



Report on Activities

Convention on Conventional Weapons second informal meeting of experts on lethal
autonomous weapons systems
United Nations Geneva
13-17 April 2015

About this report

This Campaign to Stop Killer Robots report details activities undertaken at the second Convention on Conventional Weapons (CCW) experts meeting on fully autonomous weapons held at the United Nations in Geneva on 13-17 April 2015. It reviews government contributions to the meeting and records the campaign's contributions.

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This report is available on the Campaign to Stop Killer Robots website at: www.stopkillerrobots.org

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Summary Overview

Representatives from 90 countries (76 states parties, one signatory, and 13 non-signatories) participated in the second Convention on Conventional Weapons (CCW) informal meeting of experts on lethal autonomous weapons systems at the United Nations (UN) in Geneva on 13-17 April 2015.¹

Representatives from UN agencies and the International Committee of the Red Cross also participated in addition to a delegation of 50 campaigners from a dozen members of the Campaign to Stop Killer Robots, including Nobel Peace Laureates, roboticists, scientists, academics, lawyers, military veterans, and industry representatives.

Ambassador Michael Biontino of Germany chaired the meeting and invited ambassadors from Albania, Chile, Hungary, Finland, Sierra Leone, South Korea, Sri Lanka, and Switzerland to serve as “friends of the chair” facilitating thematic sessions on technical, legal, and overarching issues including ethics, human rights and general security aspects. A total of 30 academics and other individuals—including ten women—made presentations to lead off deliberations in each session. At the previous meeting held in May 2014, there were no female experts in the line-up of 18 presenters.

This strong and diverse participation resulted in the richest and most in-depth deliberations held to date on this issue, with an encouragingly high level of engagement and interest by an even larger number of states than at the first meeting. Bolivia, Chile, Colombia, Denmark, Poland, Sri Lanka, and Zambia provided their views on fully autonomous weapons for the first time during the meeting.²

At the first CCW experts meeting held in May 2014, the imperative of maintaining meaningful human control over targeting and attack decisions emerged as the primary

¹ A total of 87 states participated in the previous meeting held in 2014. The CCW’s formal title is the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects. A total of 121 countries are ‘high contracting’ or state parties to the CCW, while five countries have signed but not ratified the CCW. See: <http://bit.ly/1h6X6jB>. As of June 2015, two countries have ratified the CCW in 2015: Palestine on 5 January and Algeria on 6 May.

² A total of 58 nations have publicly expressed their views on “killer robots” since 2013, mostly to indicate their support for multilateral talks on concerns raised: 44 in 2013, another seven in 2014, and seven more states in 2015. During 2013, a total of 44 states spoke publicly for the first time in a multilateral forum on the matter of fully autonomous weapons (date of first statement): Algeria (30 May), Argentina (30 May), Australia (14 Nov.), Austria (30 May), Belarus (14 Nov.), Belgium (11 Nov.), Brazil (30 May), Canada (11 Nov.), China (30 May), Costa Rica (29 Oct.), Croatia (15 Nov.), Cuba (30 May), Ecuador (29 Oct.), Egypt (30 May), France (30 May), Germany (30 May), Ghana (14 Nov.), Greece (29 Oct.), Holy See (14 Nov.), India (30 Oct.), Indonesia (30 May), Iran (30 May), Ireland (29 Oct.), Israel (15 Nov.), Italy (14 Nov.), Japan (29 Oct.), Lithuania (14 Nov.), Madagascar (14 Nov.), Mexico (30 May), Morocco (30 May), Netherlands (29 Oct.), New Zealand (30 Oct.), Pakistan (30 May), Russia (30 May), Sierra Leone (30 May), South Africa (30 Oct.), South Korea (14 Nov.), Spain (11 Nov.), Sweden (30 May), Switzerland (30 May), Turkey (14 Nov.), Ukraine (14 Nov.), UK (30 May), and US (30 May). During 2014, seven states spoke on the topic for the first time: Bulgaria (23 Oct.), Czech Republic (13 May), Finland (22 Oct.), Guatemala (16 May), Mali (13 May), Norway (13 May), and Palestine (13 Nov.). As of May 2015, seven more states had spoken on the matter for the first time: Bolivia (17 Apr.), Chile (13 Apr.), Colombia (17 Apr.), Denmark (13 Apr.), Poland (13 Apr.), Sri Lanka (13 Apr.), and Zambia (17 Apr.).

point of common ground for many of the participating nations. The Campaign to Stop Killer Robots urges governments to enshrine the principle of meaningful human control in new international law by preemptively banning the development, production, and use of fully autonomous weapons.

In the opening plenary debate, two-thirds of the states that spoke referred to the need for meaningful or effective or adequate human control. Countries continued to return to the notion of meaningful human control throughout the week indicating its central relevance as a “touchstone” for addressing fully autonomous weapons. Russia for the first time affirmed the “unacceptability of losing control” of weapons systems.

The deliberations showed that the concept of meaningful human control is not understood by all in the same way, but it has emerged as a point of convergence for many, helping to set a clear direction for discussions moving forward. For the Campaign to Stop Killer Robots, the term meaningful human control simply mirrors our call for a comprehensive ban. A prohibition on development, production, and use would be a negative obligation; a requirement for meaningful human control would be a positive obligation. But the result is the same.

During the meeting, Cuba, Ecuador, the Holy See, and Pakistan again forcefully reiterated their explicit support for a preemptive ban, though ban supporter Egypt was absent. For the first time, Bolivia, Ghana, and Palestine said they supported a preemptive ban, while Croatia, Ireland, Sri Lanka, and others said a prohibition must remain on the table for consideration.

During the 2015 CCW experts meeting, not a single state said it is actively pursuing fully autonomous weapons or that their armed forces will have to have them in the future. Yet there was still extensive discussion about the potential benefits of such weapons and what advantages technological advancements might bring.

The United States and Israel were the only states to explicitly say that they were keeping the door open to the acquisition of fully autonomous weapons. Canada, France, Japan, and the UK each explicitly said they have no plans to ever acquire fully autonomous weapons. Yet none of these states expressed their support for the logical conclusion of a preemptive prohibition or for any type of new law.

