



# CAMPAIGN TO **STOP** KILLER ROBOTS



## Report on Activities

Convention on Conventional Weapons Informal Meeting of Experts on  
Lethal Autonomous Weapons Systems  
Geneva  
13-16 May 2014

## **About this report**

This report on activities describes outreach by the Campaign to Stop Killer Robots in the lead-up to and during the first multilateral meeting ever held on fully autonomous weapons or “killer robots.” The informal meeting of experts on lethal autonomous weapons systems was held by the Convention on Conventional Weapons (CCW) at the United Nations (UN) in Geneva on 13-16 May 2014.

This report was prepared by Campaign to Stop Killer Robots coordinator Mary Wareham of Human Rights Watch. It reviews the proceedings of the four-day meeting, providing summaries of the national statements available online from the UN and WILPF’s Reaching Critical Will websites. It draws on extensive notes taken during the experts meeting by Wareham, Bonnie Docherty of Human Rights Watch and Harvard Law School’s International Human Rights Clinic and her students Joey Klingler and Evelyn Kacheje, and the team at WILPF’s Reaching Critical Will project, including Ray Acheson and Beatrice Fihn.

Three key documents from the experts meeting are annexed: a summary of country statements, the Campaign to Stop Killer Robots delegation list, and a selection of media coverage of the meeting. Please see Reaching Critical Will’s [CCW Reports](#) for additional reporting on the plenary deliberations and four Campaign to Stop Killer Robots side events. Our website has more information too: [www.stopkillerrobots.org](http://www.stopkillerrobots.org).

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Washington DC  
16 September 2014

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# Report on Activities

## 1. Overview

The first multilateral meeting ever held on the topic of “killer robots” took place at the United Nations in Geneva on 13-16 May 2014. The mandate of the first Convention on Conventional Weapons (CCW) informal meeting of experts was to “discuss the questions related to emerging technologies in the area of lethal autonomous weapons systems.” See the provisional [agenda](#) online.

The Office for Disarmament Affairs CCW implementation support unit described the 87 nations participating in the CCW experts meeting as “record turn-out” for such a meeting. The strong interest shows that fully autonomous weapons raise significant concerns amongst governments, international organizations and civil society alike. During the meeting a few states delivered vague statements that appeared to seek to leave the door open for future technologies, but none openly said they are pursuing the development of fully autonomous weapons. No country vigorously defended or argued for the weapons although Czech Republic and Israel each spoke on the desirability of such systems.

The meeting of experts was characterized by a positive atmosphere and high-degree of engagement by governments and NGOs alike. Over the course of the four-day meeting dozens of nations intervened to provide detailed national statements, make comments and react, and ask questions. This happened in the opening and closing session as well as following expert presentations in thematic sessions on technical, ethical, legal, and operational concerns. Unlike previous CCW meetings, every available minute was used up – there were no breaks or late starts/early finishes with the exception of the final afternoon, which concluded an hour early at 5.00pm.

Roboticists, scientists, activists, academics and others from the Campaign to Stop Killer Robots featured prominently at the experts meeting. Its delegation to the CCW meeting was comprised of 40 campaigners from a dozen members in countries including Austria, Canada, Germany, Japan, the Netherlands, Switzerland, UK, and US. The Campaign to Stop Killer Robots held daily side events, delivered plenary statements and asked questions. Its active contribution was commended by many government delegations.

The global coalition’s call for a pre-emptive ban on fully autonomous weapons was central to the deliberations and five nations explicitly called for a ban on fully autonomous weapons during the meeting: Cuba, Ecuador, Egypt, Holy See and Pakistan. A preemptive ban is listed as one possible ways forward by the chair’s report on the meeting. There were numerous references to the precedent set by CCW Protocol IV, which preemptively banned blinding lasers in 1995.

The imperative of maintaining meaningful human control over targeting and attack decisions emerged as the primary point of common ground at the meeting. Most nations that spoke highlighted the importance of maintaining meaningful human control over targeting and attack decisions, including [Austria](#), [Croatia](#), France, [Germany](#), Ireland, Mexico, Netherlands, [Norway](#) and [Switzerland](#), and the UK. The

US spoke about the DoD policy requiring “appropriate” levels of human judgment over the full range of activities involved in the development and use of such weapons.

There was acknowledgment that international humanitarian and human rights law applies to all new weapons with views still divided as to whether the weapons would be illegal under existing law or if their use in certain circumstances would be permitted. There was a robust debate about whether existing international law can prevent the proliferation and use of fully autonomous weapons or address ethical, moral and societal expectations on the question of human dignity and whether machines should be permitted to take a human life. There were numerous references to the Martens Clause, the principle of humanity and the dictates of the public conscience.

Four countries that have not previously spoken on the topic contributed for the first time on the matter at the CCW experts meeting: Czech Republic, Guatemala, Mali, Norway. This makes a total of 48 nations that have now given their views on the topic of fully autonomous weapons, but the CCW meeting of experts showed how few nations have developed national policy on the matter yet.<sup>1</sup>

France’s Ambassador Jean-Hugues Simon-Michel [chaired](#) the meeting and has the sole responsibility of reporting back to the CCW’s November 2014 meeting of states parties on what happened at the experts meeting and where to go next. His chair’s report reflects this emerging consensus around the concept of meaningful human control which many delegations said could be useful to address the question of autonomy. As CCW high contracting parties consider the next mandate for work on this issue, the concept of meaningful human control could provide a firm basis for continued discussions.

A decision on whether to proceed to continue the process in accordance with the current mandate or take it to another level of discussion will be taken by nations on 14 November 2014 at the annual CCW meeting to be chaired by Poland’s Ambassador Remigiusz A. Henczel. The Campaign to Stop Killer Robots has recommended more substantive and formal discussion in the form of a Group of Governmental Experts.

## **2. Lead-up**

States participating in the annual meeting of the Convention on Conventional Weapons in November 2013 agreed to begin a process to consider “lethal autonomous weapons systems.” The rare diplomatic consensus in a traditional multilateral disarmament forum on a new topic came swiftly, exactly one year after Human Rights Watch issued *Losing Humanity*—the first in-depth report by a non-profit organization

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<sup>1</sup> During 2013, a total 44 states spoke publicly for the first time on fully autonomous weapons (date of first statement): Algeria (30 May), Argentina (30 May), Australia (14 November), Austria (30 May), Belarus (14 November), Belgium (11 November), Brazil (30 May), Canada (11 November), China (30 May), Costa Rica (29 October), Croatia (15 November), Cuba (30 May), Ecuador (29 October), Egypt (30 May), France (30 May), Germany (30 May), Ghana (14 November), Greece (29 October), Holy See (14 November), India (30 October), Indonesia (30 May), Iran (30 May), Ireland (29 October), Israel (15 November), Italy (14 November), Japan (29 October), Lithuania (14 November), Madagascar (14 November), Mexico (30 May), Morocco (30 May), Netherlands (29 October), New Zealand (30 October), Pakistan (30 May), Russia (30 May), Sierra Leone (30 May), South Africa (30 October), South Korea (14 November), Spain (11 November), Sweden (30 May), Switzerland (30 May), Turkey (14 November), Ukraine (14 November), UK (30 May), and US (30 May).

to outline concerns with fully autonomous weapons—and six months after the launch of the Campaign to Stop Killer Robots, the global coalition of NGOs calling for a preemptive ban on the weapons.

Killer robots were first discussed by nations in a multilateral setting on 30 May 2013, when the Special Rapporteur on extrajudicial, summary or arbitrary executions Professor Christof Heyns [presented his report](#) on lethal autonomous robots to the Human Rights Council. A total of 20 nations responded in the debate that followed, including a number—Brazil, France, Pakistan, Switzerland, the United Kingdom, and the United States—that called for the topic to be addressed by the Convention on Conventional Weapons (CCW).<sup>2</sup>

During the UN General Assembly First Committee on Disarmament and International Security in October 2013, sixteen nations expressed their support for taking up the topic of fully autonomous weapons in the CCW during their statements in New York. Ambassador Simon-Michel of France [proposed](#) that lethal autonomous robots be discussed by “an appropriate disarmament forum,” thereby signaling its intent to propose a mandate of work in the CCW’s annual meeting in 2013, which he would be chairing.

The decision by the Convention on Conventional Weapons to take on killer robots is contained in the final report of its annual meeting adopted by consensus on 15 November 2013:

The Meeting declared that the Chairperson will convene in 2014 a four-day informal Meeting of Experts, from 13 to 16 May 2014, to discuss the questions related to emerging technologies in the area of lethal autonomous weapons systems, in the context of the objectives and purposes of the Convention. He will, under his own responsibility, submit a report to the 2014 Meeting of High Contracting Parties to the Convention, objectively reflecting the discussions held.<sup>3</sup>

The consensus-based decision-making of the CCW meant the mandate could have been blocked by a single nation objecting so despite all the expressions and indications of support there was no certainty the mandate would be adopted. Its adoption was celebrated by activists around the world. In less than six months in 2013—from the first debate on the matter by the Human Rights Council until the decision by the Convention on Conventional Weapons to take up the matter—a total of 44 states spoke publicly for the first time on fully autonomous weapons.<sup>4</sup>

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<sup>2</sup> Algeria, Argentina (for GRULAC, the Latin American and Caribbean Group of 33 states), Austria, Brazil, China, Cuba, Egypt, [France](#), Germany, Indonesia, Iran, Mexico, Morocco, Pakistan, Russia, Sierra Leone, Sweden, Switzerland, UK, and US. There were also statements by the [European Union](#) (comprised of 27 states) and by [Pakistan on behalf of the Organization of the Islamic Conference](#) (56 states). See: <http://www.stopkillerrobots.org/2013/05/nations-to-debate-killer-robots-at-un/>

<sup>3</sup> See Final Report of the Convention on Conventional Weapons 2013 Meeting of the High Contracting Parties (CCW/MSP/2013/10) available at: <http://bit.ly/1jRKxvj>

<sup>4</sup> Algeria, Argentina, Australia, Austria, Belarus, Belgium, Brazil, Canada, China, Costa Rica, Croatia, Cuba, Ecuador, Egypt, France, Germany, Ghana, Greece, Holy See, India, Indonesia, Iran, Ireland, Israel, Italy, Japan, Lithuania, Madagascar, Mexico, Morocco, Netherlands, New Zealand, Pakistan, Russia, Sierra Leone, South Africa, South Korea, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, and the United States.

As soon as the CCW decision was taken a series of experts meetings began, which involved an array of representatives from governments, UN agencies, the ICRC, and civil society.

The meetings were convened within a matter of months in Europe and North America by a number of actors:

- The Geneva Academy of International Humanitarian Law and Human Rights and UNIDIR convened a meeting on armed drones and robots in Divonne, France on 3-5 December 2013;
- The US Naval War College held a workshop on the legal implications of autonomous weapons systems attended by armed forces representatives from the US, Australia, Canada, Israel, and UK on 6-7 February 2014;
- Chatham House held its first conference on autonomous military technologies in London on 24-25 February;
- The UN Secretary-General's Advisory Board on Disarmament Matters invited two representatives from the Campaign to Stop Killer Robots to brief it in New York on 5-7 March;
- Japan, Turkey, and Poland hosted a roundtable in cooperation with the Stimson Center on the next generation of weapons threats—including killer robots—in New York on 26 March;
- The International Committee of the Red Cross (ICRC) convened an experts meeting on autonomous weapons systems attended by 21 nations in Geneva on 26-28 March.

### **3. Meeting of Experts**

Representatives from 86 governments (74 [states parties and signatories](#) to the convention and 12 observer states) attended the CCW's informal meeting of experts in May 2014, as well as UN agencies including the UN Office for Disarmament Affairs and UNIDIR, the International Committee of the Red Cross (ICRC), and registered NGOs. Two dozen more nations registered, but did not show up.

#### **Opening**

The meeting of experts was opened by the chair-designate of the CCW's 2014 meeting of states parties, Poland's Ambassador Henczel, who then introduced the chair of the experts meeting, Ambassador Simon-Michel of France, who described his role as a "great honor."

