

**Group of Governmental Experts  
Lethal Autonomous Weapons Systems  
Convention on Certain Conventional Weapons  
Geneva, 27-31 August 2018**

**Ireland's Intervention**

**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 (agenda item 6 b)**

Mr Chair,

As this is the first time that we take the floor, I would like to start by thanking you for your skilful chairmanship of the Group of Governmental Experts on LAWS to date / and express our continued support for our important work under the framework of the Convention on Certain Conventional Weapons (CCW).

Mr. Chair,

Ireland aligns itself with the statement made by the European Union, and would like to add the following in a national capacity. 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 a myriad of ethical, moral and legal questions.

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.

As we raised during our meeting last April, 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 agency is absent from key decisions - would seem to go to the heart of our deliberations. The decision by the Chair to present the 'sunrise' slide and introduce the concept of touch-points in the human-machine interface in the area of LAWS has helped to guide our deliberations in a practical way. It was clear from our discussions in April 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 the 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.

Aside from fully autonomous weapon systems (which we all accept don't exist yet), 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. The algorithmic foundation for autonomous weapon systems also raises the important question of ensuring fairness in algorithms. Regarding the development of autonomous weapon systems, and the execution of their critical functions, we believe that the possibility for the perpetuation or amplification of social biases - such as gender bias - warrants careful consideration.

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.

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 strike element of the targeting process and a human being should remain the ultimate authority when deciding to execute an attack.

Thank you, Mr. Chair