



CCW EXPERT MEETING

LETHAL AUTONOMOUS WEAPON SYSTEMS (LAWS)

Geneva 13 – 16 May

Statement on Legal Aspects by Ambassador Michael Biontino

May 14, 2014

Mr. Chairman,
Distinguished Colleagues,
Ladies and Gentlemen:

It is incontrovertible that the law of armed conflict applies to autonomous weapon systems.

When determining the overall lawfulness of a weapon system, there are two distinct aspects of the law that need to be analyzed: *(i)* weapons law and *(ii)* targeting law. The former verifies that the weapon itself is lawful. The latter determines whether the use of the weapon system during hostilities might be prohibited in some manner under the law of armed conflict. A weapon must satisfy both aspects before it may be lawfully used on a battlefield.

Weapons Law

When analyzing whether the weapon system itself is lawful, there are two distinct rules that apply:

(i) The first rule, found in Article 51(4)(b) of the 1977 Additional Protocol I to the 1949 Geneva Conventions, is that the weapon system must not be indiscriminate by its very nature. A weapon is deemed indiscriminate by nature if it cannot be aimed at a specific target and would be as likely to strike civilians as combatants. This rule is considered to be reflective of customary international law. Accordingly, all States, even those not party to the Protocol, are bound to comply with this customary law rule against indiscriminate attack. The mere fact that an autonomous weapon system rather than a human might be making the final targeting decision would not render the weapon indiscriminate by nature. Instead, as long as it is possible to supply the autonomous system with sufficiently reliable and accurate data to ensure it can be aimed at a military objective, the system would then not be deemed indiscriminate by

nature. In the end, any proposed autonomous weapon system must comply with this provision to be lawful.

(ii) The second rule, enshrined in Article 35(2) of Additional Protocol I, prohibits employment of a weapon system which causes unnecessary suffering or superfluous injury. This rule, which is also reflective of customary international law, seeks to prevent needless injuries to combatants. This rule only presents a problem for an autonomous system, if the specific warheads or weapons installed on the system would violate the rule. The fact that the system autonomously decides to engage a target does not itself affect or violate the prohibition on unnecessary suffering or superfluous injury. To potentially be deemed lawful, a fully autonomous weapon system must only be armed with weapons and ammunition that comply with this rule.

To verify compliance with the two rules listed above, a State intent on fielding a new weapon must conduct a thorough legal review. This requirement for a legal review, which appears in Article 36 of Additional Protocol I, ensures that the weapon is not indiscriminate and that it would not cause unnecessary suffering or superfluous injury. The review also determines whether there is any other particular provision under the law of armed conflict which would prohibit the use of the weapon. Customary law requires this legal review of weapons and weapon systems (referred to as the “means of warfare”), and these reviews are thereby required by all States, including those not party to the Protocol. Furthermore, if a weapon system is significantly modified after its initial fielding, an additional review would then be necessary. The development of any fully autonomous weapon system would clearly require such legal reviews.

Targeting Law

Assuming the particular weapon satisfies the above weapons law rules, the weapon must still be examined under targeting law to determine whether the actual use of the weapon might be prohibited in some manner. To conduct this analysis, three core law of armed conflict requirements are particularly salient: (i) distinction, (ii) proportionality, and (iii) precautions in the attack.

A weapon system, even one deemed lawful under the tenets of weapons law mentioned previously, may not be lawfully used if, based on the circumstances, its use would violate any one of these three requirements.

(i) The first requirement is distinction, a principle codified in Article 48, in conjunction with Articles 51 and 52, of Additional Protocol I. Distinction is the most fundamental principle of the law of armed conflict. A customary law principle, distinction obliges a combatant to distinguish between combatants and civilians, as well as between military and civilian objects. Indeed, a combatant would have to be able to distinguish not only between combatants and civilians, but also, for instance, between active combatants and those *hors de combat*, and between civilians directly participating in hostilities on the one hand, and armed civilians such as law enforcement personnel, on the other hand (the latter remaining protected against direct attack). This principle aims to protect the civilian population by directing military attacks against military targets only. The context and environment in which the weapon system operates play a significant role in this analysis. There may be situations in which an autonomous weapon system could satisfy this rule—notably when the necessity to be able to distinguish between civilian and military targets is