The second experts meeting deepened states’ engagement on the full range of concerns related to fully autonomous weapons including topics rarely if ever considered by the CCW such as ethics and human rights. Significant attention was devoted to the Martens Clause and its applicability to this issue, including by Russia. This indicates the question of whether fully autonomous weapons run counter to the dictates of public conscience and the principles of humanity will need to be answered.

On the final day of the meeting, Amb. Biontino presented a 27-page report on the deliberations prepared in his personal capacity to be delivered to the next annual CCW meeting on 13 November 2015. Amb. Ravinath Aryasinha of Sri Lanka will serve as president of the meeting on behalf of the Non-Aligned Movement (NAM) group. At that meeting, nations will decide by consensus on whether to renew the mandate and continue discussions, including whether to move to a more formal phase of expanded deliberations.

The nature of the work going forward (formal or informal), content of a future mandate (areas of focus), and amount of time to be dedicated (one week again, or additional time) will be the focus of consultations from now until the November meeting.

The Campaign to Stop Killer Robots is calling on states to agree to establish a formal Group of Governmental Experts to advance deliberations to a new level, demonstrate progress, and emphasize that the work is outcome-oriented and not just a discussion forum. An ambitious mandate is needed so that states can act with the urgency that the issue demands as technology races forward.

An open-ended Group of Governmental Experts has been the established method of work for CCW deliberations over the past two decades on concerns ranging from landmines to explosive remnants of war to cluster munitions. Based on that long-standing precedent, the Group of Governmental Experts would be open to all interested states regardless of whether they have joined the framework convention and its five protocols, as well as to NGO representatives. Key documents would be translated into the official UN languages. A GGE would therefore help to enable the broadest possible participation by all states, including developing nations, as China and others have requested.

A Group of Governmental Experts would pave the way for a decision by states at their Fifth CCW Review Conference in late 2016 to adopt a negotiating mandate aimed at swiftly achieving a new Protocol VI to address the concerns raised over fully autonomous weapons systems.

A handful states at the 2015 CCW experts meeting suggested further CCW consideration be given to transparency measures and national-level weapons reviews required by Article 36 of Additional Protocol I (1977) of the 1949 Geneva Conventions. These measures alone are not nearly enough to deal with the multiple challenges posed by fully autonomous weapons. As the ICRC [observed](#) in its concluding statement to the meeting, efforts to encourage implementation of national legal reviews are no substitute for CCW states to consider possible options at the international level to address the legal and ethical limits to autonomy in weapon systems.

Outside of the CCW process, the Campaign to Stop Killer Robots calls on all nations to:

- Implement the recommendations on autonomous weapons contained in the 2013 and 2014 reports by the UN Special Rapporteur on extrajudicial, summary or arbitrary executions, including the call for a moratorium on fully autonomous weapons until new international law is achieved.
- Develop and articulate national policies on fully autonomous weapons in consultation with relevant actors, including civil society. They should articulate other ways that these weapons can be addressed at the international, regional, and national levels and become champions of the ban call.

Report on the Second Meeting

Lead-Up

After holding their first informal meeting of experts on lethal autonomous weapons systems on 13-16 May 2014, states agreed by consensus at their annual CCW meeting in November 2014 to continue the CCW work on killer robots by holding another five-day meeting in 2015. President of the CCW's 2014 annual meeting Amb. Remigiusz A. Henczel of Poland consulted and then appointed Amb. Michael Biontino of Germany to chair the 2015 experts meeting.

Amb. Biontino consulted with states and other actors in the months leading-up to the 2015 experts meeting. A few weeks before the 2015 CCW experts meeting, he circulated a [“food-for-thought” paper](#) detailing issues to be covered at the meeting together with an [annotated programme of work](#) for the meeting, both translated into the official UN languages. Five nations responded to Biontino suggestion to submit papers in advance of the meeting elaborating on their policy views: Austria, Chile, Cuba, Japan, and Pakistan.

Campaign representatives attended several meetings held in Europe and North America in late 2014 and early 2015 in advance of the CCW experts meeting, including:³

- At their summit in Rome on 12-14 December 2014, Jody Williams and other Nobel Peace Laureates issued a [final declaration](#) affirming their support for the call to preemptively ban fully autonomous weapons;
- A [panel](#) on advances in artificial intelligence and robotics at the World Economic Forum in Davos on 22 January 2015, where Ken Roth, the executive director of Human Rights Watch, argued for a ban on fully autonomous weapons;
- The [annual conference](#) of the Association for the Advancement of Artificial Intelligence (AAAI) in Austin, Texas on 29 January, which Steve Goose of Human Rights Watch participated in a debate on the matter of fully autonomous weapons;
- A [meeting](#) convened by the Future of Life Institute in Puerto Rico for prominent scientists and researchers from industry and academia, including Tesla CEO Elon Musk and Skype co-founder Jaan Tallinn. Heather Roff, a member of campaign co-founder the International Committee for Robot Arms Control (ICRAC) made a presentation to the meeting on autonomous weapons;
- A workshop on the legal implications of future weapons technologies, including autonomous weapons systems convened by the US Naval War College and International Committee of the Red Cross on 24-25 February. Representatives from the armed forces of US, Australia, Canada, Israel, and the UK attended as well as Steve Goose of Human Rights Watch and ICRAC's Noel Sharkey.

³ This is a partial list for illustrative purposes only. The campaign's previous report on activities from the CCW's annual meeting in November 2014 details outreach and activities undertaken in 2014, while this overview covers the period since the annual meeting took place in November 2014.

- Center for a New American Security workshops held in Washington DC on meaningful human control on 8 December 2014 and on ethical autonomy on 26 February 2015.
- A roundtable meeting of the UK's All Party-Parliamentary Group on weapons and protection of civilians in London on 25 March.

Opening and General Exchange

On Monday, 13 April, Amb. Aryasinha of Sri Lanka, president-elect of the next annual meeting of the CCW to be held in November 2015, opened the second meeting of experts on lethal autonomous weapons systems and introduced Amb. Biontino as chair of the meeting.