The acting director-general of the UN Office in Geneva, Mr. Michael Møller, officially opened the experts meeting on the morning of 13 May with a [statement](#) that said "there can be no better forum" than the CCW for addressing the challenges posed by lethal autonomous weapons systems. Møller urged delegates to take "bold action" and proposed a proactive response, "You have the opportunity to take pre-emptive action and ensure that the ultimate decision to end life remains firmly under human control." In [a subsequent Huffington Post op ed](#), Møller again called for a preemptive ban on the weapons and commended the Campaign to Stop Killer Robots.

Ambassador Simon-Michel described the aim of the experts meeting to allow delegates to become better acquainted with the current situation with respect to lethal autonomous weapons systems. He outlined the agenda for the meeting, comprised of opening and closing statements with thematic sessions comprised of presentations by external experts to “kick-off” the deliberations. Ambassador Simon-Michel introduced diplomats from Brazil, Germany, Mali, and Sierra Leone who served as his “friends of the chair” chairing the sessions on ethical, technical, and legal issues respectively, while he chaired the session on operational and military aspects.

## **General Exchange of Views**

In the [general exchange of views](#) a total of 30 countries provided opening statements, while UNIDIR and the ICRC made statements before lunch and the nine NGOs went after the break.<sup>5</sup> See Annex I for summaries of interventions.

Most delegations said they understood lethal autonomous weapons systems to be future weapons not yet developed, but acknowledged the need to discuss them now. Norway said in its view such a system would “use lethal force to search, identify and attack targets without any meaningful human control.”

Four nations explicitly called for a ban on fully autonomous weapons during the general exchange of views: Ecuador, Egypt, Holy See and Pakistan. Others focused on the need to ensure human control over targeting and attack decisions, including Austria, Brazil, Germany, Norway, and Sierra Leone. The Czech Republic, Ireland, Japan, Mexico, South Africa, and Sweden were also positive in affirming the need for action to address lethal autonomous weapons systems.

A number of nations provided nuanced statements that did not indicate their national position, such as Croatia, India, Italy, Mali, New Zealand, South Korea, and the UK, while Australia, Canada, Russia, Spain, and US made relatively weak statements. A few nations were notably absent from the debate, including China and Israel.

All delegations welcomed the prospect of work on the topic in the CCW, but some said the CCW discussion shouldn’t preclude other UN bodies. Brazil pointed to the role of the Human Rights Council.

## **Technical presentations by Chatila and Scharre**

At approximately 4:00pm on the first day, the thematic session on technical issues began under the chairmanship of Germany’s Ambassador Michael Biontino. One and a half sessions were allocated to considering technical aspects in a session that concluded late the following morning. The main objective was to introduce autonomous technology and its uses today as well as the key elements that future lethal autonomous weapons systems could encompass and related issues of concern.

[Dr. Raja Chatila](#) from the Centre National de la Recherche Scientifique in France highlighted four basic concepts of autonomy: data collection through sensors, data

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<sup>5</sup> See Annex II for summaries and links to the country statements. The order of speakers was as follows: Ecuador, Mali, Pakistan, Brazil, Italy, Austria, Germany, Australia, Holy See, India, South Korea, Netherlands, Ireland, Switzerland, New Zealand, US, Japan, Egypt, Canada, Russia, Czech Republic, Mexico, Norway, Sweden, Sierra Leone, France, Croatia, UK, and South Africa.

interpretation, decision-making, and action execution. He added that all these capacities could be developed with various degrees of complexity. Dr. Chatila defined autonomous weapons as having the capacity of a system to “decide and act without the assistance of another agent.” He concluded that autonomy is a “relative notion” and cautioned that, “realistic complex tasks and dynamic situations require capacities for real time situation understanding and decision making not achievable in the near future.”

Mr. Paul Scharre from the Centre for a New American Security in the US asked “where does human belong in the loop?” and described how existing systems and technologies weapons to us think about autonomy in future. He said autonomous weapons are defined in different ways according to the level of human control, their complexity, and the tasks preformed. Mr. Scharre highlighted the need for states to develop “rules for the road” for appropriate use of autonomous weapons. He cautioned that CCW delegates “don't anthropomorphize machines” as they do not make “decisions” but rather they respond to inputs from the environment.

In the discussion that followed, Bosnia and Herzegovina, Canada, Chile, China, France, Japan, the Netherlands, Russia, Sierra Leone, and the US intervened.

- Canada said the definition of autonomy is difficult as it is subjective, depending on the system.
- In a statement, France said it is difficult and “premature” to engage in the exercise of writing a definition, but said for France the technologies of concern exclude existing systems that are automated or remotely controlled. It said, “autonomy implies lack of human supervision, a non-predictable actions and the capacity to adapt to a changing environment.” The weapon systems would involve the use of extremely complex technology namely artificial intelligence with self-learning abilities.
- Japan said it wants to develop a common understanding of the definition, including the difference between autonomy and atomicity, as the first step.
- The US noted varying degrees of autonomy in current weapons systems. On nomenclature, it pointed out that “weapons systems don't make decisions” rather human decision makers set the criteria for decisions and. Machines implement decisions made by humans by matching inputs they receive against criteria established by humans. It expressed interest in hearing more about the spectrum of autonomy and cautioned there are “no clean dividing lines.”

### **Technical debate by Arkin and Sharkey**

After the introduction to autonomy, the technical session heard a “debate” between two roboticists who have been arguing their opposing positions on the desirability of creating killer robots since 2010 and earlier. The stated aim of the debate was to highlight the possible advantages and disadvantages of lethal autonomous weapon systems.

[Prof. Ronald Arkin](#) from Georgia Institute of Technology in the US affirmed that it is the responsibility of scientists to “look for effective ways to reduce man's inhumanity to man through technology” and urged “research in ethical military robotics.” He described being human as “the weakest point in the kill chain” and said robots could

be faster and smarter than humans. “If properly developed and deployed” Arkin said this technology could save civilian lives as the weapons would “perform more ethically than human soldiers are capable of.” Prof. Arkin told the meeting that a ban on the weapons would be premature, but said the weapons systems should not be deployed unless they can comply with international humanitarian law and expressed support for the call for a moratorium “until we can agree upon definitions regarding what we are regulating, and it is determined whether we can realize humanitarian benefits.” Arkin said that broadly defined autonomous weapons already exist.

[Prof. Noel Sharkey](#) from the University of Sheffield (UK) and chair of the International Committee for Robot Arms Control (ICRAC) introduced the elements of an autonomous weapon. Despite decades of research and funding, he said there is still no reliable method for fully autonomous weapons to comply with the principle of distinction and in the foreseeable future the weapons would be incapable of complying with other key principles of existing international humanitarian law, such as proportionality, which requires the judgment of an experienced commander. There is no quantitative way to balance military advantage against loss of civilian life or damage to civilian property.

Professor Sharkey described the unreliability of computer systems and their vulnerability to external interference. He countered Professor Arkin’s speculative “dream” about the future potential of the technology as well as his view that a single nation would use the weapons in limited circumstances, by warning against large-scale investment, mass proliferation, and the unknown consequences of what will happen when different devices interact with one another. There is no way to determine the behavior of autonomous weapons in unanticipated circumstances against an adaptive enemy. Professor Sharkey offered a reframing of levels of autonomy in the ‘kill decision’ in terms of human control, outlining five levels of targeting supervision involving human control.

There was a period of silence when the floor was opened for questions as delegations contemplated the arguments presented. Then Nobel Peace laureate Ms. Jody Williams from the Nobel Women’s Initiative addressed Arkin’s argument for ethical weapons to protect human lives by asking “when has the military industrial complex ever created weapon specifically to reduce civilian casualties?” As to the “inevitability” of killer robots, Williams countered that robots might be inevitable but ceding life and death decisions to machines is not.

Other questions for Arkin came from China, Mali, Sierra Leone, and expert Mark Hagerott.

- China’s delegate responded to Arkin in his personal capacity, expressing concern that “we’re trying to design even more lethal ways of killing” and reminding nations that the first resolution issued by the UN General Assembly was on the goal of “general and complete disarmament.”
- Sierra Leone asked Arkin why the optimism about a machine being able to take human life?

The first day’s deliberations concluded at 6:05pm after Arkin was given the opportunity to respond.

Day two of the CCW experts meeting started just after 10:00am with a continuation of the session on technical issues, which was followed by session on ethical aspects and then legal considerations after the lunch break.

### **Technical presentations by Laumond, Wakudo, and Park**

Germany chaired the final technical panel by experts from France, Japan, and South Korea who all spoke in their personal capacity.

[Dr. Jean-Paul Laumond](#) from the Centre National de la Recherche Scientifique in Paris gave an overview of the state of developments in humanoid robotics. [Mr. Hajime Wakuda](#) from the aerospace and defense industry division at Japan's Ministry of Economy, Trade and Industry reviewed the elements of robotic technology and its dual-use in civilian and military applications. The final speaker Yong Woon Park, director of South Korea's agency for defense development, considered the trend towards autonomous robotic military technology.

Switzerland and the Czech Republic intervened afterwards.

- In a [statement](#), Switzerland's Dr. Quentin Ladetto, director of future technologies research at the Federal Department of Defence emphasized dual-use considerations of this technology, stating that the development of autonomous weapons will depend on a wide spectrum of advanced technology, going far beyond the question of military applications.
- The Czech Republic said it sees difficulties in prohibiting research into autonomous weapons because of the close links to civilian research in robotics. It suggested that we "think about strictly defined bans on certain operations" and said it would "agree to a human out-of-the loop search-and-destroy ban not with a prohibition on aircraft defense. The Czech Republic does not believe anyone will operate with purely man out of loop architecture as there is "a level of trust in any systems."

ICRAC also made a statement that "considerable improvements" in the technology are likely, but cautioned that the weapons' compliance with international humanitarian law "cannot be guaranteed for foreseeable future." It warned that new weapons technology will proliferate rapidly and there's no way to know "how such weapons will interact except that they will be quite unpredictable." ICRAC stated that machines can be better at some tasks, but human involvement is needed for tasks involving reason and judgment. Sensors will improve, but methods to determine legitimacy are not yet credibly proposed. It described the minimum necessary conditions for meaningful human control.

Sierra Leone, Canada, and the US also intervened.

- The US gave a detailed statement on its DoD directive, the goal of which is to minimize failures of autonomous weapons systems to protect from unintentional consequences. The directive allows for "appropriate levels of human judgment over the use of force" in the full range of human input in their development, fielding, and use including decision to deploy in particular circumstances. There is therefore rigorous verification, testing, and

evaluation. The policy provides for an “abort kill switch” with the ability to self-destruct or not engage in unexpected conditions. The US noted that a human commander “wouldn’t feel comfortable ceding control” and noted rapid advances would allow an unethical party to put a weapon on ‘rumba’ in their garage.

- Sierra Leone emphasized that we are talking about human lives so we need to consider the implications of errors in operation of fully autonomous weapons.

The [ICRC](#) observed “there is no clear line between automated and autonomous weapon systems” and proposed that “rather than search for an unclear line, it may be more useful to focus on the critical functions of weapon systems” or “the process of target acquisition, tracking, selection, and attack.” The ICRC noted “there has been much reference to the concept of ‘meaningful human control’ during discussions” and suggested a way to get a better understanding of this concept would be to “examine current weapons that have autonomy in ‘critical functions’ to see how meaningful human control is understood and considered to be implemented in practice today.”

### **Ethical presentations by Lambert and Asaro**

At approximately 11.30am, Brazil’s Ambassador Pedro Motta Pinto Coelho opened the session on ethical and sociological issues, which featured two presenters. In his introductory remarks, Brazil described the “three laws of robotics” by Russian-born, American author Isaac Asimov as “fundamental” in addressing principles specific to autonomous weapons.

[Dr. Dominique Lambert](#) from the University of Namur in Belgium described robots as “vital” to help relieve humans from dirty, dangerous, or boring jobs, but cautioned that lethal autonomous weapons systems raise crucial issues, including deep questions about the value of human life and relationships in building a balanced and peaceful world. Lambert called for armed robots to be governed by clear criteria and never used without a human in-the-loop.

[Dr. Peter Asaro](#) argued that a machine is not capable of moral reasoning or considering the value of human life. He argued that meaningful control necessitates reasoning and deliberation and emphasised that the notion of human judgment is built into the Geneva Conventions. Dr. Asaro noted that the laws of war are based on a recognition of the other humans whose lives are about to be lost. He called for establishment of a norm or value to ensure there is always be meaningful human control over each and every use of violent force

In the discussion that followed the presentations, Canada, Pakistan, Germany, US and Japan intervened and—after lunch—Australia, the Netherlands, and India.

