

COMMENTARIES ON NATIONAL IMPLEMENTATION OF THE GUIDING PRINCIPLES ON LAWS

Spain is glad to meet the request from the President of the Group of Governmental Experts on LAWS about national views on the operationalization of the guiding principles at the national level in order to contribute to the discussion on the understanding and interpretation of these principles.

The main ideas that underlie the guiding principles are the commitment with IHL principles and the human responsibility in the compliance with those principles. At this point, Spain reiterates that the respect of IHL requires sufficient human control on all weapons systems, as well as an attribution of legal responsibility to the operator and the person who orders their use. As a general rule, each engagement decision must be taken under the authority of an accountable commander and the weapon system itself must be under the control of an accountable operator.

Besides, human control over a weapon system should not be limited to its deployment and use in the battlefield. Human beings are involved in different capacities throughout the life cycle of the weapon system, including the training of commanders and operators, research and development (R&D), as well as the weapon testing and certification. As a result, human control should be ensured across the weapon system's life-cycle, from initial planning, R&D and certification to deployment.

- First phase: Planning and R&D

To start with, States should assess, through legal reviews of new weapons and new methods of warfare, whether the level of human involvement in the new system would violate IHL. In case a legal review identifies a use that might be problematic, doctrine and training are recommended to be drafted and implemented in such a way that they allow the weapon to be used properly and in compliance with IHL.

During the R&D process, systems should be conceived in a way that provides operators with a sufficient amount of human understanding in order to achieve adequate awareness of the situation-. This would also allow to obtain an account of the reasons why the machine is suggesting or going to take a specific course of action. Additionally, the design must take into consideration a function allocation procedure that allows each step in the targeting cycle to be identified and to specifically assign it to either a human or a machine.

Machines should be extensively tested during the R&D phase. Frequent feedback from actual users, in conditions close to real-life ones during system deployment is also crucial. Validation process should also be extensive in order to ensure that machines meet the required specifications and fulfill their intended mission. Additionally, systems need to be proofed against spoofing techniques and cyber or electronic attacks. Otherwise, they couldn't be deemed feasible from an operational perspective.

- Second phase: Weapon use

Once the weapon has been certified for service, the High Command of the Armed Forces will decide on the limits and the way it can be used (with different levels of automation). In order to do so, the High Command of the Armed Forces relies on the assistance provided by its legal

advisers. The definition of the limits and the way to use the weapon will depend on the nature of the overall mission, the type of tasks to be executed during the mission and the evolution of the mission's circumstances, resulting in a specific doctrine with potential operational modes, identification of exclusive control privileges for human operators and limits to the system usage in specific situations.

This operational guidelines must take into account the risks associated with system autonomy such as automation bias, low level of trust and out-of-the-loop problems. The operational guidelines must also foresee some provisions concerning the training of operators and work procedures, among other.

Once deployed, the system could potentially record every decision it takes. This allows for a post-use assessment by users.

Autonomy may serve very different capabilities in different weapon systems including mobility, targeting, intelligence, interoperability and health management. Some of them may not pose significant ethical or legal risks (e.g. navigation), while others, such as targeting, can be a source of concern. The targeting process requires a complex assessment to ensure that an attack takes place in compliance with the principles of IHL in the conduct of hostilities: distinction, proportionality and precaution in the attack.

-Third phase: Modes of use

In order to identify which modes of use are appropriate according to the mission developed by the system and ensure the respect of IHL principles, it would be worthy to establish a set of rules that bridge the gap between these principles and the specific use of certain sorts of weapon systems. The type of human-machine shared control legally required should be established on each single use of a weapon system.

Spain privileges a human-in-the-loop mode of engagement as a general rule, especially during complex operational environments. These situations would require humans to remain as recipients of tactical information and to behave as decision-makers. These situations demand some qualitative assessments in order to ensure the compliance with the law. And these assessments cannot be reasonably conducted by a weapon system. In these tactical situations, the operator/commander must have sufficient understandable information to distinguish combatants from noncombatants, to determine that the military objectives outweigh harm or risks to noncombatants and civilian objects, and to respect all other applicable rules of International Humanitarian Law.

Loitering weapons are the only offensive type of weapon that is known to be capable of autonomously acquiring and engaging targets. However, loitering times, geographical areas of deployment as well as categories of targets to potentially be attacked are elements determined in advance by humans. Therefore, humans can exercise meaningful control.

Human supervision and veto level (human-on-the-loop) might be deemed as an acceptable level of control in the case of weapons systems with exclusively defensive functions. This is the case of certain strictly defensive systems, where human safety is at stake and where human

reactions are too slow for an effective response. These include missile and artillery interception systems which defend human-inhabited vehicles or locations, such as Iron Dome, CIWS or Active Armor Protection Systems.

By enforcing meaningful human control on some of these modes of operation we can mitigate the risk that autonomy in weapon systems implies in the acceleration of the pace of war.

Human-out-of-the-loop weapons, capable of selecting targets and using the force without any human input or interventions, should be considered incompatible with the meaningful human control requirement. This type of weapons raises concerns about States or non-State actors that may take little consideration for International Law. Since they overlook collateral damage, they would be likely to embrace operational concepts where humans would have little control over the use of weapons.

Finally, regarding transparency and exchange of information, voluntary exchange of experiences and good practices regarding the control policy implemented in different weapon systems can be a measure towards better transparency and trust. Additionally, for a future political declaration and a politically binding code of conduct, the determination of a set of rules can be explored. These could establish which autonomous modes of use are appropriate in relation to the mission developed by the system, in order to ensure the respect of the IHL principles.