A video of [remarks](#) by outgoing UN disarmament chief Ms. Angela Kane was shown. Kane suggested CCW states parties consider questions including how autonomous technologies are currently being used in weapons systems and the level of human supervision “required to ensure that the use of autonomous weapons systems is in compliance with international humanitarian law.” Kane also acknowledged the “critical role played by civil society, especially the Campaign to Stop Killer Robots and its many constituents, in driving international attention to this issue.”

A total of 32 countries spoke in the opening general debate: Argentina, Austria, Brazil, Canada, Chile, China, Croatia, Cuba, Czech Republic, Denmark, Ecuador, France, Germany, Ireland, Israel, Italy, Japan, Republic of Korea, Mexico, Netherlands, Pakistan, Palestine, Poland, Sierra Leone, Spain, South Africa, Sri Lanka, Sweden, Switzerland, Turkey, UK, and US. The meeting also heard from the European Union as well as UNIDIR, UNICRI, ICRC, and six co-founders of the Campaign to Stop Killer Robots: Article 36, Human Rights Watch, International Committee for Robot Arms Control (ICRAC), Mines Action Canada, PAX, and the Women's International League for Peace and Freedom (WILPF).

Of the states that spoke, 18 expressed interest in the concept of “meaningful human control” with many suggesting it be a central aspect considered in the CCW deliberations.⁴ Austria provided a working paper with its views in advance of the meeting. France described the concept of meaningful human control as “too vague.” The US talked about its 2012 Department of Defense policy, which it said aims to “ensure appropriate levels of human judgment over the use of force.”

Cuba, Ecuador, and Pakistan urged a ban on fully autonomous weapons as did all the NGO speakers while Sri Lanka said the option of a preemptive ban must be discussed by the CCW in the belief that “prevention is always better than cure.” Croatia said, “an international prohibition of weapons systems operating without meaningful human control should not be something unthinkable, particularly given the calls for a moratorium.” Ireland noted “the mandate of the CCW and its Protocols is to regulate or ban certain categories of conventional weapons that have effects which trouble the conscience of humanity.” Chile said it is unacceptable for a machine to decide who lives and who dies and suggested an additional CCW protocol on autonomous weapons.

⁴ Argentina, Austria, Brazil, Chile, Croatia, Czech Republic, Denmark, Ecuador, Germany, Greece, Ireland, Japan, Republic of Korea, Mexico, Netherlands, South Africa, Spain, Sweden, and Switzerland.

China described the “prospect of cold-blooded killing” by autonomous weapons as “worrisome” and also cited concerns that the weapons would upset the international strategic balance and affect arms control. China observed that it is “better to take precautionary measures than deal with the aftermath” when it comes to autonomous weapon systems.

Israel was alone in suggesting there might be benefits, urging states to keep “an open mind” with respect to “possible positive capabilities” of future systems, which it said “could take on a variety of forms, have a wide array of capabilities and nuances, and may be intended to operate in a range of operational environments.” Israel also said that the weapons “must comply” with applicable existing laws of war, but argued their “prudent employment ... may even promote compliance” with international humanitarian law.

Canada, Czech Republic, Netherlands, UK, and the US highlighted the weapons reviews required under article 36 of Additional Protocol I of the Geneva Conventions as a way to assess autonomous weapons.

Session I: Technical Issues

On Monday afternoon, Amb. Yvette Stevens of Sierra Leone chaired the first session on technical issues, which featured presentations by three invited expert speakers: [Stuart Russell](#), [Andrea Omicini](#), and [Paul Scharre](#).⁵ The aim of the session was consider the “state of play” with respect to the development of lethal autonomous weapons systems as well as relevant developments relating to autonomy in the civil and military sectors.

In the Q & A six states and one NGO asked questions: Brazil, Canada, Cuba, Czech Republic, Sierra Leone, and UK. These contributions are summarized below:

- Canada asked several questions, including how lethal autonomous weapons systems could be incorporated into deterrence strategies.
- ICRAC asked Russell about the position of the artificial intelligence community on lethal autonomous weapons systems.
- The UK asked what to do when the only available choices are bad choices and worst choice is taking no decision at all.
- Cuba asked about the possible impact on civilians and the environment including marine.
- ICRAC asked about inspection of software and accountable human control.
- Sierra Leone asked how to retain a human in the loop.
- China asked about the possible relevance of cyberwarfare and attacks.
- Brazil and Czech Republic also asked questions.

Russell urged that action be taken soon on autonomous weapons because progress in the development of artificial intelligence is proceeding rapidly. He said that defining autonomy is “straight-forward” and should not be an obstacle to reaching agreement. It should be possible to examine software or hardware and decide if it allows for meaningful human control. Russell said a ban on lethal autonomous weapons would

⁵ This constituted the only all-male panel of the 2015 experts meeting.

not inhibit the development of artificial intelligence applications that are beneficial to humanity. He said the artificial intelligence and robotics community stands ready to help and is in the process of taking a position on lethal autonomous weapons systems and the call for a ban as its reputation is at risk if it is silent.

Session II: Technical Issues - continued

On Tuesday morning, Amb. Urs Schmid of Switzerland chaired the second session on technical issues, which featured five speakers: [Elizabeth Quintana](#), [Heather Roff](#), [Wolfgang Richter](#), [Darren Ansell](#), and [Frédéric Vanderhaegen](#).

The first three speakers were invited to address the “military rationale” for lethal autonomous weapons systems, including a review of the advantages and disadvantages provided by the weapons and autonomy in warfare more generally. Advantages included expanded capabilities across theatres of operation, potential reduced costs including personnel, and increased situational awareness. The concerns included interoperability issues, unintended consequences, difficulty of ensuring distinction and the risk of non-proportional damage, increased likelihood of military intervention, potentially unlimited use, destabilized security environments, arms races and proliferation, and use by non-state armed groups as well as in human rights abuses or in law enforcement situations.

Ansell highlighted the challenge of ensuring against reliability and vulnerability problems in autonomous weapons software, cautioning that failure could lead to unintended fatalities. He noted that false or missing software requirements, incorrect algorithms or code, inadequate testing, incorrect or unexpected usage of the software, and possible vulnerabilities to cyber attacks could expose systems to risk. Vanderhaegen discussed the instability of autonomous weapons systems due to dissonance, which affects knowledge, availability, or prescription in a system.

