Swedish Commentary on the Operationalization of the Guiding Principles on LAWS within the CCW

The following comments, in response to the request of the Chair of the GGE on LAWS, are based on Sweden’s understanding of the eleven Guiding Principles.

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

This is a fundamental principle. In order for it always to be upheld, it is of utmost importance to train and exercise the personnel in national armed forces in international law applicable during armed conflict. Legal advisors specialized in international law play a valuable advisory role in military decision-making relating to the interpretation and application of IHL.

Further analysis would be welcome regarding the application of existing IHL on account of possible future autonomous weapons systems.

(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;

The choice of military means and methods for a military operation must be compliant with the relevant rules and regulations on how military means can be used. In planning a military operation, a military commander and his/her staff must consider and assess the presence of civilians (distinction), the principle of proportionality, the principle of precautions in attack and the prohibition of causing unnecessary suffering and superfluous injury. The use
of a weapon that cannot, or will fail to, fulfil these provisions of IHL may not be deployed or used.

(c) Human-machine interaction … 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.

This is another fundamental principle. Preserving human control over the use of force is a key objective. Human-machine interaction can be seen as an important category of measures needed to ensure such control. Military decision-makers and operators need to be in control – both in terms of their understanding of the weapons systems and their ability and skill to control the systems. All weapons systems have to be predictable and reliable so that their human operators always can be certain that the systems will function in accordance with the intentions of the operator.

In a military context, rules, regulations and procedures should form a hierarchy of instructions for all operations involving weapons. They should cover, inter alia, the organization, procedures, safety, basic command concepts, control of risk and necessary training requirements. Manuals and training programs for all systems should accompany the regulations. Any complex system must have rigorous handling regulations, including methods for training and procedures for use.

Measures to ensure human control should be considered in the entire life cycle of a weapons system. The specific measures will be context dependent. A system’s type of target as well as spatial and temporal limits are likely to be important factors.

In the development of regulations, procedures, manuals and training programs, the human-machine interaction and its limitations need to be taken into account. In the legal weapons review process (“Article 36”), an analysis must be performed to ensure that it will be possible to use a given weapons system in compliance with IHL. This analysis should include aspects of human-machine interaction and the ways in which they are addressed in manuals and training programs.

The more precise requirements of human control in various contexts still need to be analysed, understood in practical terms and agreed.

(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;

See principles (a) and (b).

(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;

States have an obligation under international law (article 36 of AP I) to determine whether the employment of a new weapon would be prohibited under international law. In Sweden, this is carried out by the Delegation for International Humanitarian Law Monitoring of Arms Projects. All defence-related authorities must, without delay, report to this delegation any proposed project that involves the study, development, procurement or modification of weapons or methods of warfare.

In a review in accordance with article 36, the characteristics of the weapons system are examined, as well as its planned use and other relevant aspects. In case of doubt or scientific uncertainty, the examining entity could request further information and/or apply further test methods. The examining entity is then to issue a decision that approves or rejects the weapons system or method under review. It could also issue strict requirements for modifications or limitations that would bring the system in line with the requirements of international law.

Information is available on a number of national legal review systems that could assist HCPs wishing to create a system for legal weapons reviews or to examine an existing system.

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

Risk assessment and corresponding mitigation measures are part of the development of all advanced weapons systems. The processes of procurement, maintenance and use of such systems should be controlled by elaborate safety procedures. The procedures should be documented in handbooks on safety from different perspectives, ranging from questions about explosives and ammunition to software quality.

(i) In crafting potential policy measures, emerging technologies in the area of lethal autonomous weapons systems should not be anthropomorphized;
Describing technical systems in a non-technical context is a challenging task. Using adjectives normally used to describe human behaviour easily causes confusion and a risk of drawing inaccurate conclusions about technical systems, that do not possess human qualities. To avoid this, only strictly technical terms should be used.

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;

Although peaceful uses of technology are not within the scope of the CCW, the following may be noted: The overlap between the civilian and military spheres regarding technology development is significant and appears to be increasing. This creates a mutual dependency. If a new technology is adapted for military use, the requirements for robustness and reliability of the system need to be set very high.

Technological progress in e.g. automation, autonomy, artificial intelligence and digitalisation/computerisation, is normally common to the military and the civilian spheres, although often driven by civilian (commercial) interests. The challenges of ensuring meaningful control are almost the same for technical systems that may be dangerous (civilian applications) and systems designed to be dangerous (weapons).

k) The CCW offers an appropriate framework for dealing with the issue of emerging technologies in the area of lethal autonomous weapons systems...

The CCW offers an appropriate framework for the issues of emerging technologies in the area of lethal autonomous weapons systems for several reasons. The participation of experts from several relevant disciplines, as well as representatives from states, civil society and industry, provides a richness of perspectives. Looking forward, the work needed to increase the common understanding of the concept of human control in relation to legal, military and technological aspects is a challenge. Experts from all HCPs need to be part of the effort, including from the HCPs who possess the most advanced capabilities in this area.