considerably low, which might be the case during high intensity hostilities that occur in remote regions, such as under water or in deserts. At other times, such as on a complex counterinsurgency-type battlefield or in an urban environment, the demands on the systems to distinguish would be drastically higher. In the latter situations, even autonomous systems equipped with the most robust sensor packages may have difficulty fulfilling this requirement, considering that decision-making in such situations is also most difficult for humans. Ultimately, for the use of an autonomous weapon system to be lawful, the system would be expected to reasonably distinguish between combatants and civilians (and between military objectives and civilian objects) given the particular environment and circumstances of the battlefield ruling at the time.

(ii) The second requirement, proportionality, requires combatants to examine whether the expected collateral damage from an attack would be excessive in relation to the anticipated military gain. This complex principle—codified in both Article 51(5)(b) and Article 57(2)(iii) of Additional Protocol I—is reflective of customary international law and has traditionally involved a human judgment call evaluated on the basis of reasonableness. In order to comply with this principle, autonomous weapon systems would, at a minimum, need to be able to estimate the expected amount of collateral harm that an attack might cause to civilians. Additionally, if civilian casualties were likely to occur, the autonomous systems would need to be able to compare the amount of collateral harm against some predetermined military advantage, in other words the value of the target. This step may present a significant challenge for autonomous weapon systems. The military advantage of a particular target is extremely contextual, and its value can change rapidly based upon developments on the battlefield. Human operators may be able to develop sliding scale-type mechanisms which regularly update and provide the autonomous weapon system with the relative military advantage value of a given target. Operators might also help fulfill this principle by detailing strict Rules of Engagement for these systems and establishing other controls, such as geographic or time limits on use. Nevertheless, these complicated issues would need to be resolved, if the future use of autonomous weapon systems is to comport with the principle of proportionality.

(iii) The third core requirement is the obligation to take feasible precautions in the attack. These precautions, which are customary in nature and codified in Article 57 of Additional Protocol I, present certain challenges to autonomous weapon systems. One such challenge will be the requirement to do everything feasible to verify that a target is a military one. Feasible, in this context, generally means “that which is practicable or practically possible, taking into account all circumstances prevailing at the time, including humanitarian and military considerations.” There may be times where the robust recognition capabilities of an autonomous system would be more precise (and, thus, more reliable) than a human in fulfilling this requirement. In other cases, depending on the circumstances (and what is practically possible), a party to the conflict may have to augment the autonomous system with other sensors to help verify the target. Another significant challenge is the requirement to do everything feasible to choose a means of attack “with a view to avoiding, and in any event minimizing,” collateral damage. This precaution may, under certain circumstances, preclude the use of an autonomous system if a different type of a system would better protect civilians. With all of the required precautions in attack, there is inherently a value judgment

about whether all feasible steps have been taken. How autonomous systems will reasonably make this value judgment may prove to be one of the biggest challenges in terms of compliance. Ultimately if a party to the conflict intends to use an autonomous weapon system on a battlefield, it must ensure that the system can adequately take these feasible precautions.

Command Responsibility

Weapon systems may not be used in fully autonomous modes yet and likely will not be able to be used in that mode for a number of years. Until then, they will not be able to conduct either distinction or proportionality analyses. Thus, these functions must be left to the human commanders and targeteers. However, autonomous weapon systems may be used in semi-autonomous, or fully automatic, modes where they engage targets previously identified by a commander who can conduct the required targeting analyses. This, in turn, not only highlights the importance of command responsibility. Rather, it would appear that command responsibility—as well as *respondeat superior*—have a wider scope in the context of weapon systems autonomously deciding to engage a target.

Concluding Remark

In this debate, which is often infused with policy, morality, or ethical arguments, it is important for international law practitioners to distinguish those arguments from the legal ones. The above rules outline the basic legal standards a weapon must meet to be deemed lawful. They fully apply to autonomous weapons. **Germany recognizes the strategic imperative to demonstrate that new weapons adhere to existing legal standards.**