During the Q & A, nine countries (Canada, Cuba, India, Ireland, South Korea, Norway, Palestine, Sierra Leone, Switzerland, UK, and US) and two NGOs intervened, most to ask questions of the expert presenters:

- The UK asked about the potential for lethal autonomous weapons systems to encourage arms races and destabilize the international situation. It proposed transparency measures for the development of these systems, their doctrines, and article 36 processes.
- Canada asked about the humanitarian and institutional rules when the weapons are used in a military context.
- Palestine observed that the weapons would “reduce the probability of peace between people.”
- Cuba called for a legally binding instrument to preemptively ban the weapons.
- Sierra Leone asked for consideration of the lethality of the weapons and not just the fact they are autonomous.
- Switzerland asked how autonomous weapons would affect existing command and control structures.
- Ireland asked if these systems could learn something that could make the weapon have unintended consequences. Is the learning of the machine itself dangerous?

- India said lethal autonomous weapons would “turn Clausewitz on his head” and asked how these weapons will change wars, which are supposed to be controlled violence in states that use weapons for a strategic purpose. If one resorts to lethal autonomous weapons systems what about terminating the conflict - when do you stop? When is a political objective achieved?
- The US made an intervention that described the potential for lethal autonomous weapons systems to be a force multiplier and to address risks against humans in compromised environments. It said the 2012 Department of Defense policy represents the minimum safety guards for these weapons to ensure that these systems work in the way they are supposed to and minimize failure and ensure safety and anti-tamper measures. Primary difficulty is optimizing the relationship of human and machines. All systems have software behaviors and they must be developed and tested in a way that these systems act the way we want them to.
- South Korea asked about the possibility of failure in regards to resilience.
- CNAS said, “we already have weapons that can select targets without human intervention.”
- Norway asked about implications for the protection of civilians.
- ICRC asked about the main issues of these weapons for global security.

Session III: Characteristics

Tuesday afternoon saw the first session on “characteristics” chaired by Amb. Päivi Kairamo of Finland with presentations by [Maya Brehm](#), [Neil Davison](#), [Marcel Dickow](#), and [Nehal Bhuta](#). The session looked at the key characteristics that could assist in understanding lethal autonomous weapons systems as well as the notion of “meaningful human control” of a weapon system and autonomy in the “critical functions.”

Unlike the previous Q & As, most speakers delivered detailed interventions this time with contributions from 11 states (Australia, Belarus, China, Cuba, France, India, Netherlands, Pakistan, Poland, Switzerland, and UK) and ICRC:

- Switzerland described meaningful human control as “an ethical not legal issue” and recommended discussing it in relation to a clearly identified goal. It said notions such as meaningful, effective, adequate, and appropriate have “no meaning by themselves.”
- France acknowledged the “large number” of references to meaningful human control, but said the “notion has the inconvenience of being too vague.” France said that “autonomy seems more specific” and said predictability might be “an interesting path for us to go down.” France said it has no plans for autonomous weapons that deploy fire; it relies entirely on humans for fire decisions.
- The Netherlands noted that levels of predictability in human control already form part of many weapons reviews. It asked what would be the advantage to focusing on lethal autonomous weapons systems.
- Australia asked a question about target selection.
- [Poland](#) became the first at the CCW meeting to give meaningful human control the acronym of “MHC” and asked about using it as “as a starting point for developing national strategies” on lethal autonomous weapons systems.

Poland said, “at [the] present level of technological advancement,” there are reasons for concern that autonomous weapons will not be able to meet key principles of international humanitarian and human rights law.

- The UK said its view is that lethal autonomous weapons systems “do not exist and may never exist” and listed ten “target validation” questions that it said are “part of an iterative process carried out by targeting staff” noting “this is not an exhaustive list. The UK observed that “the ability of a robotic system to address these questions, in order to develop a targeting decision, would require a level of programming and technical complexity beyond current technology and beyond even that envisaged for the future. To put it another way, the above process is fundamentally based upon human judgment.” It affirmed “the UK Government does not possess fully autonomous weapons systems and has no intention of developing them. While a limited number of defensive systems can be operate in automatic mode, there is always a person involved in setting the parameters of any such mode.”
- China said it sees the support for the concept of meaningful human control, but that does not mean that states that have not spoken are also in favor. We can’t jump to the conclusion that everyone is in favor of this notion.
- Belarus said it agrees with France on the need to “shed more light” on the concept of meaningful human control because we’re talking about lethal autonomous weapons systems that “don’t exist.” Standards are needed as international law can’t deal with this situation.
- Cuba said while lethal autonomous weapons systems don’t yet exist there are many questions about accountability and legality around their use that must be answered. It asked about how to establish legal responsibility under the International Criminal Court or other mechanisms.
- India said it expressed skepticism at the concept of meaningful human control at the previous meeting and “our doubts have deepened” as it is not a stand-alone idea and the meaning, purpose, and implications of the use of the term are unclear.
- Pakistan said it is “equally confused” by the concept of meaningful human control. It asked “should a machine be given power to take human life?”
- ICRAC noted that meaningful human control is supposed to be a normative and not technical standard, so how can states go about achieving that goal?

Session IV: Characteristics - continued

On Wednesday morning, Amb. Ahn Youngjip of South Korea chaired the second part of the consideration of characteristics in a session that began with five expert presenters: [Pekka Appelqvist](#), [Giovanni Sartor](#), [Jason Millar](#), [Caitriona McLeish](#), and Sybille Bauer. The session focused on dual-use characteristics of autonomous technology in its civilian and military applications as well as lessons learned from other regimes, such as the prohibitions on biological and chemical weapons.

The Q & A saw questions and interventions from 11 states (Belarus, Canada, China, Iraq, Ireland, Israel, Netherlands, Norway, Pakistan, Sierra Leone, and US) and three NGOs:

- China asked if intelligence is not an inherent feature of lethal autonomous weapons systems, what is?