- Canada said the “ugh factor” may be viewed differently in different societies and fears could disappear as civilian applications of technology become more common. It asked about the phenomenon described in “Wired for War” showing humans becoming emotionally attached to robots, such as the anti-IED systems. Canada said it sees competing claims between moral duties to robotics and moral duties to civilians.
- Pakistan asked questions about how belligerents might respond to attack by autonomous weapons, the ethical justification for lowering the threshold of

going to war, and whether possessing autonomous weapons would justify the retention of nuclear capabilities.

- [Germany](#) said the question of whether lethal autonomous weapons are ethical is interesting as what is socially acceptable evolves with the appearance of new technologies. What was unacceptable in past is now normal. This is true for robotics and weapons. But Germany cautioned, “we do not want our society to get used to idea of autonomous weapons deciding life and death” without fully considering the ethical aspects. It asked what is meaningful human control?
- The US said that the use of lethal force irrespective of the weapon raises legal and ethical issues. Weapons remain machines or tools to be used by humans. Humans still have responsibility for making decisions about when and where to deploy them. It would be the human’s responsibility to deploy them ethically and legally. The US noted that autonomy in current systems can lead to greater accuracy and efficiency. Defense systems can protect soldiers and civilians. It asked about Arkin’s question: if one can reduce civilian casualties, how does that affect the ethical calculus? The US said that states must ensure lethal autonomous weapons can be used in ethical manner.
- Japan warned that fully autonomous weapons could lower the threshold for the use of force. It called for safety measures that would ensure that a machine cannot harm a human without human control.

### **Legal presentations by Melzer, Waxman, and Sassòli**

Ambassador Aya Thiam Diallo of Mali was the first woman to address the experts meeting from the podium when she chaired the first part of the session on legal issues starting on the afternoon of the second day.

[Dr. Nils Melzer](#) from the Geneva Centre for Security Policy, started with a “word of caution” to “not get carried away with the nightmare picture” of ‘The Terminator’ as “the reality lies somewhere in between” and we have to “remain objective.” He argued that lethal autonomous weapons are not inherently illegal and said the Martens Clause is not a binding rule. Melzer described autonomous weapons as having “great military potential” for avoiding abuse, violations, and outrages that only humans can commit because of emotion. He said the public conscience is a valid consideration in ethical terms, but not binding and suggested a focus on ethical and legal limits. He declared that “any weapon can be used unlawfully” and said existing law is “adequate” to regulate the use of lethal autonomous weapons systems. Melzer proposed an intergovernmental process to develop guidance for Article 36 legal reviews and seek consensus on ethical limits.

[Dr. Matthew Waxman](#) from Columbia University’s Law School said that existing international humanitarian law already provides a robust system to regulate the development and use of new technologies. He said that “radical proposals such as a ban are not only unnecessary, but inappropriate.” Waxman argued that autonomous weapons may reduce risk to civilians by minimizing mistakes and emotions and argued there may be potential moral costs to preemptively banning them. he stated that meaningful human control could call into doubt many already existing systems. Waxman said the Martens Clause doesn’t impose additional requirements he disagrees with those who interpret it as to require action based on the dictates of public conscience by stating it “doesn’t reflect the view of many states.” Waxman

said that the same rules governing the use of lethal autonomous weapons systems apply just like other weapons systems. He challenged the notion that there is something inherent in human judgment required for compliance with IHL. Waxman recommended that transparency measures be bolstered and called for states to share best practices on weapons reviews.

[Dr. Marco Sassòli](#) from the University of Geneva stated that while it is not the case now, one can assume that one day computers will be able to distinguish between civilians and combatants in targeting decisions, providing lethal autonomous weapons systems with “advantages” over other systems. Among the advantages cited by Sassòli were that computer system can process information faster than humans and will not commit crimes such as rape. Sassòli argued that only human beings can be inhumane and that autonomous weapons would be better able to evaluate the military advantage and risks to civilian populations. He said that it is not technically impossible to develop robots that would be as capable of distinguishing targets as existing human soldiers are. Sassòli concluded that existing law must be interpreted to apply to specificities of lethal autonomous weapons systems. He described predictability as imperative, but said that every weapon can malfunction.

In the discussion that followed Mali, Germany, Pakistan, US, UK, Russia, Canada, Switzerland, Netherlands, and Japan intervened, followed by the ICRC.

- Mali asked about the relevance of the Martens Clause and specific obligations incumbent upon states developing lethal autonomous weapons systems. Are their sanctions they can be subject to?
- Germany said the concept of meaningful human control might not be a legal principle but it could guide considerations. While it is “incontrovertible” that the laws of war apply to lethal autonomous weapons systems, Germany said it challenged the panelists’ view as even if a weapons systems is deemed lawful it may not be used if it violates key principles of international humanitarian law.
- Pakistan observed the “unanimous view” of the panel that lethal autonomous weapons systems are not inherently illegal, but their use could be if they do not comply with international humanitarian law. Pakistan said these are “not an ordinary weapon used by humans” but rather “a killing machine” and said to apply same principle of existing law to it is “highly debatable.”
- The US said in its view the Martens Clause is not a rule of international law that prohibits any weapon, but simply reiterates the application of customary principles where specific law does not exist. It stated “we do not see how customary principles of international humanitarian law would prohibit autonomy in weapons systems.” The US dismissed the notion that public opinion might influence the acceptability of weapons, warning this would mean changing the content of international humanitarian law every time that public opinion changes and “new weapons are often publicly denounced.” The US asked if weapon can be used lawfully, what basis is there for declaring it illegal per se? “Where does the burden of proof lie in question of determining wheter something was per se unlawful?” It asked if autonomous weapons systems are preferable to avoid collateral damage and asked if there would be interest in more precise methods of warfare if such were available. The US said that autonomous weapons systems might reduce injury if a last moment

self-deactivation feature is included in case of changing circumstances that might not be available to humans in face of lost communication.

- The UK said that lethal autonomous weapons systems won't exist in "a legal vacuum" and said that if the weapons were not able to comply with international humanitarian law then their unrestricted use would be unlawful. There might be circumstances where a system could be used, such as where civilians would not be present, though this would require high level of human oversight. The UK said that nobody knows if lethal autonomous weapons systems would be able to comply with key principles of international law and said the "technology is not there and may never be." The UK said it has no plans to develop fully autonomous weapons and that it is committed to human oversight and meaningful human control over all weapons.
- Russia cautioned against trying to develop legal definitions at this stage as there are still many things we need to discuss. It noted that international humanitarian law was written for human beings and this increases its importance when the weapon itself has autonomy.
- Canada asked how weapons reviews might evolve in context of lethal autonomous weapons systems.
- Switzerland described existing international humanitarian law as a "non-negotiable starting point" and said the same rules apply to offensive or defensive attacks. It recommended further discussion of the legal review process as well as transparency measures.
- The Netherlands supported the call for discussion of transparency measures. It agreed that lethal autonomous weapons systems are "probably are not inherently illegal" but noted that predictability is key and the full consequences of the weapons must be addressed. The Netherlands said it has a committee of experts that rigorously tests and reviews new methods and means of warfare in what is not solely a legal review, but one involving ethical, technical, social, and political considerations. It asked how the notion of meaningful human control could be recognized in international law.
- Japan said that lethal autonomous weapons systems are not yet existent so there is lots of uncertainty. It said "our view at this stage is that it is questionable" if the weapons could comply with international humanitarian law.

The ICRC observed that the legal presentations of the panelists were based on "many assumptions and unknowns." In response to the statements that lethal autonomous weapons systems are probably not inherently illegal, the ICRC said clarify if you mean it is not illegal in all circumstances. The question is whether a weapon system is capable of being used in accordance with international humanitarian law. Ensuring predictability from a legal viewpoint raises serious questions about how weapons system can be adequately tested and how verified without predictability in the likely effects. The ICRC recalled that the International Court of Justice had observed that the Martens Clause had proved to be effective means of addressing rapid evolution of technologies and as such represents customary international law.

Another round of interventions was made by France, Australia, Sweden, and China before the session concluded at approximately 6.00pm.

- France noted that one of Sassòli’s assumptions was predictability and asked what “predictable” means and to what degree autonomous weapons are predictable.
- Australia asked if states could come to different conclusions about whether a weapons system is autonomous and how it would be used. It asked about the changing nature of Article 36 reviews.
- [Sweden](#) said that at this stage international humanitarian law effectively precludes the use of autonomous weapons, though technological developments may overcome this issue. It said that states are responsible for the use of lethal autonomous weapons systems. Sweden said we don’t believe weapon systems will be capable of performing subjective decisions required in the near future. It said targeting decisions must continue to be made by humans.
- China noted the NGO characterization of its position on lethal autonomous weapons systems as being “hesitant” on the CCW mandate, but said it “vigorously contributed” to the mandate decision last November. China cautioned that technological advances do not always bring benefits and asked if autonomous weapons do not yet exist, how can we ascertain their legality or prejudge how they might be used in the future?

The third day opened with a set of concluding comments and questions on the legal panel from the day before which was followed by another panel on legal aspects and after lunch by the final thematic discussion on operational aspects.

A final set of comments and questions were made for the first part of the legal discussion from the representatives of Israel, India, and Belarus.

- Israel cautioned that delegates keep an “open mind” as it is “difficult” to foresee how developments may look in 10-30 years from now. It said it is “unfounded” to argue that autonomous weapons systems could “never” reach certain capabilities and to operate under this assumption affects serious legal discussion. Israel proposed that each lethal autonomous weapons systems “be assessed on case by case basis.” It said that each system must be adapted to the complexity of the environment of use, which could be simplified by limiting system operations for specific territory, targets, tasks, or other limitations set by a human. The system could if necessary programmed to refrain from action and await input from a human when the situation is unclear. Israel contended that the weapons might better comply with international humanitarian law because they would be more predictable and unemotional.
- India described the relationship between lethal autonomous weapons and international humanitarian law as “a moving target,” noted the “wide divergence of views” on the sufficiency of international law, and said the law is not the only reference point and drew attention to the object and purposes of the convention. It highlighted the Martens Clause and dictates of public conscience as an important reference point, but said it may not be an adequate filter with respect to development of new weapons contrary to international humanitarian law. India asked if Article 36 reviews would be sufficient since the language was developed and agreed when the human role was central in use of force. It urged consideration of the broader proliferation challenge.

- Belarus said that it has national mechanisms in line to ensure its compliance with Article 36. It said there is a threat of an arms race in lethal autonomous weapons systems “with unpredictable consequences.” Belarus cautioned that if we simply accept fact that relevant provisions of international humanitarian law exist then no further discussion will be needed. One could say disband the Conference on Disarmament as states can abide by existing law.

Human Rights Watch, ICRC, and Article 36 also intervened as well as a participant from a Japanese university:

- [Human Rights Watch](#)’s Ms. Bonnie Docherty welcomed the presentations but pointed out “there are legal experts with different points of view than those on the panel.” It said the weapons’ inability to comply with existing law is “a major problem” and described the adoption of new law as “the best solution.”
- [ICRC](#)’s Dr. Heather Roff disputed the notion an autonomous weapon would be less likely to result in the commission of war crimes such as rape by pointing out that rape is often state policy. It said we must recall that the behavior of autonomous systems is, by definition, stochastic or probabilistic in nature and is thus unpredictable, criterion of effective control is impossible.
- [Article 36](#)’s Mr. Thomas Nash cautioned that, “future weapons systems may condition and affect the way in which human commanders make legal decisions, but it must always be a human to make these legal determinations.” It said the principles of humanity – on which existing international law is based – can be seen to require deliberative moral reasoning, by human beings, over individual attacks. Weapons that do not allow such human control and attacks without such human control should be prohibited.

### **Legal presentations by Marauhn, Heyns, and Melzer**

Sierra Leone’s Ambassador Yvette Stevens chaired the second session on legal aspects, which began late in the morning on Thursday, 15 May.

[Dr. Thilo Marauhn](#) from the University of Giessen in Germany focused on state responsibility and individual criminal accountability, which he described as primarily an issue one of command and control and not a technical one. He said the decisive point in time for establishing responsibility is “the launching of the attack.” Dr. Marauhn said the programmer, commander or civilian supervisor would not escape international humanitarian law or or criminal law.

