LAWS Group of Governmental Experts of the High Contracting Parties to the
Convention on Certain Conventional Weapons

Elements for possible consensus recommendations

Contribution by Finland
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Introduction

At the request of the GGE LAWS Chair, H. E. Ambassador Marc Pecsteen, Finland is pleased to contribute to the discussion on elements for possible consensus recommendations related to the clarification, consideration, and development of aspects of the normative and operational framework on emerging technologies in the area of lethal autonomous weapons systems.

This paper builds on the framework presented in June 2020 through Finland's previous submission, "Considerations on the appropriate level of human involvement in LAWS". With the current paper, the aim is to establish a categorisation that covers both the prohibited and allowed features and uses of LAWS. It also suggests a way forward in the form of a continuous and developing arms control process within the UN CCW.

Seeking elements for consensus

Lethal autonomous weapons systems (LAWS) form an extremely complex domain. When assessing possibilities for regulation, the following characteristics need to be taken into account:

1) In contrast to other arms control domains, LAWS or its functioning lack an unambiguous definition. Because of this complexity, approaching LAWS through **categorisation and classification** seems the only feasible option. Defective or incomplete definitions would not be useful.
2) Assessing LAWS' compliance with IHL is the essential element in our debate. Assessing compliance is both a **continuous process** across the whole lifecycle of a weapon system and a **function** that needs to be conducted in each operative situation to determine how the human element materialises in relation to a machine.
3) We have to accept that no matter how well the wanted/unwanted features of LAWS are defined, the need for **contextual interpretation** will remain. Compliance with any regulation of LAWS would thus be highly contextual and would need to be assessed on a case-by-case basis, as is the practice with IHL.

Let us assume that there is a category "Black" that is clearly and inherently in contradiction with IHL or other ethical principles. Black would include actions or elements that need to be prohibited in all circumstances. Completely non-existent human involvement would therefore fall into the Black category.

At the other end, let us assume a category "White", which includes behaviour or manoeuvres that are IHL compliant and therefore allowed. In this category, human involvement is clearly present and sufficient. Deployment of traditional weapons systems should provide a reference point.

Between White and Black there will be a "Grey" area in which the rules cannot be applied in a universal manner, but require contextual assessment. Depending on the result of that assessment, a case within the Grey area will then fall into either the Black or White category. Initially, the Grey area will be wider, but with accumulated experience, best practices and customary law will begin to emerge, which could over time lead to a more detailed regulatory framework.

Based on the above, and the broad range of views expressed, a framework tackling both ends of the spectrum simultaneously would seem the best way forward. **While defining what constitutes non-compliant use of LAWS, we should also seek to clarify which types of uses are IHL compliant and therefore allowed.** A possible regulation of LAWS would most helpfully accomplish both.

In the following, Black, Grey, and White areas are discussed in more detail.

Black area

One way to outline the "Black" area, i.e. to prohibit certain features or uses of LAWS, irrespective of individual use-cases, would be to utilise the taxonomy suggested in the 2018 CCW LAWS working paper by Estonia and Finland "Categorizing lethal autonomous weapons systems – A technical and legal perspective to understanding LAWS". In this paper, a main classification was established between the concepts of automation, autonomy, and independence.

Autonomy is always a relative term. The characterisation of "independence" could be used to define a non-contextual Black area that is always prohibited. In contrast to autonomous operation, true independence means that the system would be capable of defining and thereby deciding the ultimate goals of its own functioning. The independent targeting capability would follow as a subordinate behaviour to the system's own self-motivation.

The machines we know so far do not have their own free will nor contextual understanding that could trigger inner motivation and definition of goals. Even the most advanced machine autonomy performs tasks that are ultimately given and defined by a human. This assumption is not challenged by any known machine learning paradigm.

To ensure IHL compliance over the long term, LAWS that operate in a truly independent manner or which perform tasks with no limitations and/or without a tasking by a human, could be pre-emptively banned.

Grey area

Weapon systems including autonomous features or functions and the intended military task to be resolved require contextual review. **To determine compliance/non-compliance with IHL of LAWS for the given task in certain circumstances, three interlinked key elements should be studied in all phases of preparation and planning**:

1) **Technological capability of the system**; i.e., the level of autonomous reasoning or analysis that the system is capable of performing, especially in relation to the assessment of critical IHL factors..
2) **Context**; as stated above, most questions will require context sensitive analysis, producing context sensitive answers.
3) **Task definition**; taking into account the technological capabilities and contextual requirements, the task definition phase that sets limits and constraints to the functioning of the weapon in all dimensions ("box-of-operation") is the critical moment for ensuring that all IHL and mission specific requirements will be met.

White area

Emerging capabilities, especially in the civilian domain, will soon surpass military capabilities in many functions. These technological developments are here to stay, regardless of their possible military use. Therefore, the most efficient way to ensure that any future LAWS comply with IHL is to define a framework for their legitimate use.

Putting in place measures that enable the responsible use of new technology can also have benefits for the implementation of IHL. If AI enabled machine autonomy is applied to weapon systems with appropriate human involvement and by using ambitious ethical standards, it can also support humanitarian objectives, by allowing higher precision and distinction for military purposes.

However, these positive developments could be hampered if a regulation were to set double standards in relation to oversight. Maintaining the existing requirements for traditional types of weapons while setting unrealistically strict requirements for new weapon systems could result in a lower threshold for the use of the older systems that are less precise and less distinct in targeting, and a higher one for the new systems with more precise and distinctive capabilities enabled by autonomous features.

The current discussion on the requirement for constant communication serves as an example. Off-the-loop operation does not inherently mean non-compliance with IHL, as direct human control is not the only way to guarantee human involvement throughout the whole lifecycle of the weapon.

This and other practical considerations related to IHL compliance were elaborated in a previous CCW LAWS Food for thought paper by Finland in 2020. In that paper, a basic framework outlining the required level of human involvement in different phases of the operational use of LAWS was presented, consisting of five consecutive phases to achieve compliance:

1) Weapons review; importance of a thorough, context-sensitive Article 36 examination
2) Doctrine, organisation and training; necessity of a profound understanding of the functioning of the weapon system and the impacts of its use
3) Mission planning and defining the box-of-operation; crucial phase to ensure contextual compliance
4) Launch and the point-of-no-return; the potential of autonomy to generate enhanced operative options
5) Monitoring the mission and ending it; including independent on-board safety mechanisms

Conclusion

International law continues to apply in full regardless of technological developments. Any weapons system, whether with or without autonomous features, must be used in accordance with international humanitarian law. Humans remain fully responsible for the use of military force and its consequences in all situations. The key to IHL compliant and ethical use of LAWS lies in the contextual assessment that is conducted in close relation to the technological capabilities of the weapon and the task definition in question.

The main aim of the normative and operational framework should be to ensure the full compliance with IHL in the development and use of LAWS. At the same time, care should be taken that progress in the development and the positive potential of these dual-use technologies is not unduly hampered.

To strike this balance, the framework should include both prohibitive elements to ban unwanted use and elements to allow certain IHL compliant uses of LAWS. Given the rapid pace of technological progress, the regulation of LAWS should be a continuous arms control process under the UN CCW that monitors and takes into account developments in all relevant spheres, including the technological, military and legal domains. Through such a process, a comprehensive toolkit to guide the development and use of LAWS would emerge over time.