- [Israel](#) made a detailed intervention that noted “various phrases referring to the appropriate degree of human involvement’ including meaningful human control, but said “it is safe to assume that human judgment will be an integral part of any process to introduce LAWS, and will be applied throughout the various phases of research, development, programming, testing, review, approval, and decision to employ them. LAWS will not actually be making decisions or exercising judgment by themselves, but will operate as designed and programmed by humans. Humans who intend to develop and employ a lethal autonomous weapon system, are responsible to do so in a way that ensures the system's operation in accordance with the rules of IHL.”
- Pakistan said as there is more autonomy to take critical decisions, isn't it counter intuitive for humans to still take decisions based on a machine? It pointed to the “larger problem” that the decision by a human would be a conscious one regardless of whether it was right or wrong.
- The Netherlands had a question about meaningful human control.
- Iraq asked about if there will be synergies between different ban conventions.
- The US made an intervention on meaningful human control, which it said could be phrased in ambiguous terms or read too narrowly, without capturing the full range of activities involved. Instead, the US said it is more useful to talk about human judgment. You need human judgment at all stages of development, acquisition, and use. You need human judgement to ensure LAWS will operate as intended. A commander will have to consider many factors before employing LAWS.
- Sierra Leone asked about machine error and malfunctions.
- Canada asked questions about meaningful human control.
- Norway asked questions about psychological effects and the accountability gap.
- [Ireland](#) described the concept of meaningful human control as “critical” to the international community’s consideration of the questions raised by lethal autonomous weapon systems, which it said raise “fundamental questions about the role of humans in taking lethal decisions in armed combat.” Ireland said the “decisive questions may well be whether such weapons are acceptable under the principles of humanity, and if so, under what conditions.”
- ICRAC asked if applications of autonomous weapons in situations other than war could be considered as there is potential for mass civilian targeting and this is important to address before those applications become loopholes.
- [CNAS](#) spelled out what it sees as different today in terms of human operators making informed conscious decisions from future lethal autonomous weapons systems and urged appropriate design as well as testing and training of operators.
- Belarus raised the matter of responsibility and said for lethal autonomous weapons it will be “difficult to resolve to whom we can appeal” because “we are lacking the legal framework.” It gave the example of a pensioner putting her cat in the microwave to demonstrate the accountability gap.
- China said that lethal autonomous weapons systems are a “future system” and “we don’t know how it will look like” and therefore “cannot come to the quick conclusion it will be conventional or WMD [weapon of mass destruction].”
- Article 36 made an intervention that described meaningful human control as a way of structuring the debate and providing normative guidance to prohibit

fully autonomous weapons systems, but does not provide a framework for developing them.

Session V: International Law

On Wednesday afternoon, Amb Zsuzsanna Horváth of Hungary chaired the session on legal aspects, which featured three presenters: [William Boothby](#), Kathleen Lawand, and [Eric Talbot Jensen](#). The aim of the session was to consider the challenges that lethal autonomous weapons systems pose to international humanitarian law (IHL).

Boothby and Jensen both argued that existing international humanitarian law is sufficient to deal with the multiple challenges posed by lethal autonomous weapons systems and rejected calls for a preemptive ban or moratorium. Both suggested a focus on Article 36 weapons reviews to address concerns raised. Lawand said the ICRC encourages all states to conduct weapons reviews, but emphasized the need for continued multilateral discussions to consider various policy and other options as there are too many issues to leave to solely national legal reviews. There is a risk of inconsistent application of international humanitarian law, which could require outright prohibition of a specific weapon system.

The session featured a long series of interventions by 16 states (Brazil, China, Cuba, France, Germany, Greece, India, Norway, Pakistan, Palestine, Poland, Russia, Sweden, Switzerland, UK, and US) and four NGOs:

- [Switzerland](#) observed that the article 36 weapons review obligation applies to all states, but review processes may differ. Make technical and experimental resources available to perform adequate tests on an autonomous weapon to ensure it acts predictably as designed and in compliance with international humanitarian law. If not, the system should not be fielded.
- China asked the speakers who said a ban is inappropriate to articulate the disadvantages of banning weapons as some of the examples provided were “not comparable to autonomous weapons.”
- [Poland](#) gave a statement entitled a “military perspective on accountability” in the context of lethal autonomous weapons systems, which affirmed the “utmost importance to make sure that human beings remain accountable for use of their crucial functions.” It described meaningful human control as “a useful framework to discuss the issue of autonomous weapons further, without any prejudice to the final result of our deliberation.”
- The [UK](#) articulated its position that existing international humanitarian law “is the applicable legal framework for the assessment and use of all weapons systems in armed conflict.” The UK elaborated on the its article 36 weapons review processes as well as the accountability chain and command responsibility. On lethal autonomous weapons systems, the UK said there is “no reason to believe that IHL will not be capable of dealing with an evolution in automation.”
- The US elaborated its process for weapons reviews, which address whether the weapon’s intended use will cause superfluous injury, if the weapon is indiscriminate, or if it falls under weapons that are prohibited. The US said it could be advisable to create “best practices” on weapon reviews.
- [Germany](#) said that on the question of whether future lethal autonomous weapons systems will function according to international humanitarian law

“our view is that the technical capability will not be possible.” It said “the CCW could provide the adequate framework ... to make public the national procedures” for article 36 weapons reviews. Germany reiterated that it “would welcome and is ready to support actively the development of a consensus among States for a transparency instrument.”