Dr. Christof Heyns from the University of Pretoria spoke to the CCW experts meeting in his personal capacity and not as the UN special rapporteur on extrajudicial, summary or arbitrary executions. He said that lethal autonomous weapons systems raise “very profound legal and moral questions” and urged that the debate not ignore international human rights law considerations, which apply at all times and are complementary to international humanitarian law. Dr. Heyns noted concern at the “great degree of unpredictability” concerning truly autonomous weapons. He said the precautionary principle is relevant and described lethal autonomous weapons systems as the “exact kind of situation that the Martens Clause is designed to address.” Dr. Heyns described the notion of meaningful human control as a “useful starting concept for the stage of debate we are at.” He said it was “equally important” to address the

matter in human rights fora such as the Human Rights Council and called for all processes to be more open by including women and people from the Global South.

In his [second presentation](#) to the experts meeting, Melzer said that lethal autonomous weapons systems could lower the attackers' risk, but the same is true of any other means of warfare. He said the notion that the weapons will escalate conflict is not true as all states are obliged to resolve disputes peacefully, to ensure compliance with international humanitarian law, and undertake legal reviews. He said that as a matter of policy the use of force is a delicate political decision that is not likely delegated and lethal autonomous weapons systems are not designed to replace highest levels of command.

In the discussion that follows, Belarus, India, Greece, US, Brazil, Mexico, Mali and Australia intervened.

- Belarus noted that some stated they don't find the Martens Clause to be legally binding under international humanitarian law. Lethal autonomous weapons systems may further exacerbate suffering of civilians during future conflict as not all states follow the letter or norms of international law. Some countries may believe that the entire adult population of a country can be considered as potential soldiers in the army of an enemy state or as terrorists so the weapons could be programmed to eliminate all adults or attack civilian infrastructure.
- India said international law is an important reference point, but "we need to go beyond the considerations of law" as lethal autonomous weapons systems would exacerbate the existing trend in armed conflict of past 3-4 decades in the grossly screwed number of casualties among combatants and non-combatants. It is not guaranteed that the public conscience and role of mass media will kick-in at the right time to prevent casualties. The propensity to use force would increase because of the military advantage available to a few states and it is illogical to think they won't use them. What do these weapons do to the right to self-defense?
- Greece said the presentations showed that as long as a system can be programmed with all variables and if it could comply with international humanitarian law then it could be lawful, but we're not there yet and no one knows when we will be.
- The US said that it seems the human must decide how to program an autonomous weapons system. The US could also foresee a system being used in a manner constituting a criminal attack. It reiterated that international humanitarian law is the relevant framework since it is the one governing Article 36 weapons reviews.
- Brazil said it would be difficult to ensure criminal accountability or personal responsibility and asked if lethal autonomous weapons systems represent a "paradigm shift."
- Mexico agreed that lethal autonomous weapons systems cannot comply with key principles of international humanitarian law. It recognized the need for "a significant level of human control" in addition to legal review under Article 36 of new weapons. Mexico warned that the weapons could be used in situations that aren't armed conflict so therefore it is necessary to also consider international human rights law.

- Mali said that lethal autonomous weapons systems may not have the ability to be discriminate and could be a step backwards for the international community.
- Australia asked about command responsibility when a current guided weapon unexpectedly behaves and misses the target.

There were two NGO statements before the legal session concluded.

- In a [statement](#), ICRAC rebutted Professor Marauhn’s suggested focus on the release of a weapon as the moment of decision for which legal accountability could be established by stating that it implies the final decision by a human whereas decision making authority is being delegated to a machine. ICRAC suggested that the use of autonomous weapon systems implies a progressive release of control and responsibility from humans to machines.
- In a [statement](#), Human Right Watch said that “serious doubts” exist as to whether there could be meaningful accountability for the actions of a fully autonomous weapon. It also noted the “equally problematic” human rights law implications of the weapons.

### **Operational presentations by Hagerott, Sato, Madiot, and Richter**

On the afternoon of Thursday, 15 May, Ambassador Simon-Michel of France opened the final session on operational aspects, which featured four presenters with military experience, all speaking in their personal capacity.

[Dr. Mark Hagerott](#) from the US Naval Academy in a presentation entitled “lethal autonomous weapons systems from a military officer’s perspective ... this time is different” described the life-cycle theory of technological change to show how warfare has moved from the human realm to an integrated human/machine realm and now faces a machine realm in which new technology such as SWARMS that could be deployed against human without human control or empathy. Dr. Hagerott said lethal autonomous weapons systems could bring short-term benefits, but there are dangerous risks as human control will be degraded over the long-term. He urged a focus on the physical manifestation by limiting numbers and devices sized smaller than a human as well as a ban on “human impersonation.”

[Dr. Heigo Sato](#) from Takushoku University in Japan also said the introduction of lethal autonomous weapons systems would fundamentally change the nature of warfare. He said that the weapons would lack situational human considerations in the battlefield. Dr. Sato observed that states must pay attention to ethical standards in the use of force and noted the potential of lethal autonomous weapons systems to change how we understand international law. Dr. Sato said the precautionary principle is relevant and recommended, “earnest discussion on the issue with great caution.”

[Col. Wolfgang Richter \(Ret.\)](#) from Germany looked at the utility and limitations of the use of lethal autonomous weapons systems in military operations, including the definition of automation and autonomy. He said control of autonomous weapons would most likely be integrated in the chain of command and control to lie with the military commander in charge and respective control system in place. Col. Richter acknowledged that autonomous weapons are “part of a revolution in military affairs” but noted they “don’t generate new capability.”

[Lt. Col. Olivier Madiot](#) from the French Armed Forces described lethal autonomous weapons systems as a “vital subject” for militaries, but emphasized “no one is currently planning deployment” of such systems. He drew attention to the likely high costs of procurement and maintenance. Lt. Col. Madiot questioned the operational interest in deploying lethal autonomous weapons systems, describing their use in populated areas where contact with humans is needed to win hearts and minds as “very unlikely.”

In the discussion that followed, Canada, Japan, Switzerland, US, Spain, Ecuador, and Czech Republic intervened.

- Canada asked if there are any historical examples with respect to how different states have perceived new technology in different ways. It also asked about the relationship between cyber warfare and lethal autonomous weapons systems.
- Japan said it was “not surprising” to hear “biased views” about lethal autonomous weapons systems and declared that it has “no plans to develop” weapons systems with humans out of loop that would be capable of committing murder.
- Switzerland said it had various questions for further debate, including is autonomy only answer to question of increased speed of operations, which exceeds human capability to react? It also asked about the readiness of military personnel to delegate decision-making to machines.
- The US urged delegates to think about benefits of unmanned platforms, which could improve accuracy in selected targets and result in a reduction of collateral damage. It said that defensive weapons protect military and civilians against short-warning attacks.
- Spain said the regulatory pyramid could be a perfect framework to provide safeguards for proper control and supervision of these systems
- Ecuador observed that no state is questioning that the weapons must abide by international law and the UN Charter, but said we should be most concerned by the technical aspects and in favor of human life. Ecuador expressed hope that CCW states parties in November agree to give the issue “due time for continued debate” - an opinion it said is shared by delegations. It said the issue is “of prime importance” and “must continue to be analyzed and kept on the international agenda.”
- The [Czech Republic](#) drew attention to the possible benefits of lethal autonomous weapons systems “to reduce military losses.” The representative said that the Czech Republic assumes the weapons systems will be deployed because of their “high efficiency” and lower failure rate.

An expert and the NGO ICRAC intervened.

- Paul Scharre observed that meaningful human control implies an idealized world whereas 23 nations are currently developing armed unmanned aircraft (drones) and the computer code is being written today to overcome situations on speed and lack of communications, which he said are the two main reasons for militaries to a human out of the loop. Mr. Scharre asked what an

unmanned vehicle should do when communications is cut—return home, strike fixed targets, switch to surveillance—and can it engage to defend itself?

- [ICRAC](#)'s Heather Roff raised three potential operational points concerning the future deployment of lethal autonomous weapons, including interoperability between different systems and what happens when connectivity and communication is often degraded in warfare and other domains. It said there are no unoccupied spaces and questioned the assumption that a domain (air/sea) can be kept separate from another.

Pakistan, Belarus, Mali, Sierra Leone, France and the ICRC intervened in a final round of statements before the session concluded.

- Pakistan described the introduction of lethal autonomous weapons systems as “highly destabilizing” as it would fundamentally change the nature of warfare. Counter-measures could include nuclear weapons and other WMDs. It highlighted the proliferation concern of an “unchecked robotic arms race.”
- Belarus underlined the increased risk for civilians if autonomous weapons were introduced in populated areas as military targets in Europe are in major centers.
- Mali said that introducing lethal autonomous weapons systems would be “a thing of fantasy” in the political, legal, economic, and military-sense.
- Sierra Leone asked if the lives of soldiers of the state operating an autonomous weapon would be viewed as more valuable than those of the opponents. It asked what safeguards could be put in place to ensure lethal autonomous weapons systems don't fall into the wrong hands.
- France stressed that humans should remain the sole decision making point. It said a fully autonomous lethal system would run counter to permanent human control. France said it is premature to take a definitive stand when the advantages and disadvantages of such a system are still ill-defined so continued discussions are needed.

The ICRC asked if we risk missing the point by focusing on science fiction and what a weapons system might be able to do in future. It suggested a focus on “science fact” by considering the technology being developed today where there is some autonomy in limited tasks on an expanding range of robotic weapons platforms. It urged that technological development be seen as an incremental process.

## **Wrap-up Session**

Ambassador Simon-Michel France chaired a “[wrap-up session](#)” on the final morning of the meeting, which opened with a brief statement by the acting director-general of the UN Office in Geneva, Mr. Michael Møller and then saw report-backs by the friends of chair for the thematic sessions of the experts meeting.

- In his [summary report](#) on technical issues, Ambassador Biontino of Germany said the notion of “autonomy and its definition” were at the center of the debate over lethal autonomous weapons systems. He said the expert presentations showed there is no “ready-made, generally accepted definition” of an “autonomous system” or where to draw the line between “autonomous” and “automatic” or “automated.” Biontino said “there was a really lively

debate” over this emerging technology focused on weapons systems that do not exist yet. He observed, “there was a widespread understanding that some sort of human control should always be maintained” over fully autonomous weapons systems, but said there was no clear definition of “what this control should look like.”

- In his summary on the ethics session, Ambassador Coelho of Brazil said there are different levels of acceptance in different societies and contexts as to the relationship between humans and machines. On the battlefield, the use of machines raises questions about dehumanization of warfare and how it affects human dignity. Ambassador Coelho said there are questions about whether international humanitarian law is sufficient to face challenges posed by these weapons and said that allowing machines to decide to take a life can affect human dignity and thus international law. We should guarantee that humans remain capable of building their own history.
- In the [summary report](#) on the first section of the session on legal aspects, Mali’s Ambassador Diallo said there were differing views of the legality per se of lethal autonomous weapons systems and said if the weapons are proved to be unpredictable they should be considered illegal. She observed there was “much debate about the rules of targeting” and the need for the human to always have final control over targeting decisions. Ambassador Diallo said there are three points of view: 1) international humanitarian law is at present is sufficient on lethal autonomous weapons systems and no supplemental action is required, 2) totally ban the weapons, and 3) look further at the issue through more in-depth study.
- In her summary on the second section on legal aspects, Ambassador Stevens of Sierra Leone said that a number of issues were raised in the debate, including the need for full application of international humanitarian law principles and for remedies for the accountability gap. She said there was acknowledgment of the need to discuss standards and processes. The use of lethal autonomous weapons systems in any circumstances raises the importance of human rights law, which applies at all times, especially the right to life as well as the value of human dignity that can’t be set aside.
- In his summary of the session on operational aspects, Ambassador Simon-Michel of France said a possible reduction in collateral damage was touched on, but several presentations highlighted risks associated with lethal autonomous weapons systems and their use during military operations. A number of states mentioned that lethal autonomous weapons systems could break-down strategic balances, while others didn’t see the weapons becoming reality because a military need to retain human control over operations. Ambassador Simon-Michel noted the question of how supervised autonomous weapons systems should behave on occasions where communications break down and said that interoperability questions were also raised. He concluded that the “very interesting discussion” showed the need for further talks on the matter.

