

Commentary on the operationalization of the Guiding Principles affirmed by the Group of Governmental Experts on Emerging Technologies in the Area of Lethal Autonomous Weapons Systems at national level

Submitted by Japan

This commentary from Japan is preliminary, and without prejudice to Japan's position on further discussion.

(a) International humanitarian law continues to apply fully to all weapons systems, including the potential development and use of lethal autonomous weapons systems

Principles of international humanitarian law (IHL) must be upheld in the development and operations of all weapons systems including LAWS.

Compliance with international law, especially IHL, is essential in armed conflict. The same is true for LAWS. It should be used in compliance with the principles upon which IHL is based, including the principles of distinction between civilians and combatants, the principles of proportionality, and precaution against military objectives.

Regarding the definition of LAWS, it is necessary to deepen discussion on the lethality and form of human control.

(b) Human responsibility for decisions on the use of weapons systems must be retained since accountability cannot be transferred to machines. This should be considered across the entire life cycle of the weapons system;

Any violation of IHL by using autonomous weapons systems should be attributed to States or individual persons as is the case with conventional weapons systems.

In general, if there is a violation of IHL caused by autonomous weapons systems belonging to a State, it would be assumed that such violation would be attributed to the State. There might also be cases where such illegal action is attributed to individual persons. In any case of a violation of IHL by using autonomous weapons systems, a State or individual person should be held responsible as is the case with conventional weapons systems.

(c) Human-machine interaction, which may take various forms and be implemented at various stages of the life cycle of a weapon, should ensure that the potential use of weapons systems based on emerging technologies in the area of lethal autonomous weapons systems is in compliance with applicable international law, in particular IHL. In determining the quality and extent of human-machine interaction, a range of factors should be considered including the operational context, and the characteristics and capabilities of the weapons system as a whole;

With regard to the relationship with international law and ethics, principles of IHL must be upheld in the development and operations of all weapons systems including LAWS. Any violation of IHL by using autonomous weapons systems should be attributed to States or individual persons as is the case with conventional weapons systems.

Regarding the form of human control, it is indispensable that a lethal weapon system be accompanied with meaningful human control by securing proper operation and be operated by persons with sufficient information on such weapons systems.

Some argue that meaningful human control should be incorporated in the whole process of weaponization, ranging from political instruction in the pre-development phase, research and development, testing, evaluation and certification, deployment, training, command and control, use and abort, and post-use assessment. On the other hand, there is a wide range of views on where and how much meaningful human control is necessary in the life-cycle of weapons systems. Therefore, it would be necessary for stakeholders to further explore such questions taking into account the trends of emerging technologies.

The machine element in the term “human-machine interaction” in the principle requires through discussions because the machine element cannot be decisively categorized with a uniform definition, but rather varies with diverse factors as operational environment, performance and characteristics, including the constrainability, of weapons systems.

(d) Accountability for developing, deploying and using any emerging weapons system in the framework of the CCW must be ensured in accordance with applicable international law, including through the operation of such systems within a responsible chain of human command and control;

Compliance with international law, especially IHL, is essential in armed conflict. The same is true for LAWS. It should be used in compliance with the principles upon which IHL is based, including the principle of distinction between civilians and combatants, the principle of proportionality, and precaution against military objectives.

With regard to the relationship with international law and ethics, principles of IHL must be upheld in the development and operations of all weapons systems including LAWS. Any violation of IHL by using autonomous weapons systems should be attributed to States or individual persons as is the case with conventional weapons systems.

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(e) In accordance with States' obligations under international law, in the study, development, acquisition, or adoption of a new weapon, means or method of warfare, determination must be made whether its employment would, in some or all circumstances, be prohibited by international law;

This principle is considered stipulating substantially the same provision as that of Article 36 of the Additional Protocol I of the Geneva Convention on August 12, 1949. Article 36 can be interpreted as obligating each High Contracting Party, in its research, development, acquisition or adoption of a new weapon, means or method of warfare, to determine whether its employment would, in some or all circumstances, be prohibited by this Protocol or by any other rule of international law applicable to the High Contracting Party. Introducing an implementation mechanism of weapons review into the annual report of the CCW may work as one of confidence building measures.

(f) When developing or acquiring new weapons systems based on emerging technologies in the area of lethal autonomous weapons systems, physical security, appropriate non-physical safeguards (including cyber-security against hacking or data spoofing), the risk of acquisition by terrorist groups and the risk of proliferation should be considered;

Taking measures for cyber-security, among others, is important, considering various risks including the possible serious impact of breach of IHL resulted from malfunction of autonomous weapons systems caused by manipulation of programming.

With regard to non-proliferation, the emergence of new technologies is spurring a growing potential for private sector technologies to be used for military applications, increasing the proliferation risk of weapons that pose a threat and of related materials and technologies. Against this backdrop, it is important that maintaining and strengthening international non-proliferation frameworks and rules, taking appropriate non-proliferation measures domestically, and working on non-proliferation policy that prioritizes close coordination with and capacity building support for other nations.

(g) Risk assessments and mitigation measures should be part of the design, development, testing and deployment cycle of emerging technologies in any weapons systems;

It is important to improve the predictability and reliability of weapons systems that exercise emerging technologies by assessing their various effects and seeking risk-reduction measures in their life-cycle, especially in their designing, development and testing stages.

(h) Consideration should be given to the use of emerging technologies in the area of

lethal autonomous weapons systems in upholding compliance with IHL and other applicable international legal obligations;

Principles of IHL and other applicable international legal obligations must be upheld in the development and operations of all weapons systems including LAWS.

Compliance with international law, especially IHL, is essential in armed conflict. The same is true for LAWS. It should be used in compliance with the principles upon which IHL is based, including the principle of distinction between civilians and combatants, the principle of proportionality, and precaution against military objectives.

(i) In crafting potential policy measures, emerging technologies in the area of lethal autonomous weapons systems should not be anthropomorphized;

Any violation of IHL by using autonomous weapons systems should be attributed to States or individual persons as is the case with conventional weapons systems.

Regarding the form of human control, it is indispensable that a lethal weapon system be accompanied with meaningful human control by securing proper operation and be operated by persons with sufficient information on such weapons systems. It would be necessary to deepen discussion on where and how much meaningful human control is necessary in the life-cycle of weapons systems.

Meaningful human control should be incorporated in the whole process of weaponization, ranging from political instruction in the pre-development phase, research and development, testing, evaluation and certification, deployment, training, command and control, use and abort, and post-use assessment.

(j) Discussions and any potential policy measures taken within the context of the CCW should not hamper progress in or access to peaceful uses of intelligent autonomous technologies;

The research and development activities on autonomous technology should not be restricted on the simplistic ground that such technologies could be diverted to lethal weapons systems.

It is necessary to carefully and cautiously discuss the rules, taking into account the potential chilling effect of restricting research and development and the risk of hindering technological development and innovation in the civil sectors.

(k) The CCW offers an appropriate framework for dealing with the issue of emerging technologies in the area of lethal autonomous weapons systems within the context of the objectives and purposes of the Convention, which seeks to strike a balance between military necessity and humanitarian considerations.

It is necessary to have further discussions among stakeholders in the CCW for sharing understanding about the matters mentioned above in a tenacious manner. Bearing in mind the concerns of States and civil society on LAWS and expectations for technological progress, it is preferable that autonomous technologies and AI be developed substantially without hindering international peace and security.