- [Cuba](#) expressed concern at the use of drones, which it said should be governed by the rules of international law. Cuba affirmed “it is completely unethical and violated international humanitarian law, international human rights law to allow a machine to make life-and-death decisions.”
- Norway said it is difficult to envisage how lethal autonomous weapons systems can meet international humanitarian law, in particular principles on precautions, proportionality, and distinction. Norway flagged that it is critical to ensure individual and state responsibility. It said robots have no moral judgment and cannot be held accountable. The potential for an accountability gap has serious consequences.
- France observed, “We should be digging into the question of the accountability chain and criminal law” because “naturally international humanitarian law applies, but for it to be applied there needs to be criminal law behind it.”
- Brazil said, “Let’s assume a state builds a lethal autonomous weapons system” and asked the speakers, “Do you believe that different countries will develop different benchmarks? How do we deal with these different standards of different countries, even inside the same armies? Do you believe that this situation could lead to international benchmarks on the military advantage and proportionality?”
- Russia made its most substantive intervention to date, first noting its national policy-making process involving the Ministry of Defense, legal specialists, and grassroots individuals. It said, “The human factor in decisions involving the use of certain weapons including automated and autonomous should not only be kept but also increased as the level of autonomy increases.” Russia noted “this issue has not been fully talked about here. Of course we need to monitor and review the military, technological, and cyber issues of LAWs. Can we in some way develop or try to develop criteria that we can apply to military or technical parameters for a certain type of weapon or ensure they fall in line with IHL? We are opening the lid of Pandora’s box for political bias of these weapons with the good/bad aspects of these weapons, which will create different criteria outside of IHL.”
- India said, “The lack of properly understood definition of a lethal autonomous weapons system creates a problem for Article 36 weapons reviews because when does the system cross a line that they need this review?” It flagged “the creeping nature of technology with existing weapons systems” and asked when do we cross the line when it’s a new weapons system and new way of warfare and the state is required to do a review? India expressed practical concerns to further discussing weapons reviews and asked how considering a national obligation or measure would be adequate in addressing lethal autonomous weapons systems.
- Sweden described reviews of new weapons as “crucial,” but said, “Given the uncertainties of these weapons, including their existence and definition, it may not be possible at this stage to give a general announcement on their

lawfulness.” Sweden said accountability must always remain with humans and targeting decisions must continue to be made by humans.

- [Greece](#) asked “for the sake of argument” if lethal autonomous weapons systems can fully comply with international humanitarian law what would be the legal basis for the prohibition? Greece said, “It boils down to the fundamental question of whether humans should delegate life and death decisions to machines and definitely Greece, like others, does not feel comfortable with such a prospect.” It asked, “How does one operationalize this ethical concern into a legal provision” and observed “the only legal principle which comes to mind is the Martens Clause.” Greece asked, “Does though such a general principle suffice to lead to the codification in the future of a new set of legally binding rules?” and answered itself with “We have our doubts.”
- Palestine expressed concern that international humanitarian law won’t be able to guarantee the safety of civilians when it comes to lethal autonomous weapons systems and said there should be an international framework to prohibit their introduction. Palestine said these weapons will be used more in civilian than military areas, will foster an arms race, and lead to greater regional and international stability.
- China asked the speakers if a ban on lethal autonomous weapons systems would be appropriate or not as well as the “downside of a ban.” It asked why the CCW and the Chemical Weapons Convention were established if article 36 existed before them. For countries that possess these weapons, they can have advantages, but what are their advantages or disadvantages for states that can’t acquire these weapons?
- Pakistan said it remains convinced that lethal autonomous weapons systems would not be able to comply with the cardinal rules of international humanitarian law and the complex rules of international human rights law.
- [Amnesty International](#) flagged the need for all states to consider international human rights law including the right to life and human dignity as well as policing and law enforcement situations.
- [ICRAC](#) pointed out that the legal discussion seemed to ignore issues of jus ad bellum (laws of going to war). Autonomous weapons could lead to unjust wars resulting from arms races and attendant instability, software errors or the unexpected interactions of complex systems. If machines can initiate high-speed attacks, it may be hard for humans to stop them.
- [Article 36](#) said there are too many questions to leave up to national weapons reviews to address as article 36 compliance is low, transparency is lacking, there is no clarity to address human control to ensure a weapon is legal, and states apply standards differently.
- Human Rights Watch said it is more relevant to consider the past 20 years of practice in banning blinding lasers at the CCW in 1995, then landmines and cluster munitions. Every time, military lawyers said this is unnecessary and unwise, but now these very effective conventions have saved hundred of thousands of lives and the same kind of trajectory can be applied to fully autonomous weapons. The Martens Clause is it highly relevant as this is clearly not an IHL issue, but one where the ethical and moral considerations are far more significant.

Session VI: Overarching issues

On Thursday morning, Amb. Marta Maurás of Chile chaired the first of two sessions on “overarching issues” with four presenters: [Christoph Heyns](#), [Bonnie Docherty](#), [Patrick Lin](#) and [Karolina Zawieska](#). The session focused on the potential impact of lethal autonomous weapons systems for human rights, in particular the right to life and the right to dignity, as well as the main ethical questions arising from their development and deployment.

Heyns spoke from the basis of his work as Special Rapporteur for extrajudicial killings and arbitrary detention and urged that states consider the human rights implications of autonomous weapons systems, including their use outside of conflict. He asked if “lethal” is necessary when referring to autonomous weapons systems as less than lethal pose concerns too. Docherty reviewed the significant human rights implications for autonomous weapons systems especially to the right to life, right to a remedy, and principle of dignity. Lin reviewed ethical questions surrounding the right to life by examining possible implications on human dignity. Zawieska explored anthropomorphic terminology and the need to differentiate between human and human-like. She observed that there appears consensus at the CCW on assigning life and death decisions only to humans.

Before the panelists began Chile invited the Holy See and Cuba to deliver remarks, which are listed below together with excerpts from other speakers in the Q & A. In total, 14 states (Australia, Brazil, Canada, China, Cuba, France, Ghana, Holy See, Ireland, Pakistan, Palestine, Russia, Sierra Leone, and US) contributed in this session in addition to ICRC:

- The [Holy See](#) delivered an abridged version of a 10-page statement exploring “ethical questions” on the use of lethal autonomous weapons systems that concludes “the risks of deresponsabilization, dehumanization, and depoliticization induced by the use of lethal weapons removed from effective control by men are important enough that we envisage their prohibition.”
- [Cuba](#) delivered a 4-page statement on the ethics of lethal autonomous weapons systems, which it described as weapons that “once activated, can select and engage targets without further human intervention to accomplish the tasks assigned.” Cuba said these weapons and their use would be a violation of international humanitarian law and called for a legally binding instrument.
- China described lethal autonomous weapons systems as “an entirely new phenomenon” and said we cannot take for granted that existing IHL is automatically applicable to these weapons as they could be legitimized. It said the weapons may lead to ethical and human rights problems that deserve great attention. The world’s strategic balance could be affected because developing countries do not have these weapons and become the victims.
- [France](#) said “it is too early to say” if lethal autonomous weapons systems will be in line with IHL principles as much will depend on the environment of use and cautioned we “cannot prejudge the development.”
- Australia asked for assumptions about societal response in 10-20 years from now with respect to what sophisticated technology might be able to achieve.
- Brazil asked what role the Human Rights Council should be taking on the matter of autonomous weapons systems.