A total of 26 nations spoke in the [wrap-up session](#) on the final morning in addition to the coordinator of the [Campaign to Stop Killer Robots](#), campaign co-founder

[ICRAC](#)'s Dr. Frank Sauer, the ICRC, and an expert presenter.<sup>6</sup> See Annex I for the list of summary statements.

None of the nations that spoke objected to the CCW work on the topic and almost all expressed interest in continuing the CCW process. China and Russia said they would indicate their position on continued CCW work during the annual meeting in mid-November 2014, while India said it would support the same mandate of work in 2015. Austria, Brazil, Mexico, and New Zealand supported further discussions on the issue within the framework of the CCW as well as in other forums relevant to the issue.

Many nations, including Austria and Croatia, spoke about the using the concept of meaningful human control as the basis for further action. Only India and the United States seemed hesitant about endorsing the idea of meaningful human control.

### **Chair's report**

On the afternoon of the final day the chair's [draft report](#) was circulated to the informal experts meeting and then accepted with minimal edits. After delegates had reviewed the draft, Ambassador Simon-Michel announced a correction to the report's title, which had omitted the word "informal" and added four more nations to the participants list. He was then thanked by the incoming chair Poland's Ambassador Henczel.

Before closing the meeting, Ambassador Simon-Michel said the "unusual" amount of "copious media coverage" had demonstrated strong interest in the informal CCW experts meeting, and this "new topic" in disarmament. But he noted this is "not the first time" that the CCW has considered topics which relate to types of weapons that have not yet become operational citing CCW Protocol IV banning blinding lasers. He observed that delegates can return home with a better knowledge of challenges and stakes involved with these weapons in the future.

The draft report on the experts meeting was not debated as per the CCW's normal practice because it was the responsibility of the chair and not a product endorsed by nations attending the meeting. The report describes the main discussions in the course of the meeting—including the mentions of the need for human control—and notes that "many delegations expressed the view that the process [in the CCW] should be continued."

WILPF's Reaching Critical Will has identified the following highlights from the chair's four-page report.

According to the chair's report, most delegations thought the experts meeting provided a better understanding of the characteristics of lethal autonomous weapons systems, but considered it premature to determine where discussions would lead. Options cited include exchange of information, development of best practices, a moratorium on research, and a preemptive ban on the weapons. Many highlighted the potential for rapid technical developments in autonomous weapons to radically

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<sup>6</sup> See Annex II for summaries and links to the country statements. The order of speakers was as follows: Austria, India, Ireland, US, UK, Australia, Cuba, Switzerland, Argentina, Germany, Czech Republic, Netherlands, Russia, Canada, Italy, Croatia, Mexico, Japan, New Zealand, Pakistan, Sweden, China, Spain, Guatemala, and Belarus.

transform the nature of warfare. Most delegations thought it too early to try and agree on a definition of lethal autonomous weapons systems.

The technical section of the chair's report notes that key elements appeared pertinent to describe the concept of autonomy, namely the capacity to select and engage a target without human intervention. The report notes that some said autonomy should be measurable and based on objective criteria such as capacity of perception of the environment and ability to perform pre-programmed tasks without further human action. Many interventions stressed that the notion of meaningful human control could be useful to address the question of autonomy, while others said this concept requires further study in the context of the CCW.

On ethical and sociological considerations, the chair's report states that delegates questioned whether a machine could acquire capacities of moral reasoning and human judgment, which is the basis for respect of international humanitarian law principles and challenged the capacity of machine to respond to a moral dilemma. There were also questions about whether values and ethics could be programmed. Delegates also discussed the impact of development of lethal autonomous weapons systems on human dignity, highlighting as an ethical concern the devolution of life and death decisions to a machine. The report notes that some argued that it would be the commander or operator making a decision to employ force.

On the session on legal aspects, the chair's report states that delegates examined the compatibility and compliance of lethal autonomous weapons systems with existing international law, particularly international humanitarian law, as well as the Martens Clause. A number questioned if an accountability gap would be created by autonomous weapons at the state and individual levels and asked if responsibility for violations of international law could be established. Delegates deliberated on the implications of lethal autonomous weapons systems for the right to life, human dignity, due process, and right to be protected from inhumane treatment. Some asked if lethal autonomous weapons systems would change the threshold of the use of force. Some stressed necessity of Article 36 weapons reviews, transparency, and information exchange on best practices.

On the session on operational and military aspects the chair's report notes that experts and delegations described the potential for lethal autonomous weapons systems to be game changers in military affairs, but some indicated that there was little interest in deploying the weapons given the need to retain human control over operations. Many stressed the operational risks associated with the use of autonomous weapons, including vulnerability to cyber attacks, lack of predictability, difficulties of adaption to a complex environment, and challenges of interoperability. Delegates discussed the potential impact of autonomous weapons on international peace and security.

#### ***4. Campaign engagement***

From the moment the CCW mandate was agreed in November 2013, the Campaign to Stop Killer Robots began to prepare for the 2014 experts meeting and engage extensively in the process leading up to it.

On 3 December, campaign representatives met with Ambassador Simon-Michel to discuss his plan and desired outcome for the CCW experts meeting and objectives for

the process that the CCW had decided to undertake. Over the next six months the campaign's coordinator and its representatives engaged regularly with Ambassador Simon-Michel and his team as well as during the CCW experts meeting. The coordinator also communicated with the UN Office for Disarmament Affairs in Geneva on its campaign delegation for the CCW meeting.

Representatives from the Campaign to Stop Killer Robots attended every meeting to which civil society was invited in the period before the CCW experts meeting and several campaigners participated extensively.<sup>7</sup> The need to affirm the principle of meaningful human control over targeting and attack decisions became a central message, as suggested by Article 36, while the campaign's call for a preemptive ban message was debated throughout.

Immediately after the Chatham House conference, the Campaign to Stop Killer Robots held a strategy meeting in London on 26 February attended by 50 NGO representatives. The meeting focused on planning the campaign's strategy for the year ahead at CCW and the Human Rights Council as well as how to initiate national campaigning to influence policy development and secure support for a ban. The campaign's leadership Steering Committee held a day-long planning meeting in London on 27 February.

In March 2014, the campaign issued its third "Action Alert" inviting its members to adapt and use sample "talking points" in advance of the CCW experts meeting. Campaigners pressed governments to actively engage in the first CCW experts meeting. National campaigning actions—including public briefings, parliamentary outreach, meetings with foreign ministry officials, media interviews—were undertaken in Italy and [Japan](#) in November, in New Zealand in December, in Norway in January, and in [Ireland](#) and [Canada](#) in April.

The campaign issued a "Frequently Asked Questions" or FAQ on the Convention on Conventional Weapons on 5 May together with a media advisory and its delegation list. On 12 May, campaign representatives again briefed 20 members of the UN Association of UN Correspondents/Association des Correspondents Auprès des Nations Unies (ACANU) at the UN in Geneva. Co-founder Human Rights Watch issued the "Shaking the Foundations" report looking at the human rights law implications of killer robots, while Nobel Women's Initiative chair Jody Williams released a sign-on statement by 20 Nobel Peace laureates endorsing the call to ban killer robots. This marked the beginning of media outreach that resulted in extensive coverage as detailed in Annex III.

As with the precedent set by previous CCW discussions and negotiations on other issues, the Campaign to Stop Killer Robots had a seat at the table and its first nameplate for participating in the CCW. The Campaign to Stop Killer Robots contributed actively throughout the course of the experts meeting, presenting and making statements in plenary, circulating documents, hosting side events.

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<sup>7</sup> Prof. Noel Sharkey and Dr. Peter Asaro from ICRAC and Mr. Steve Goose from Human Rights Watch.

Four daily side events convened by the Campaign to Stop Killer Robots on legal, technical and ethical aspects as well as the way forward each attracted more than 100 delegates, including representatives from dozens of states. Every side event featured a lively Q & A session. WILPF's Reaching Critical Will reported on the side events in detail and posted plenary statements to its [website](#). Throughout the week of the CCW, campaigners met with diplomats from various countries.

The global coordinator Wareham delivered statements on behalf of the Campaign to Stop Killer Robots, at the beginning and end of the CCW experts meeting. Eight member NGOs delivered statements in the course of the meeting.<sup>8</sup> Several campaign members issued new research and materials in the course of the experts meeting, including Nobel Women's Initiative ([statement by 20 Nobel Peace laureates](#)), Human Rights Watch ("[Shaking the Foundations](#)" report and handout on "[12 Key Arguments](#)"), Mines Action Canada (handout on the [CCW Blinding Lasers protocol](#) and pens), Article 36 (updated [Memo to CCW Delegates](#)), and WILPF's Reaching Critical Will, which produced five editions of a daily 2-6 page "[CCW Report](#)" that was disseminated in print to all delegates as well as online.

There was high praise for civil society contributions throughout the experts meeting, including several references by name to the role of the Campaign to Stop Killer Robots. On the final day, 14 of the 26 nations that spoke acknowledged the role of civil society in their statements.

One disappointing aspect of the otherwise successful meeting was the lack of any women experts in the line-up of 18 expert presenters. During the general exchange of views, [Norway](#) expressed disappointment at the lack of female presenters as did Nobel Peace Laureate Ms. Jody Williams. A caucus of women from the Campaign to Stop Killer Robots [delegation](#) met on 14 May to discuss how to overcome the lack of gender and other diversity in the CCW experts meeting and more generally. This has resulted in [media coverage](#), blog posts listing women experts ([Just Security, campaign](#)), a list established by Article 36 of men pledging to not accept invitations to speak on male-only panels on humanitarian disarmament topics ([Article 36](#)), and a new email listserv for campaigners interested in overcoming the diversity challenge

For more information, see:

- Statements from the meeting on the [official UN site](#) and WILPF's [Reaching Critical Will](#).
- Photographs from the campaign's [Flickr](#) account and UN Geneva's [Flickr](#).
- This [Storify](#) prepared from tweets by [@BanKillerRobots](#) and campaigners [tweeting](#) at the meeting.
- This [short film](#) on the CCW on the campaign's YouTube account that has been viewed more than 1,500 times.
- Campaign web posts on the [CCW outcome](#) (15 Nov.), [First UN meeting](#) (5 May 2014), and [Nations confront killer robots challenge](#) (16 May).
- [Backgrounder](#) and other [statements](#) on the CCW by the Campaign to Stop Killer Robots

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<sup>8</sup> Amnesty International, Article 36, AAR Japan, Human Rights Watch, ICRC, Nobel Women's Initiative, PAX, and WILPF.

## Annex I: Summary of country statements

The following summaries are thumbnail descriptions of what was said and not the complete record. The full text and audio versions of these statements are available from the UN's website at: <http://bit.ly/1jSlCro>

### Tuesday, 13 May, during the general exchange of views:

1. Australia in a brief statement confirmed that it undertakes legal reviews of any new weapons system, as required by Article 36. It said the topic of lethal autonomous weapons systems “has raised many more questions than answers” and said the weapons could only ever be used in accordance to international law. Australia expressed interest in developing “common understandings” on definitions and other aspects. It said the definition could distinguish between offensive and defensive weapons.
2. [Austria](#) said we cannot ignore a development that is revolutionizing warfare “before our eyes” and noted the many questions raised by UN special rapporteur Christof Heyns in his report as well as by the Campaign to Stop Killer Robots and its members. Austria said that in contrast to traditional weapons, these would operate with lesser degrees of human control or none at all. It described the need to find common definitions as “premature” and acknowledged “serious doubts” among lawyers and roboticists as to lethal autonomous weapons systems “can ever comply” with the laws of war and raised questions of legal responsibility and accountability. Austria urged that “philosophical and ethical dimensions” be taken into account, said it favors “further discussion in relevant fora” and encouraged NGOs to foster public debate.
3. [Brazil](#) acknowledged the “key role” by civil society in raising concerns over lethal autonomous weapons systems. It said it is “critical” to ensure that new and emerging technology is employed in conformity with international law. Brazil noted that ethical and moral standards require meaningful supervision to take a life. It gave the example of the mythical story of Golem to emphasize, “technology is not always best solution for challenges, especially in warfare.” Brazil said we need to reconcile questions over reconcile their use with legal, ethical, moral imperatives. It described the Martens Clause as a “keystone” of international humanitarian law that “allows us to navigate safely in new and dangerous waters” and feel confident that a human remains protected under the principles of humanity and the dictates of public conscious. Brazil pointedly stated that discussion within the CCW shouldn't preclude other UN bodies such as the Human Rights Council from taking action on issue in accordance with their mandates.
4. Canada said it considers the potential implication of lethal autonomous weapons systems to warrant careful scrutiny even before their development. It said the challenge of discussing a weapon that “does not really exist yet” means deliberations are “rather speculative” but still useful. Canada admitted to not having fully developed a position on the matter, but stated that it is not currently developing any such systems. Canada stated that the existing international humanitarian law framework currently sufficient to regulate use of lethal autonomous weapons systems, but “if after discussion it is

determined there is a compelling need to regulate, Canada will play its part in determining how best to achieve this.” It expressed interest in discussing definitions and what is autonomy, as well as the military potential and limits and what is meant by the notion of meaningful human control.

