

Statement on Technical Challenges with regard to LAWS

Agenda item 5 (b) Characterization of the systems under consideration in order to promote a common understanding on concepts and characteristics relevant to the objectives and purposes of the Convention

The International Panel on the Regulation of Autonomous Weapons (Twitter @iPRAW_org) delivered by Elisabeth Hoffberger-Pippan (Twitter @ehoffbergerp) on September 27th, 2021

Thank you, Chair, for giving me the floor.

The International Panel on the Regulation of Autonomous Weapons, is a group of 15 independent international researchers from different academic backgrounds, ranging from lawyers, political scientists, military experts, philosophers and engineers.

Only recently, iPRAW submitted another report called “the Building Blocks for a Regulation of LAWS and Human Control, available online but which can also be found on paper in the back corner of this room. The report consists of three different building blocks. Building Block I refers to the various challenges that arise with regard to LAWS, whereas Building Block II addresses the concept of human control over the use of force. Building Block III then proceeds to discuss various options for a potential regulation of LAWS. After various deliberations regarding technological aspects with regard to LAWS have already been made in this room with very helpful and excellent contributions, iPRAW would also like to make a few comments, which are mainly derived from Building Block No. 1. Autonomous functions in weapon systems are based on various enabling technologies including sensors, processors, and software. Most prominent are data-driven techniques, like AI and machine learning. Even though a regulation of LAWS should focus on the human role, understanding the options and limitations of enabling technologies is crucial. Indeed, by integrating, processing, and analyzing large amounts of data quickly, AI-enabled technologies can offer useful decision support and might furthermore allow for new operational options. In some instances, the application of computational methods in the targeting process can lead to better outcomes than human performance alone would.

Nevertheless, our three scenario-based workshops, which were held in 2020 and 2021 respectively, showed the various limitations of computational methods as enabling technologies in the military domain and highlighted that they cannot replace the unique judgment of human decision-makers, understood as “the ability to evaluate and combine numerous contextual sources of information”. In short, machines do not have the same cognitive capacities as humans and might not be able to detect slight nuances in e.g. human behavior, especially not in dynamic combat operations. Furthermore, any complex computational system consists of modular subsystems, each of which has inherent limitations and points of failure. Applying multiple computational systems across each step of the targeting cycle may result in cumulative failures that can be hard to anticipate and lead to hazardous and undesired outcomes. Any system that executes sequential processes, such as selecting and engaging targets, can be subject to path dependencies where errors or decisions, in any step, can propagate and reverberate throughout the rest of the targeting process.

Thank you very much, Chair.