

***We must not delegate the decision to kill to machines.***

Some argue that the automation of weapons has been employed for many years. Examples include close-in weapons systems, cruise missiles, lock-on after launch heat-seeking missiles and wide-area search-and-destroy loitering munitions. There have been many discussions about precise definitions of Lethal Autonomous Weapons System (LAWS), under what circumstances they can comply with International Humanitarian Law (IHL), and about what it means for a weapon to remain under meaningful human control?

However, we must not lose sight of the forest for the trees. Sometimes it is more useful to step out of localised debates and look to where these developments are likely to take us in the future, if some fundamental principles are not upheld. Here are ten of the reasons why LAWS could perilously impact global security.

## Ten problems for global security

### 1. Proliferation

When a weapon creates any military advantage nations will rush to acquire it. Without an international muzzle on the development, testing, and production of LAWS, we are likely to see mass proliferation of these weapons and counter weapons. Not all nations will have the ability to carry out weapons reviews of LAWS required under international law. It is not difficult to create LAWS when there is insufficient consideration for IHL.

### 2. Lowered threshold for armed conflicts

LAWS could lead to more action short of warfare by minimising human military forces in conflict zones. This could enable states to initiate the use of violent force without the consultation procedures required to deploy troops on the ground. By removing these inhibitors of violent action, some could be seduced into more armed conflicts – at the expense of civilian populations.

### 3. Continuous global battlefield

One reason for the development of LAWS is the persistence of unmanned vehicles. Some current remotely piloted aerial vehicles have been employed to monitor and attack targets over long time periods. Without the requirement for a remote operator to maintain vigilance, LAWS could be left behind - like landmines - to patrol post-conflict zones and could thus create a continuous global battlefield. The result could have devastating psycho-social consequences.

### 4. Unpredictability of interaction

As more countries employ LAWS and autonomous counter defences, these weapons as well as command and control systems will inevitably interact. When any mobile device controlled by software programs interacts with a competing hostile device controlled by unknown software, the result of the interaction is scientifically impossible to predict.

### 5. Accelerating the pace of battle

One of the most common reasons given to support the use of LAWS is that the pace of battle is increasing to a point where human decision-making is not fast enough. New prototypes in the unmanned systems domain are increasingly being tested at supersonic and hypersonic speeds. This will require even faster autonomous response devices that in turn will require ever-faster weapons. It is not hard to see that such a 'pace race' will equate to humans having little control over the battle-space.

### 6. Accidental conflict

If the development and proliferation of LAWS is allowed to continue, supersonic or hypersonic (defence) systems of one state could interact with equally fast LAWS from another state. The speed of their unpredictable interaction could trigger unintended armed conflicts before humans had the opportunity to react.

### 7. Militarization of the civilian world

We are already seeing the use of new unmanned war technologies in civilian settings. Law enforcement and border control agencies are using unmanned systems for surveillance. Some companies are even arming them with Tasers, pepper sprays and other so-called 'less than lethal' ammunition. With autonomous targeting technology this could lead to violations of human and civil rights by police and private security forces with little possibility of accountability.

### 8. Automated oppression

LAWS would be an attractive tool for the oppression of populations and the suppression of peaceful protest and political change. While soldiers can in principle refuse to turn their weapons on their own people, LAWS will kill mercilessly on the basis of their coded instructions.

### 9. Non-state actors

We are currently witnessing an unprecedented diffusion of technology. The cost of robotics development is falling, with the required off-the-shelf hardware now widely available. If autonomous weapons development is allowed to continue it will not be long before we see crude copies or grey market exports in the hands of non-state armed actors.

### 10. Cyber vulnerability

Humans need to be in control of weapon systems to counter many of the potential dangers with entirely computerised and autonomous weapons. The risks of software coding errors, malfunctions, degradation of communications, and especially enemy cyber-attacks, infiltrations into the industrial supply chain, jamming, and spoofing make LAWS inherently insecure.

## Conclusion

We are at a critical juncture in the evolution of weapons. The end point of increasing weapons' automation is full autonomy, where human beings have little control over the course of conflicts and events in battle. At this point in time, it is still within our power to stop the automation of the kill decision, by ensuring that every weapon remains meaningfully controlled by humans.

Both humans and computer systems have their strengths and weaknesses, and the aim of designing effective supervisory systems for weapons control must be to exploit the strengths of both. This way, it is possible not only to gain better legal compliance, but also to ensure that the partnership between human and machine best ensures the protection of civilians, their human dignity and our wider global security.