5. [Croatia](#) said that lethal autonomous weapons systems should be of direct concern to CCW states parties.
6. The [Czech Republic](#) said it is important to start work on protecting civilians from possible effects of lethal autonomous weapons systems “before they are developed due to their potential to “fundamentally change the conduct of armed conflict. It said that two national military experts would present during the experts meeting.
7. [Ecuador](#) gave the first statement of the general exchange of views, stating “we believe it’s unacceptable that fundamental decisions about life and death could be assigned to lethal autonomous weapons.” It expressed serious concern over the humanitarian and ethical challenges posed by the weapons and had many questions with respect to compliance with international law and asked who is “responsible for war crimes or violations”? Ecuador said steps must be taken to stop the development of lethal autonomous weapons systems through an international protocol prohibiting their design and use. It described the CCW’s Protocol IV, which preemptively banned blinding lasers, as “as excellent example.”
8. [Egypt](#) noted that international attention to lethal autonomous weapons systems has grown rapidly generating concerns like proportionality and accountability but no treaty body governs them. There are overarching international humanitarian law and human rights law concerns that need to be fully addressed. The need to take action on lethal autonomous weapons systems is “urgent and timely” as “experience shows it’s best to ban weapons before than after.” Egypt reiterated its catchphrase that “technology should not overtake humanity” and said the CCW process should lead to a prohibition on the weapons and propose a moratorium to allow engagement on this important subject.
9. [France](#) emailed its general statement in due to lack of time.
10. [Germany](#) declared that it does not intend to have any weapon systems that take away life and death decisions away from human control. It described human control as “indispensable” and a foundation of international humanitarian law and also emphasized the right to life and to dignity. Germany said there should be a common understanding in the international community that it is indispensable to have a human in control, stating “we cannot take humans out of the loop.” Germany noted that there are no lethal autonomous weapons systems yet and this makes dealing with the issue complex because the weapon doesn’t exist yet. It raised questions over legal aspects, accountability, definitions, and automated versus automatic systems.
11. The [Holy See](#) expressed concern at the notion of humanity relying on machines to attack human targets and cautioned, “good intentions could be the beginning of a slippery slope.” It said that compliance with international humanitarian law and human rights law was “not optional” and expressed concern at an “accountability vacuum.” Even if the weapons comply with the Holy See expressed concern at the possibility of the “dehumanization of warfare” as lethal autonomous weapons would “makes war too easy.” In answer to the fundamental question of whether machines can be programed to

truly replace human control in decisions over life and death, the Holy See firmly replied “no” and affirmed that “humans must not be taken out-of-the-loop ... meaningful human intervention must always be present.” The Holy See described CCW Protocol IV preemptively banning blinding lasers as showing the “imperative” of acting before the technology progresses and proliferates to “irreversibly alter the direction of warfare in a less humane direction.”

12. [India](#) recalled the preamble of the Convention on Conventional Weapons to protect civilians and acknowledged “important inputs” from the ICRC, UNIDIR, and civil society. India said the fact that some of countries involved in the development of lethal autonomous weapons systems are also active supporters of CCW “leads to interesting questions.” It said how we frame the terms of debate even at this nascent stage is vitally important as it will affect outcome and said it will be difficult to predict end result given there is no agreed-upon definition. India said one approach is to look at whether the weapons meet the criteria of existing international law and consider a ban or moratorium. India said there was a need for “increased systematic controls” in a manner that doesn’t further widen the technology gap among states or encourage lethal force to settle international disputes just because it affords lesser casualties on one side. It described the experts meeting as “a test case for CCW’s ability to respond to emerging technology” and expressed hope that “the CCW emerges strengthened from this process.”
13. [Ireland](#) said that the range of issues is an indication of the challenge and level of interest. Ireland said it looked forward to the presentations of civil society, the ICRC and UNIDIR. It said the ICRC statement focused on importance of human control “seems sensible to Ireland.” The definition of control was important as there’s a need to it effective not just nominal. Ireland acknowledged that the potential use of lethal autonomous weapons systems was “also important to consider.”
14. [Italy](#) made a brief statement noting that lethal autonomous weapons systems are not operational yet, but said an early assessment of their impact is of the “utmost importance.” It described the CCW as the “most appropriate framework” and welcomed the cross-dimensional approach provided by the experts meeting.
15. [Japan](#) expressed its appreciation for the role of civil society in drawing attention to concerns over lethal autonomous weapons systems. It described the experts meeting as important to develop a common understanding and said it was not convinced of the need to develop the weapons. Japan said it’s questionable if the weapons would comply with international humanitarian law and expressed interest in working on definitions. It concluded by stating the need to recognize the peaceful use of autonomous technology in the civilian field, as in the in the Fukushima disaster response.
16. Mali described the need to address lethal autonomous weapons systems as “becoming unavoidable.” It urged in-depth study of all parameters including on definitions and issues such as autonomous versus automatic systems and predictability. It also urged consideration of ethical and legal aspects. Mali expressed a strong commitment to be fully mobilized to deal with this issue, but said “it’s not enough for one country to act.”
17. [Mexico](#) said it was “happy” to see participation of experts from states and civil society as well as “timely” to prevent the possible negative consequences of

these weapons. Mexico said that the body of international humanitarian law is constantly developing and established limits, but at the heart is protection of the right to life. It noted that states have the obligation to defend the human right to life and monitor that new weapons comply with the principles of distinction and humanity. Mexico noted that lethal autonomous weapons systems “have the power to decide in an arbitrary fashion on life and death.” It said that the principle of humanity and the dictates of conscience are provided for in the Martens Clause and declared “there is absolutely no doubt that the development of these new technologies have to comply with such principles.”

18. The Netherlands said “never before” has a disarmament and arms control issue generated so much interest so quickly, which shows the important of role of the NGO community as well as the urgency of this issue. The Netherlands stated that the lethal autonomous weapons systems raise many legal, ethical, and other questions and problems that we’re only beginning to understand. It stated that MFA and Defence together with relevant civil society and academia partners have started discussions domestically and noted its support for a UNIDIR project. The Netherlands predicted that the “big challenge” will be to define what we should be looking at, but acknowledged the “core of the matter” is a weapons system that once activated can select and engage targets without human supervision or intervention.
19. [New Zealand](#) expressed support for the CCW’s “valuable discussion” to “intensify dialogue” on the implications of this emerging technology, but cautioned it is not the only forum that could address lethal autonomous weapons systems given the broad range of issues and interest. New Zealand noted that technology can improve lives, but also the prospect of affecting armed conflict. An assessment of benefits and risks to consider the implications. New Zealand urged the inclusion of all actors.
20. [Norway](#) noted that there are already weapons where meaningful human control is limited, but in its view a lethal autonomous weapons system would use lethal force to search, identify and attack targets without any meaningful human control. It said the weapons raise a number of ethical and legal questions and said Norway’s main concern is whether they could be programmed to operate within international humanitarian law and expressed concern that the weapons could “blur lines of accountability” because the “limited human role could end with no one being responsible.” Norway noted its disappointed to see few if any women among the expert presenters as “women can make a valuable contribution to peace and security.” It noted the impressive lineup of the side events by Campaign to Stop Killer Robots.
21. Pakistan said it fully agreed with the views of acting UN director-general that in the absence of any human intervention, such weapons would fact fundamentally change the nature of war. For Pakistan, lethal autonomous weapons systems represent the “next revolution in military development” after the invention of gunpowder and nuclear weapons. It described the weapons as “unethical because there is no longer a human in the loop and the power to make life and decisions are left in the hands” of machines. Pakistan said the weapons would lack morality and intuition and cannot be programmed to comply with international humanitarian law, create an “accountability vacuum” and would lower threshold of going to war amounting to “a situation of one-sided killing.” It warned against an “unchecked robots arms race” and said “we can’t afford to be complicit.” Pakistan called for a preemptive ban

- through a new protocol, describing the CCW as “well-suited” to respond to this challenge.
22. Russia cautioned that “we are only at the very beginning of the path on this issue” and “not fully clear about what we’re dealing with” as there’s a lack of definitions as to what is automated, autonomous, etc. Russia however stated it is clear that “we are talking about future and not existing types of weapons and new type of war.” Russia described the deliberations as being of a “very preliminary nature” with the goal being to identify the future of our work and “not prejudice” it. It noted that the CCW allows for discussion on the balance of humanitarian concerns and military issues.
  23. Sierra Leone said it hoped to hear about how advanced the technology is including some of the problems faced in designing systems which are bound to malfunction. It asked how could the “most sacred of rights” the right to life “be assigned to machines” and asked who will held responsible when they malfunction? The designer, the developer, the country? Sierra Leone asked what if these weapons fall into the wrong hands and warned “Frankenstein’s monster could come back to haunt its creators.”
  24. [South Africa](#) noted that the CCW grew from a wish of international community to ban or restrict use of weapons that have indiscriminate effects or cause unnecessary suffering. It said that the debate will grow in relevance and urgency as autonomous weapons develop. South Africa noted there is “lots of uncertainty because technology not mature” but acknowledged it is “only a matter of time before these weapons are deployed.” It said clarity is required as the weapons pose many questions and described humanitarian and ethical considerations as “of primary concern” as well as the question of whether they will comply with rules of international humanitarian law, and impact on human rights. It expressed concern that such technologies “will make it more difficult to attribute responsibility when violations occur.”
  25. [Spain](#) observed that “we don’t often have the good luck to witness the genesis of a new debate” but the “questions far outstrip the answers.” It noted that “for many robots is the next great revolution in military affairs” but said lethal autonomous weapons system “are not yet operative.” Spain noted that concern has now gone beyond public opinion, as we can see with academics and journalists and multilateral fora. It said “we believe it would be premature to propose a moratorium without first defining as a collective exercise what would be the scope and reach.” It noted the arguments that the weapons could be more predictable from a humanitarian viewpoint and rule out anger hate and panic, as well as reasoning, pity and empathy. Spain acknowledged that lethal autonomous weapons systems raise questions as to their compliance with international law. It urged discussion on specific definitions and the characteristics of autonomy.
  26. [South Korea](#) urged an “objective review of relevant technology” and cautioned that the discussions should not impose restrictions in particular robots for peaceful purposes, highlighting military use of robot technology to protect soldiers and clear explosive devices. South Korea acknowledged that we are “witnessing increasingly levels of autonomy” and described the CCW meeting as a “good moment” to consider the effects that lethal autonomous weapons systems could have on future armed conflict as well as the “challenges” posed to IHL. South Korea urged work to reach a “common understanding on terminology.” It announced that it is working to enact an

- “ethics charter” on robotic technology with provisions on ethical values and a code of conduct on the development, manufacture, and use of robots.
27. [Sweden](#) said that while some automatic systems already exist, it is not clear that fully autonomous weapons systems will be developed in the near future and “not clear to us there is a move towards systems giving full combat autonomy.” Sweden said that “humans should never be out-of-the-loop.” It said there is a threshold after which a weapon should be considered autonomous. Sweden noted its obligation to assess new weapons systems and be responsible legally.
  28. [Switzerland](#) noted the role of civil society in describing how the “influential campaign” has given the issue of lethal autonomous weapons systems “significant visibility” describing it as a “crucial precursor” for the meeting. Switzerland said “none of us want to see a battlefield with machines entrusted with deciding who lives and dies.” It urged a “much better understanding of developments and potential implications” before taking action to assess and identify the necessary approach. Switzerland asked if lethal autonomous weapons systems “could it ever assess the risks” or possess “qualitative judgment” required of international humanitarian law, but also noted that the legal basis that can be applied to lethal autonomous weapons systems is “quite solid.” It affirmed the right to life and human dignity and the need for consideration of the ethical dimension as well as change to the concept of war altogether, lowering the barrier of initiation of armed conflict. Switzerland asked what could constitute meaningful human control?
  29. The [UK](#) said that the subject of lethal autonomous weapons systems is a “a complex one” but its understanding is that “these discussions do not concern existing or remote systems.”
  30. The [US](#) expressed its commitment to participate fully in “productive discussions.” It cautioned against defining lethal autonomous weapons systems as discussion is only just beginning the US, noting it would be “imprudent if not impossible to define the term now.” The US however urged a focus on “the likely trajectory of technological development, not images from popular culture” and stated that “we are here to discuss future technology” and not referring to remotely operated systems (drones). The US said it is “premature” to determine where the CCW discussions might lead and urged against prejudging an outcome, but said it was good to talk about risks and possible benefits of the weapons, including humanitarian aspects. Finally, the US warned about the “complexity of the issue” and need to “think about full range of consequences of different approaches.” It said that states need robust policies and mentioned the DoD directive. The US said that states may need to tailor legal and policy policies.

