Group of Governmental Experts
Lethal Autonomous Weapons Systems
Convention on Certain Conventional Weapons
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Statement by Ireland
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Agenda Item 5 (c): Further consideration of the human element in the use of lethal force; aspects of human-machine interaction in the development, deployment and use of emerging technologies in the area of lethal autonomous weapons systems

Mr Chair,

Ireland has retained a consistent position in our discussions on the need to ensure a human element in the use of force expressed in a variety of ways including, meaningful human control or effective human control. It is only by retaining human agency in the decision to use force that we can we ensure full compliance with International Humanitarian Law (IHL).

At the heart of discussions on the human-machine interaction is a complex debate about the idea or concept of autonomy, and the degree or appropriate level of machine-autonomy. Autonomy in the context of weapon systems may be considered a technical concept rather
than a legal or ethical one in the first instance; however, the question of the degree of machine autonomy in the use of force raises ethical, moral and legal considerations.

In our interventions to date, we have tried to avoid the more technical discussions on machine autonomy which relate to the actual or future capability of a system to exercise control over its own behaviour (self-governance) and deal with uncertainties in its operating environment. Instead, we have always considered autonomy as it relates to the extent to which humans are involved in the execution of the tasks carried out by the machine, including the programming of such tasks.

The term ‘autonomy’ suggests a level of independence which in practice can vary from zero to full autonomy. The degree of machine autonomy along this spectrum - and therefore the degree to which human control is absent from key decisions - would seem to go to the heart of our deliberations. It was clear from our discussions last year that there is now broad agreement that human control must be retained throughout the full life-cycle of weapons systems and in particular in critical functions such as target selection. This is a positive development within context of trying to progress our mandate.

Mr Chair,

It is our view that we should focus our discussions this week on the type and degree of human involvement required to ensure that possible emerging weapons systems, with an increasing level of autonomous functions, are compatible with the requirements of international law, in particular IHL. Control exercised by humans can take various forms and degrees at different stages of development, deployment and use.

Aside from fully autonomous weapon systems, the degree of autonomy assigned to a weapon system may be shaped by a number of factors including the type of information programmed into the machine. Autonomous capabilities are generally achieved through means of algorithm based software programming. In this context, we should be mindful that social biases have a potential impact on emerging technologies including in the possible
development of autonomous weapons systems. For example, we should be aware of the risk that algorithms could perpetuate or amplify social biases, such as gender bias.

Another factor determining the degree of autonomy in action may be the range of instructions given to the machine and the general constraints imposed on the machine by a human operator in their efforts to ensure compliance with IHL. These issues primarily relate to the input variables or general constraints provided by the human to the machine to undertake a specific ‘bounded’ action, but as we move along the autonomy spectrum we will confront difficult questions such as systems that can self-initiate attacks, or redefine-operational aims (previously set by a human operator) and the self-selection of specific targets. In these cases, ensuring human control will become increasingly challenging and important.

Autonomy in weapons systems can be exercised in a number of dimensions such as time, where a weapon is autonomous for a pre-set time period, in space where its range of deployment is limited to a pre-determined space and in functionality where only certain functions are delegated to the AWS. The term ‘boxed autonomy’ has been used to describe this model of limited autonomy where the autonomy of the weapon system is bounded in various dimensions which together comprise a ‘box’. The requirements of IHL should prevent such a box becoming too large by imposing limits on the degree of autonomy permitted in each dimension. This model could be a useful tool in measuring the effectiveness of existing IHL in dealing with the challenges of autonomy and identifying whether there is a need for new IHL provisions to ensure human control over decisions on the use of force.

Ultimately, it is our view that the concept of human control should mean that a human being should be the sole decision maker in the targeting process and a human being should remain the ultimate authority when deciding to execute an attack.

Thank You.