- Cuba asked the speakers for more details on the implications of lethal autonomous weapons systems for ethics and human rights law.
- Russia described the Martens clause as a norm that is “an integral part of customary international law” and said it provides “a very significant barrier” to limiting the development of lethal autonomous weapons systems. Russia reaffirmed that the “unacceptability of losing control” over these weapons.
- Canada asked several questions, including whether lethal autonomous weapons systems should be viewed as “independent, human-like agents” and “what about the dignity of those whose lives could be saved” from their use.
- Palestine said it is concerned at the use of autonomous technologies in weapons systems, especially for the right to life. Such machines will opt for the death and foster wars by make them easier.
- The [US](#) made a detailed intervention addressing weapons reviews, the Marten’s clause, and need to prevent human rights violations. It said the concept of human dignity is important. It said one should not conflate the legal and ethical issues. It also said that LAWS might be useful in peacekeeping missions or to deter human rights violations.
- Pakistan asked if the current legal framework is sufficient as well as how lethal autonomous weapons systems could be used in clandestine operations.
- Ireland said the matter of lethal autonomous weapons systems goes beyond international humanitarian law and needs to be addressed in human rights forums.
- Sierra Leone asked about accountability and recommendations on human rights.
- [Ghana](#)—in its first public statement on the topic—expressed concern at the possible future use of lethal autonomous weapons systems, which it said “must be proscribed before they are fully developed.”⁶ Ghana cautioned on the need to move “from this direction of self preservation” to one of “human dignity for humanity as a whole.”
- China said war must take into account the right to life of all people.
- [ICRAC](#) made an intervention.

In summing up, the Chilean chair observed the question appears to be “not can we do it, but should we do it? Do we want this paradigm shift to give machines the power to kill in war?”

Session VII: Overarching issues

On Thursday afternoon, Amb. Aryasinha of Sri Lanka chaired the second part of the session on “over-arching issues” with three expert speakers: Monika Chansoria, [Michael Horowitz](#), and [Jean-Marc Rickli](#). The aim of the session was to consider “general security issues” relating to what Sri Lanka called the “revolution” posed by lethal autonomous weapons systems for national, regional, and international security as well as the implications of proliferation and arms races.

Nine states (Austria, China, Greece, India, Iraq, Jordan, Pakistan, Russia and Sierra Leone) and two NGOs spoke during the Q & A. Almost all interventions were in the

⁶ “Proscribed” is another way of saying the weapons should be prohibited.

form of questions or comments to the panelists, but some nations provided their views on general security implications posed by the weapons:

- India questioned figures on the use of armed drones.
- China asked questions to all three speakers and asked Rickli to elaborate on the issue of swarming, which the delegate said “to my understanding, means massive use of such weapons system like insects in a swarm to attack a country or a city.”
- Iraq stated that forces of the Islamic State in Iraq have acquired armed drones from the black market and asked, “How can we ensure that terrorists cannot get these weapons or lethal autonomous weapons systems?”
- Jordan supported Iraq’s intervention.
- Pakistan said lethal autonomous weapons systems “would not lower the chance of going to war but encourage it” and expressed concern that the weapons would result in asymmetric warfare.
- ICRAC asked Horowitz’s for the methodological approach of his survey.
- Greece asked Rickli about accountability, including whether lethal autonomous weapons systems would cause issues of attributability because it would be hard to trace an attack back to the perpetrator.
- Austria asked Rickli for his views on offensive and defensive use of lethal autonomous weapons systems.
- The World Council of Churches (WCC) observed that the CCW meeting has “heard very little from states who would not be able to acquire these weapons, who are on the receiving end and already know how these weapons look and feel.” The WCC noted the statement by first expert speaker of the 2015 meeting who said the artificial intelligence community has recognized ethics of what it does matters when it comes to autonomous weapons
- Sierra Leone responded to Horowitz on his survey and expressed concern that non-state actors including terrorists would gain access to lethal autonomous weapons systems.
- Russia supported the previous comments with respect to the survey by Horowitz. It also observed that “we agreed last year we shouldn’t be considering the issue of drones here [at CCW].”

Session VIII: Transparency & the Way Ahead

Unlike the previous meeting of experts, the “way ahead” session for the 2015 meeting was split into two parts. First, Amb. Filloreta Kodra of Albania chaired a panel on “transparency” with three invited speakers: Sarah Knuckey, [Jeroen van den Hoven](#), and [Ian Anthony](#). After a brief exchange on transparency, Germany then chaired a general exchange of views from delegations on the “way ahead.”

Transparency

In opening remarks, chair Albania reviewed the questions from the “food-for-thought” paper, which included “should there be a transparency mechanism to monitor the acquisition of lethal autonomous weapons systems?”

Knuckey listed the benefits of transparency in enabling evidence-based discussions between countries, but said transparency alone is not the answer to the many ethical and legal questions that have been raised with lethal autonomous weapons systems.

Van den Hoven urged proactive ethics in “value-sensitive” design of lethal autonomous weapons systems and said it’s not realistic to assume that technology will be able to make the moral assessments that humans do.

Anthony said SIPRI has seen limited information in the public domain with respect to the development of autonomous weapons systems, but that doesn’t mean the information doesn’t exist. He had a number of suggestions that are repeated here: create a national focal point to systematically collect information; increase the frequency of interactions between governments on these weapons as annual consultations are “insufficient” to maintain momentum to address concerns over the weapons; and focus on critical functions of today's automated or autonomous weapons as this provides valuable platform for future discussions. Anthony pointed out that many states are still in the process of considering whether lethal autonomous weapons systems are desirable or should be banned.