[UNIDIR](#) reported on an initiative stemming from a 2013 recommendation by the Secretary-General’s Advisory Board on Disarmament Matters that the Secretary-General consider commissioning a comprehensive analysis on the development, proliferation and use of increasingly autonomous weapons technology—and suggested UNIDIR to carry out such a study. It noted that states have yet to decide whether to commission such a study, but in the interim UNIDIR has launched an 18-month project on the weaponization of increasingly autonomous technologies, with support of the Netherlands and Switzerland.

The [ICRC](#) presented highlights from its experts meeting attended by representatives from 21 states and 13 independent experts in late March to address the technical, military, legal, and humanitarian issues emerging from the debate about autonomous weapons systems. It noted that there were “differing views” on the adequacy of international humanitarian law to regulate the development and use of such weapons and also recognition of the importance of maintaining human control over the critical functions of selecting and attacking targets.

Nine NGOs statements were provided during the general exchange of views by the [Campaign to Stop Killer Robots](#) and its co-founders [AAR Japan](#), [Amnesty International](#), [Article 36](#), [Human Rights Watch](#), [ICRAC](#), [Nobel Women’s Initiative](#), [PAX](#), and [WILPF](#).

**Friday, 16 May, during the wrap-up session:**

1. [Argentina](#) described lethal autonomous weapons systems as a “controversy” that requires transparency, also with regard to Article 36 reviews. It said that issues such as definitions and scope are difficult because we are discussing systems that don’t exist and therefore said it is of “paramount importance” to focus on the concept of meaningful human control. International humanitarian law may apply to lethal autonomous weapons systems, but there are “numerous issues of compliance” and accountability. The weapons could have unpredictable consequences. The CCW process must continue.
2. Australia said it is “fully committed” to the CCW and would support continuing discussions on lethal autonomous weapons systems in this forum. It highlighted the need to review new weapon systems and how the technology is emerging and may be used.
3. [Austria](#) was the first speaker and said its main conclusion from the experts meeting was that “not everything that is technically possible should be developed” as “boundaries have to be respected” in international law and ethics. Austria said that number of delegations expressed the same position we hold, that weapons without meaningful human control are in contravention of international humanitarian law. It called for a freeze of current programs and to not to start any new ones.
4. Belarus made “comments of provisional nature” nothing that a majority of delegations have not yet formulated their position lethal autonomous weapons systems. It agreed with China that the discussion must be focused on the weapons are, if not by definition then at least idea by their characteristics. If can’t manage that, then a serious legal gap will appear and any further work will also be possible to discuss protocol. It said in Russian language, it is difficult to translate the definition provided by NGOs of a “man in-the-loop.” Perhaps certain aspects require more in-depth consideration.
5. Canada supports continued ongoing informal discussions at the CCW and said it would continue to closely monitor the topic. It said questions remain on the need to further explore ethical and political concerns, potential military and strategic impact, and the significance of meaningful human control as raised by several delegates. Canada also said humanitarian and state security concerns must be balanced in considering autonomous weapons.
6. China said it was a “rich” meeting and said it now needs to carry what went on back to capital in order to get a clear view of next steps. It noted that many

countries still have no clear policy and in process of formulating their policies. China said there are “deeper questions” and it is therefore “more complicated than expected.” It said it is difficult to carry out a review of existing or future weapons systems of this kind when we don’t know what want to review and evaluate.

7. [Croatia](#) said it doesn’t want to have any weapons systems that would take life-and-death decisions away from human control, describing the notion as contrary to international humanitarian law, and said it was “vital” to maintain human control. It also stressed that the human rights to life and dignity must not be taken away. Croatia commended civil society organizations who “provided depth” at the CCW experts meeting and said it favored continued talks on the issue.
8. Cuba said it has “serious concerns” about the ability of lethal autonomous weapons systems to comply with international humanitarian law and raised concerns over state responsibility and accountability. Cuba said we need a legally binding framework to prohibit the weapons before they are used. It said the “current time is right time” as the matter needs to be addressed in a “proactive fashion.” Cuba said the many resources invested in the development of autonomous weapons can’t be ignored and should be used for the benefit of humankind. Cuba concluded by calling for more attention to to the weapons and further discussion.
9. The Czech Republic said the CCW experts meeting discussion was useful and “eye opening.” It said its understanding was that lethal autonomous weapons systems are not inherently illegal and might be used within the boundaries of existing international humanitarian law. But do we know enough about these weapons of future and are concerns based on right conclusions? Do we know what want to regulate, limit, or ban? This is nothing like blinding lasers.
10. [Germany](#) stressed the importance of maintaining meaningful human control over the decision of life and death and said it was pleased this opinion was “widely shared by group.” It highlighted the need to consider definitions, lethality, and greater transparency including of Article 36 reviews of new weapon systems. Germany supported more debate in the CCW.
11. Guatemala said it was committed to continue in future meetings of the CCW on this topic.
12. India said that it has repeatedly stated that this emerging technology should be discussed within the context of objective and purposes of Convention on Conventional Weapons, a critical reference point. It described how we frame the terms of debate as “vitally important” as it will “impact on eventual outcome of deliberations.” India said the “vague concept” of human control need more in-depth discussion India said it would have “no objection” with a “continuation of discussions with the same mandate” in 2015.
13. Ireland paid tribute to civil society organizations for the series of lunchtime side events, which it said added to the conversation and shows there is substantial interest from both states and civil society in continuing the discussions. Ireland said that future discussion could take into account the legal framework, Article 36 weapons reviews, and the concept of meaningful human control.
14. Italy said that the experts meeting was useful in meeting its expectations and proposed that the CCW continue to go into more detailed discussions on lethal autonomous weapons systems.
15. Japan said it is willing to continue discussions on this subject in the CCW.
16. Mexico said there’s a need to go further in-depth and a feeling that lethal autonomous weapons systems cannot comply with principles of international

humanitarian law, in particular the principle of distinction. It stressed the need to further discuss human control, the definition of autonomy, the right to life, and best practices of Article 36 reviews. Mexico thanked all the presenters as well as civil society for its contributions to the meeting.

17. The Netherlands said there is room for further exchange of views with regard to the notion of meaningful human control as well as deeper discussion of ethical issues and further exchange of best practices on Article 36 weapons reviews. It supported further debate on lethal autonomous weapons systems in context of CCW.
18. New Zealand said this is only the beginning of the process and there are well-founded questions about whether existing framework of international law is sufficient. New Zealand agreed that human control will be key area of future work and said it is incumbent on all of us to consider questions relating to this technology. The representative said he could not convey a detailed national position, but committed to recommend that New Zealand support future work to consider on lethal autonomous weapons systems.
19. Pakistan said that lethal autonomous weapons systems would be illegal, inhumane, unaccountable, unethical, and lead to instability. It called for the weapons to be banned preemptively through a dedicated CCW protocol and said all states should place an immediate moratorium on their development and use. Pakistan cautioned that Article 36 reviews would not suffice as they are unilateral reviews and this requires a multilateral solution. Pakistan said the “vague” notion of meaningful human control does not satisfy us if it is seen as an alternative to a prohibition on fully autonomous weapons killing a human. Pakistan urged “clear and common rules with no uncertainty.” It concluded that while it didn’t expect a solution in one setting it does want formal discussions to negotiate a legally-binding instrument and not just endless discussions.
20. Russia said there were “a lot more questions than answers” on lethal autonomous weapons systems and cautioned the outcome of discussions should not predetermine their character. If we continue to do work on this complex new subject, we should do so in the existing format, but the decision will be taken at the meeting of states parties in November. There is no need to hurry. We are exploring unexplored territory and should not take any hurried decisions.
21. [Sierra Leone](#)
22. Spain described the CCW as the “appropriate forum” for continued discussion of the topic.
23. Sweden expressed support for continue discussing within the CCW.
24. [Switzerland](#) noted the relevance of the topic and said it was encouraged by the active commitment of delegations including civil society and academics. It said it was “vital” to place humanitarian and ethical considerations at the heart of the debate. Switzerland said there is a need to spell out what autonomous weapons systems would constitute and noted “broad consensus” that no weapon system should be undertaken without any genuine form of human control. Switzerland supported continued CCW work on an informal basis to facilitate exchanges among all stakeholders, but suggested thinking about the nature of the report and whether should take on more collective form or allow for drafting of recommendations. It asked if we should we work only in plenary or also in subgroups tasked with dealing with specific issues. Switzerland said the complex issues require several sessions of work over the course of year.

25. The [UK](#) said the CCW is the “right place” for discussions and recommended that the CCW’s meeting of states parties consider the value of informal discussions next year.
26. The US identified three salient points from the CCW experts meeting, first that there is a lack of clarity regarding decision-making and lethal autonomous weapons systems as “machines do not make decisions” but rather they receive inputs against parameters set by humans. The US however acknowledged the risks from a technical perspective of operating a system with primitive sensors in cluttered environment. Secondly, the US said that with respect to the references to the need for meaningful human control, this formulation doesn’t sufficiently capture full range of human activity in development and use. Finally, autonomous and automatic robotic applications in civilian developments advance at rapid pace that don’t want to see hindered. It is therefore premature to consider where these discussions should lead. The US expressed interest in continued informal discussions on national weapon evaluations on autonomous weapons and future weapons covering legal, policy, and tech aspects.

There were four other speakers in the wrap-up session: the [Campaign to Stop Killer Robots](#), its co-founder [ICRAC](#), the ICRC, and an expert presenter.

## **Annex II: Campaign delegation**

As provided to United Nations Office for Disarmament Affairs, 1 May 2014.

See: <http://bit.ly/1o6wCmt>

Convention on Conventional Weapons  
Experts meeting on lethal autonomous weapons systems  
Geneva  
13-16 May 2014

The Campaign to Stop Killer Robots delegation to the CCW's 2014 experts meeting on lethal autonomous weapons systems is comprised 40 campaigners from 12 member NGOs in countries including Austria, Canada, Germany, Japan, the Netherlands, Switzerland, UK, and US. Women make up half of the campaign's delegation to the CCW experts meeting. Biographies of selected campaigners can be found at the end of this delegation list.

