

# Canadian Food For Thought Paper: Context, Complexity and LAWS

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*The Government of Canada wishes to reinforce that this paper has been developed to contribute to in-depth discussion of the concept of Lethal Autonomous Weapons Systems (LAWS). As such, it discusses the creation and deployment of such systems in the hypothetical. This should not be construed as support by the Government of Canada for or against such systems as we continue to believe that further careful study is needed nationally and by the international community prior to any decision in this regard.*

As High Contracting Parties and international experts meet at the Convention on Certain Conventional Weapons (CCW) to discuss Lethal Autonomous Weapons Systems (LAWS), Canada believes it would be beneficial to closely examine the complexities inherent in the potential use of this technology. In particular, it seems likely that the implications of LAWS will vary according to the following contextual factors:

- operational environment;
- geo-political context;
- weapon type, use and target; and
- the level and nature of human-machine interaction.

Examining such factors closely may help the international community better understand the complexities of LAWS, as well as their prospective risks and benefits, and determine whether or how their development or use should be regulated or restricted.

## **The Abstract Nature of the Debate Thus Far**

Over the course of 9 days of Experts Meetings at the CCW since 2014, the international community has made significant progress in understanding the humanitarian, strategic and military implications of increasing levels of autonomy in weapons systems. Whether using the terminology of meaningful human control, appropriate human judgment, or other nomenclature, experts and state delegates have discussed important issues surrounding the relationship between humans and military technology. These rich discussions have confirmed the importance of the issue of LAWS, clarified some of the key issues at stake in the LAWS debate, and highlighted a variety of areas requiring further discussions.

However, to a certain extent, discussions have remained at an abstract level thus far. Various experts and states have used the term LAWS inconsistently with some suggesting that LAWS only refers to hypothetical future weapons and others suggesting that current technology, including semi-autonomous systems, could be included under this term. Still others seem to be conflating LAWS with existing unmanned systems, such as remotely-piloted aircraft.

Further, discussions about the policy and humanitarian implications of LAWS often assume that these implications would be the same in all times and places. However, it seems likely that the implications of LAWS will vary considerably depending on the specific circumstances under which LAWS might be used. A deeper and more nuanced understanding of these implications may help the international community to assess a broader approach on LAWS

## **The Importance of Context**

**First**, the *operational environment* should be taken into consideration when discussing policy and humanitarian questions surrounding the use of LAWS. For example, using LAWS in a crowded urban battleground, where the enemy is hiding amongst a civilian population, may be very different than using them in the air or maritime environment where there are fewer or no civilians. Yet it is also likely incorrect to offer a blanket statement that LAWS would always be less problematic in the air and at sea than they would be on land. After all, a tank battle in the middle of the desert may raise fewer problems for the deployment of LAWS than battles in crowded littoral waters or airspace.

Further, the number and proximity of civilians is only one of the important considerations. The ability to maintain communications (more difficult at sea or in a dense urban 'canyon'), retrieve defeated or malfunctioning systems (easier on land), predict the number or type of interactions with the enemy (likely more difficult in the air and on land), and generally bound the operation of the system in time and space will also differ according to operational environment. Such differences must be closely considered to arrive at a more nuanced understanding of the implications of LAWS.

**Second**, *geo-political context* is also very important. Most notably, what is permitted in war will be different than what is permitted in peacetime or crisis. For example, while deploying certain types of LAWS for defensive purposes may be appropriate in wartime, doing so in times of crisis may significantly increase the risks of escalation, especially as they may interact with other LAWS in unexpected

ways.<sup>1</sup> The use of LAWS along the various stages of the spectrum of conflict must be fully considered.

**Third**, the implications related to autonomous weapons will likely vary according to ***weapon type, use, and target***. The implications of deploying a ‘one-shot’ LAWS munition over a limited time and space that is programmed to destroy a specific material target seem very different than those of deploying a LAWS platform with significant ammunition over a wide area against human targets. Some weapons types carry an inherently greater risk of immediate or prolonged collateral damage, an important element to be considered in LAWS discussions.

**Fourth**, and perhaps most importantly, the implications of deploying LAWS will vary significantly depending on the ***level and nature of human and machine interaction***. This is not so much a stand-alone issue but rather one that permeates through all of the various aspects of LAWS. For instance, the human-machine relationship will likely differ by operational environment, with perhaps more functions ceded to machines in close defensive responses than in offensive operations.

The implications of deploying LAWS in crisis may also vary depending on how a state structures the relationship between humans and machines. For example, maintaining the ability to over-ride or shut-down LAWS after a mistaken engagement or malfunction could help contain the damage and limit unwanted escalation. Again, the physical access or communications links necessary to do so may differ depending on environment and would likely have to be failsafe or contain protocols to prevent engagements if communications links were lost.

More broadly, concerns over responsibility and accountability *may* be somewhat attenuated if the human commander responsible for the decision to deploy a particular type of LAWS carefully took into account issues such as those raised above (operational environment; geo-political context; weapon type, use and target). This would ensure that human judgment was being exercised in the decision to use lethal force. Such decisions could themselves be judged according to still to be defined standards of appropriateness.

## Conclusion

It is clear that LAWS raise important ethical issues – not least the open and vexing question whether it would be *prima facie* immoral to delegate the decision to kill to a machine, even in cases where a machine could potentially be more effective in limiting civilian casualties.

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<sup>1</sup> Given that this technology remains hypothetical there is no proof one way or another that LAWS might be more prone to escalation than human operators. Much would depend on how the use of LAWS interacted is interpreted by an adversary.

While recognizing the importance of such abstract philosophical questions, this paper has also suggested that it is important for the international community to more closely examine how the potential use of LAWS could vary by context. In doing so, High Contracting Parties may also wish to pay particular attention to how the contextual factors outlined above (operational environment; geo-political context; weapon type, use and target; and level and nature of human and machine interaction) interact with each other.

Finally, High Contracting Parties may also wish to collectively examine how different types of risk – such as the risk of civilian casualties and unwanted escalation – may be affected by these contextual factors.

Canada hopes that by developing a deeper, more nuanced understanding of the complex strategic, military, and humanitarian issues raised by LAWS, the international community will be better able to grasp the perils or promise of this emerging technology, and take wise and effective action.