
U.S. Delegation Statement on “Weapon Reviews” as delivered by Michael Meier

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Thank you Mr. Chairman. We would like to join others in thanking the panelists today for their informative and excellent presentations.

We would like to take this opportunity to share our views on what a comprehensive weapon review process should entail for weapons with autonomous functions. To be clear, when I refer to a weapon review process, I am referring to more than a legal review of a weapon system. Rather, I am referring to a comprehensive weapon acquisition process that includes the requirement for a legal review, but also extends to additional policy reviews specific to autonomous weapon systems.

Our defense acquisition process looks at weapon systems holistically to help ensure that weapons are safe, predictable, and can be used in compliance with international humanitarian law or IHL. It considers the entire life cycle of the weapon and can be generally divided into five major phases. Those phases consider: the requirements for the weapon system; analysis and evaluation of the technology performance; engineering and manufacturing; production; and operations and support. Safety is considered throughout each of the five phases of the acquisition system. Weapons that have critical safety functions in any aspect are subject to additional scrutiny through appropriate weapons review boards. These boards are comprised of experts to evaluate weapon systems against industry and government standards and to develop and apply best practices.

Weapon systems that have certain autonomous functions are subject to this defense acquisition process, as well as additional reviews to ensure that the design allows the exercise of appropriate levels of human judgment in their use. Department of Defense Directive 3000.09, Autonomy in Weapon Systems, requires two separate reviews by senior officials prior to the formal development and fielding of weapon systems with certain autonomous functions. The first such review occurs before a weapon system enters formal development. At that stage, senior officials must ensure that (and I am quoting from the Directive):

- “The system design incorporates the necessary capabilities to allow commanders and operators to exercise appropriate levels of human judgment over the use of force”;
- “The system is designed to complete engagements in a timeframe consistent with commander and operator intentions, and if unable to do so, to terminate engagements or seek additional human operator input before continuing the engagement”;  
- “The system design . . . addresses and minimizes the probability and consequences of failures that could lead to unintended engagements or to loss of control of the system”, which would include a review of safeties, anti-tamper mechanisms, and information systems security;  
- “Plans are in place for [verification and validation,] and [operational test and evaluation] to establish system reliability, effectiveness, and suitability under realistic conditions, including possible adversary actions, to a sufficient standard consistent with the potential consequences of an unintentional engagement or loss of control of the system”; and
“A preliminary legal review of the weapon system has been completed.”

In the second phase, before fielding of such a weapon system, senior officials will also ensure:

- The design requirements that I just mentioned have been implemented to standard;
- The verification and validation, and operational test and evaluation adequately assess system performance, capability, reliability, effectiveness, and suitability under realistic conditions;
- “System capabilities, human-machine interfaces, doctrine, [tactics, techniques, and procedures, also known as TTPs], and training have demonstrated the capability to allow commanders and operators to exercise appropriate levels of human judgment in the use of force and to employ systems with appropriate care and in accordance with the law of war, applicable treaties, weapon system safety rules, and applicable ROE (or rules of engagement)”;
- “Adequate training, TTPs, and doctrine are available, periodically reviewed, and used by system operators and commanders to understand the functioning, capabilities, and limitations of the system’s autonomy in realistic operational conditions”;
- “System design and human-machine interfaces are readily understandable to trained operators, provide traceable feedback on system status, and provide clear procedures for trained operators to activate and deactivate system functions”; and finally,
- “A legal review of the weapon system has been completed.”

Thus, under the Directive, weapon systems with certain autonomous functions get two legal reviews instead of one review—one review before formal development and one review prior to fielding.

The review of the acquisition or procurement of a weapon for consistency with U.S. IHL obligations should consider three questions to determine whether the weapon’s acquisition or procurement is prohibited:

1. whether the weapon’s intended use is calculated to cause superfluous injury;
2. whether the weapon is inherently indiscriminate; and
3. whether the weapon falls within a class of weapons that has been specifically prohibited.

If the weapon is not prohibited, the review should also consider whether there are legal restrictions on the weapon system’s use that are specific to that type of weapon. If any specific restriction applies, then the intended concept of employment of the weapon should be reviewed for consistency with those restrictions.

Lastly, a legal review should consider whether other measures should be taken that would assist in ensuring compliance with IHL obligations related to the type of weapon being acquired or procured. For example, it may be appropriate to advise on the need for training programs and other practical measures, such as promulgating doctrine and rules of engagement related to that type of weapon.

With respect to potential LAWS, reviewing a weapon system to ensure that it is sufficiently predictable and reliable takes on a particular significance. Appropriate system design and safeties, rigorous hardware and software verification and validation, and realistic system developmental and operational test and
evaluation could enhance compliance with IHL. These processes help establish system reliability, effectiveness, and suitability under realistic conditions, including possible adversary actions, and minimize the probability or consequences of an unintentional engagement or loss of control of the system.

Speaking more broadly, I would note that IHL does not specifically prohibit or restrict the use of autonomy to aid in the operation of weapons. In fact, in many cases, the use of autonomy could enhance the way IHL principles are implemented in military operations. For example, some munitions have homing functions that enable the user to strike military objectives with greater discrimination and less risk of incidental harm. Improving the performance of weapons is one area in which the interests of military effectiveness and humanitarian interests coincide.

Mr. Chair, I would like to express my appreciation for including the weapon review topic during this meeting. The United States considers that these discussions should include, as an interim step, the development of best practices for a comprehensive weapons review process for weapon systems with autonomous functions, including potential LAWS. This could be a concrete and significantly positive step forward and a worthy contribution of the CCW to the international discussion of such weapon systems. Thank you.