### **Campaign to Stop Killer Robots**

Ms. Mary Wareham, Global Coordinator – Head of CCW Delegation  
Ms. Susan B. Walker, Consultant

### **Amnesty International – International Secretariat**

Mr. Brian Wood, Manager of Arms Control, Security Trade and Human Rights  
Ms. Rasha Abdul-Rahim, Campaign Coordinator  
Mr. Peter Splinter, Amnesty International Geneva Director  
Ms. Francesca Anderson, Amnesty International Geneva Intern

### **Association for Aid and Relief, Japan**

Ms. Yukie Osa, President  
Ms. Natsuki Matsumoto, Public Relations Officer

### **Article 36**

Ms. Laura Boillot, Project Manager  
Ms. Maya Brehm, Consultant  
Prof. Charli Carpenter, Consultant  
Mr. Richard Moyes, Director  
Mr. Thomas Nash, Director

### **ICBL-CMC Austria**

Ms. Judith Majlath, Director

### **Facing Finance**

Mr. Thomas Küchenmeister, Coordinator

### **Human Rights Watch**

Mr. Steve Goose, Arms Division Director  
Ms. Bonnie Docherty, Senior Researcher (also Harvard Law School International Human Rights Clinic)

Mr. Joey Klingler, Intern (Harvard Law School)  
Ms. Eve Kachaje, Intern (Harvard Law School)

**International Committee on Robot Arms Control**

Prof. Noel Sharkey, Chair  
Dr. Peter Asaro, Vice-Chair  
Dr. Jürgen Altmann, Vice-Chair  
Prof. David Akerson  
Prof. Matthew Bolton  
Prof. Denise Garcia  
Dr. Mark Gubrud  
Dr. Heather Roff  
Dr. Frank Sauer  
Ms. Jiou Park, Youth Delegate

**Mines Action Canada**

Mr. Paul Hannon, Director

**Nobel Women's Initiative**

Ms. Jody Williams, Chair and Nobel Peace Laureate

**PAX (formerly IKV Pax Christi)**

Ms. Miriam Struyk, Program Director  
Mr. Frank Slijper, Policy Advisor

**Pugwash Conferences on Science & World Affairs**

Amb. Jayantha Dhanapala, President

**Women's International League for Peace and Freedom**

Ms. Ray Acheson, Director, Reaching Critical Will  
Ms. Beatrice Fihn, Project Manager, Reaching Critical Will  
Ms. Mia Gandenberger, Associate  
Ms. Gabriella Irsten, Associate  
Ms. Viola Giuliano, Intern

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## Annex III: Selected media coverage

There was strong media interest in the conference resulting in widespread print/online coverage as well as some audio and video pieces in:

- Countries including Australia, Belgium, [Canada](#), [France](#), Germany, [Iran](#), [Italy](#), Japan, [Netherlands](#), New Zealand, [Russia](#), Switzerland, [UK](#), and US.
- Wire services including [Associated Press](#), [AFP](#), [BBC](#), [CNN](#) (The Lead), [EuroNews](#), [SkyNews](#) and [TIME](#).
- US media including [ABC News](#), [Al Jazeera America](#), [CBS News](#), [Forbes](#), [Foreign Affairs](#), [FOX News](#), [The Daily Caller](#), [NBC News](#), [The Washington Post](#) and [Wall Street Journal](#).
- Technology press including [ComputerWorld](#), [Endgaget](#), [Mashable](#), Vice's [Motherboard](#), [PC World](#), and [Vox](#).

The campaign's coordinator recorded long interviews for [Radio New Zealand](#) (11 mins) and [Fire Dog Lake](#) (18 mins) podcast. It was no coincidence that the Colbert Report did a [segment on killer robots](#) on its show on 15 May. Some had fun with the headlines including [The Verge](#) and [HRW](#).

### Selected media coverage

Please note that the following list is by no means a complete record of media coverage for the CCW experts meeting.

'Killer robots' to be debated at UN, *BBC Technology*, May 9, 2014.  
<http://www.bbc.com/news/technology-27343076>

The Case Against Killer Robots by Denise Garcia, *Foreign Affairs*, May 10, 2014.  
<http://www.foreignaffairs.com/articles/141407/denise-garcia/the-case-against-killer-robots>

Should the world kill killer robots before it's too late? by Ishaan Tharoor, *The Washington Post*, May 12, 2014.  
<http://www.washingtonpost.com/blogs/worldviews/wp/2014/05/12/should-the-world-kill-killer-robots-before-its-too-late/>

United Nations To Debate Ban On 'Killer Robots' by Giuseppe Macri, *The Daily Caller*, May 12, 2014. <http://dailycaller.com/2014/05/12/united-nations-to-debate-ban-on-killer-robots/>

International killer robots could start new arms race, human rights groups say by Tom Kutsch, *Al Jazeera America*, May 12, 2014.  
<http://america.aljazeera.com/articles/2014/5/12/killer-robots-ban.html>

"Killer robots" could threaten basic human rights, activists warn, *CBS*, May 12, 2014.  
<http://www.cbsnews.com/news/killer-robots-could-threaten-basic-human-rights-activists-warn/>

'Ban Killer Robots' Before They Even Exist by Allstair Bunkall, *Sky News*, May 12, 2014. <http://news.sky.com/story/1259885/ban-killer-robots-before-they-even-exist>

Ban killer Robocops before it's too late, rights groups say by Tom Hornyak, *PC World*, May 12, 2014. <http://www.pcworld.com/article/2153960/ban-killer-robocops-before-its-too-late-rights-groups-say.html>

Scientists Debate Killer Robots at U.N. Conference by Keith Wagstaff, *NBC News*, May 12, 2014. <http://www.nbcnews.com/tech/security/scientists-debate-killer-robots-u-n-conference-n103406>

Should Killer Robots be Banned in Policing? by Mary-Ann Russon, *IBT*, May 12, 2014. <http://www.ibtimes.co.uk/should-killer-robots-be-banned-policing-1448189>

Puny humans meet to decide fate of killer robots by Adrienne Jeffries, *The Verge*, May 12, 2014. <http://www.theverge.com/2014/5/12/5710958/un-to-debate-killer-robots>

Drones nouvelle génération : à quelle guerre faut-il nous préparer ? by Xavier de La Porte, *Rue 89*, May 12, 2014. <http://rue89.nouvelobs.com/2014/05/12/drones-nouvelle-generation-a-quelle-guerre-faut-preparer-252100>

Les ONG font campagne contre les «robots tueurs», by Alain Jourdan, *24 heures*, May 12, 2014. <http://www.24heures.ch/monde/ong-campagne-robots-tueurs/story/12995496>

Une première réunion internationale pour réguler l'usage des « robots tueurs », by [Nathalie Guibert](#), *Le Monde*, May 13, 2014. [http://www.lemonde.fr/international/article/2014/05/13/une-premiere-reunion-internationale-pour-reguler-l-usage-des-robots-tueurs\\_4415847\\_3210.html](http://www.lemonde.fr/international/article/2014/05/13/une-premiere-reunion-internationale-pour-reguler-l-usage-des-robots-tueurs_4415847_3210.html)

Un congrès à l'ONU sur... les robots tueurs, by Erwan Lecomte, *Sciences et Avenir*, May 13, 2014. <http://www.sciencesetavenir.fr/high-tech/20140513.OBS6953/un-congres-a-l-onu-sur-les-robots-tueurs.html>

UN Debates Future Ban On Killer Robots by John Heilprin, *Associated Press*, May 13, 2014. <http://bigstory.ap.org/article/un-weighs-laws-future-killer-robots>

U.N. Weighing Laws for 'Killer Robots' of the Future by AFP, *Yahoo*, May 13, 2014. <https://www.yahoo.com/tech/u-n-weighing-laws-for-killer-robots-of-the-future-85624562444.html>

UN Official Urges World Governments To Take 'Bold Action' On Killer Robots by Brid-Aine Parnell, *Forbes*, May 13, 2014. <http://www.forbes.com/sites/bridaineparnell/2014/05/13/un-official-urges-world-governments-to-take-bold-action-on-killer-robots/>

UN debates whether we should exterminate killer robots, *Euronews*, May 13, 2014. <http://www.euronews.com/2014/05/13/un-debates-whether-we-should-exterminate-killer-robots/>

Why the United Nations Is Talking About Killer Robots by Alyssa Newcomb, *ABC News*, May 13, 2014. <http://abcnews.go.com/Technology/united-nations-talking-killer-robots/story?id=23694768>

UN meets to weigh fate of 'killer robots' Fox News, May 13, 2014. <http://www.foxnews.com/tech/2014/05/13/un-meets-to-weigh-fate-killer-robots/>

HRW: autonomous weapons should be banned by international convention by Kimberly Bennet, *JURIST*, May 13, 2014. <http://jurist.org/paperchase/2014/05/hrw-autonomous-weapons-should-be-banned-by-international-convention.php>

It's Judgment Day for Killer Robots at the United Nations by Amir Mizroch, *Wall Street Journal*, May 13, 2014. <http://blogs.wsj.com/digits/2014/05/13/its-judgment-day-for-killer-robots-at-the-united-nations/?mod=rss> Technology

Killer robots should be banned 'before it is too late', warns Human Rights Watch by Heather Saul, *Independent*, May 13, 2014. <http://www.independent.co.uk/life-style/gadgets-and-tech/killer-robots-should-be-banned-before-it-is-too-late-warns-human-rights-watch-9363695.html>

UN debates a preemptive ban on killer robots by Jon Fingas, *Engadget*, May 13, 2014. <http://www.engadget.com/2014/05/13/un-debates-ban-on-killer-robots/>

UN Considers Banning Killer Robots by Colin Daileida, *Mashable*, May 13, 2014. <http://mashable.com/2014/05/13/un-ban-killer-robots/>

Killer Robots Could Be More Humane than Humans by Meghan Neal, *Motherboard*, May 13, 2014. <http://motherboard.vice.com/read/how-killer-robots-could-actually-be-more-humane-than-humans>

UN ponders law on 'killer robots,' *Belfast Telegraph*, May 13, 2014. <http://www.belfasttelegraph.co.uk/news/world-news/un-ponders-law-on-killer-robots-30270151.html>

The UN And U.S. Pentagon Are Actively Working To Save Us From Killer Robots And Zombies by Laura Stampler, *TIME*, May 14, 2014. <http://time.com/99430/the-un-and-u-s-pentagon-are-actively-working-to-save-us-from-killer-robots-and-zombies/>

None of the UN Experts Debating Killer Robots Are Women by Meghan Neal, *Motherboard*, May 14, 2014. <http://motherboard.vice.com/read/none-of-the-un-experts-debating-killer-robots-are-women>

Do women have anything to say about autonomous weapons? by Sarah Knuckey, *Just Security*, May 14, 2014. <http://justsecurity.org/10424/women-autonomous-weapons/>

Killer robots? What could go wrong? Oh, yeah ... by Evan Schuman, *Computer World*, May 14, 2014. [http://www.computerworld.com/s/article/9248334/Evan\\_Schuman\\_Killer\\_robots\\_What\\_could\\_go\\_wrong\\_Oh\\_yeah\\_...?taxonomyId=11](http://www.computerworld.com/s/article/9248334/Evan_Schuman_Killer_robots_What_could_go_wrong_Oh_yeah_...?taxonomyId=11)

First UN meeting on 'killer robots' opens, *PressTV*, May 14, 2014. <http://www.presstv.ir/detail/2014/05/14/362586/1st-un-meeting-on-killer-robots-opens/>

Terminator judgment day? UN mulls preemptive 'killer robot' ban, *RT*, May 14, 2014. <http://rt.com/news/158912-un-robots-killer-ban/>

Le Regne Des Robots Tueurs? *CanalPlus*, May 15, 2014. <http://www.canalplus.fr/c-infos-documentaires/c-la-nouvelle-edition/pid6851-les-extraits.html?vid=1070779>

L'ascesa dei killer robot, l'Onu discute se fermarli o meno by Claudio Simbula, *Wired*, May 15, 2014. <http://www.wired.it/attualita/tech/2014/05/15/lascesa-dei-killer-robots-lonu-discute-se-fermarli-o-meno/>

Calls for ban on "killer" robots in theatres of war (Interview with Ambassador Jayantha Dhanapala, Pugwash), RN Drive Australian Broadcasting Corporation, 15 May 2014. <http://www.abc.net.au/radionational/programs/drive/calls-for-ban-on-22killer22-robots-in-theatres-of-war/5453440>

Military robots are coming. Here's how they will change warfare. by Zach Beauchamp, *Vox*, May 16, 2014. <http://www.vox.com/2014/5/16/5723366/UN-debate-killer-robots-autonomous>

Mary Wareham interview with Wallace Chapman, *Radio New Zealand*, May 18, 2014. <http://www.radionz.co.nz/national/programmes/sunday/audio/2596336/mary-wareham>

Podcast: Who Would Be Responsible if an Autonomous Killer Robot Committed War Crimes? *Fire Dog Lake*, May 18, 2014. <http://dissenter.firedoglake.com/2014/05/18/podcast-who-would-be-responsible-if-an-autonomous-killer-robot-committed-war-crimes/>

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