In the Q & A, 10 states spoke (Australia, Belarus, China, Cuba, Germany, India, Poland, Russia, Sierra Leone, and Sweden):

- [Germany](#) said that as a “first step” the CCW could provide a framework for countries to establish their national policies to further transparency.
- Poland suggested the CCW consider looking at transfer controls and best practices.
- China said there are not many developing countries in the room and we are curious what stance they would take as it is difficult to know what the majority view would be. It described a focus on transparency as “premature.”
- India said that there are still many divergences on what lethal autonomous weapons systems are and the challenges they pose, so while transparency is important, it is premature. India asked if lethal autonomous weapons systems are only to be left at the national level for weapons reviews to consider, then why are we discussing them here at the CCW? It warned if we solely talk about transparency, we are legitimizing the production of these weapons. India said it does not oppose discussion on article 36 weapons reviews, but be clear on its relation to the mandate of considering questions relating to lethal autonomous weapons systems.
- Sierra Leone responded to Van den Hoven’s value-sensitive design. It said until we know what we are looking at, we cannot talk about transparency. Sierra Leone suggested the next meeting focus on outputs and not discuss these same issues.
- Belarus supported the doubts expressed about transparency and said it is “premature.”
- Cuba expressed concern that some countries are trying to take the deliberations into an informal discussion. It urged a debate on the definition of lethal autonomous weapons to try and characterize these weapons, as well as their implications for international law and ethics. It said “once we reach a common understanding on the use of these weapons, their development, and the technology involved, then we can reach a point that we can talk about transparency.”
- Australia asked a question to Knuckey on her presentation.
- Sweden said developing information sharing is the way to go and said it would be worthwhile to develop the measures that have been proposed, such as

establishing a focal point. It said “we would be happy to work with others on these proposals.”

- Russia described the transparency issue as “premature because the subject is not fully defined” and said a focus on it “would only get us involved in hypothetical situations.” Russia expressed doubt that countries developing this technology will be transparent about their measures due to commercial interests and the competitive advantage of this technology.

The Way Ahead

The meeting chair Amb. Biontino made some introductory remarks, which noted the “widespread” calls to focus on transparency with “many” interested in article 36 weapons reviews.

In the exchange of views, no nation that spoke expressed opposition to continuing deliberations at the CCW on lethal autonomous weapons systems. At least a dozen states expressed explicit support for the establishment of a Group of Governmental Experts at the CCW annual meeting in November 2015.

A total of 28 states spoke in the general exchange of views, which continued after the lunch break (Algeria, Austria, Brazil, Canada, Chile, China, Colombia, Croatia, Cuba, Finland, France, Germany, Ghana, Greece, India, Ireland, South Korea, Mexico, Netherlands, Pakistan, Poland, Russia, Sierra Leone, Switzerland, Turkey, UK, US, and Zambia) in addition to the ICRC and six NGOs:

- Austria urged that the agreement be to establish a Group of Governmental Experts, which “provides a more authoritative basis for the work.” It wants thorough examination of legal questions including article 36 weapons reviews, but also the Martens Clause and the concept of meaningful human control.
- The US strongly supports the CCW mandate to consider lethal autonomous weapons systems and has been listening to the wide array of views very carefully. The US sees “many unanswered questions” as this is only the ninth day of deliberations on the topic at the CCW. It “remains flexible” on further informal meetings of experts or a Group of Governmental Experts. The US said it is “premature to determine where the discussions might lead” but weapons reviews could be one place to focus, as an interim step. The US supports holding additional CCW meetings in 2016 “to ensure we have enough time to consider aspects of this work.” It called for agreement in November 2015 on an outcome document (such as best practices or a political declaration) that would lay out a review process applicable to all weapons. The document would not endorse LAWS, just require review if considering acquisition. This would be an interim step, not in place of future discussions on other LAWS issues.
- [France](#) expressed support for further debate on this “complex topic” such as meaningful human control and the questions of responsibility. France said it would like to renew the CCW mandate as it stands and did not indicate if it would support a Group of Governmental Experts in November 2015.
- [Colombia](#)—in its first statement ever on the topic—commented on the “usefulness of the discussions and reiterated its commitment to principles of international humanitarian law. It suggested multilateral regulation to maintain

human control at all times and ensure that no machine makes life and death decisions.

- [Germany](#) thanked the week's expert speakers and said the deliberations were "active and focused." According to Germany, there is "common ground on number of issues," including that lethal autonomous weapons systems do not exist and no states seem to be developing them. It affirmed "Germany will not accept that the decision over life and death is done solely by an autonomous system without any possibility for a human intervention. The development or acquisition of LAWS is therefore excluded." Germany expressed support for a "more formal framework" in the form of a Group of Governmental Experts "to discuss and propose transparency measures."
- Canada requested a more focused debate on key elements the interaction between humans and machines, context of use, and transparency on article 36 weapons reviews. It sees international law as sufficiently broad to deal with autonomous weapons.
- [Finland](#) said it has started an internal process to consider autonomous weapons and develop "our national thinking." It is engaging and values input from civil society and academia. Finland recommended "even more focused discussions bearing in mind the coming Review Conference in 2016" and expressed support for a Group of Governmental Experts. Finland said "instead of speculating how technology will evolve in the future, it might be better to concentrate on certain critical functions or how the interaction between the system and humans would be addressed."
- China said the CCW work is at an "initial stage" and further in-depth discussion is needed. It acknowledged the "important role" played by non-governmental organizations in the process. China proposed exploring ways to engage all CCW states parties in "more representative and universal" discussions and said the choice of chairmen, coordinators, and experts should follow geographical rotation with equitable geographic distribution. It asked if the CCW is the only forum for discussion of this matter? In view of the far-reaching implications, "perhaps we cannot exclude discussion on this in other forums."
- [Netherlands](#) said it sees "great value in continued discussions" through a Group of Governmental Experts. It wants to focus on 1) meaningful human control, 2) command and control, and 3) article 36 peer review process.
- South Korea said the discussions "benefitted greatly" from civil society contributions. Common understandings are needed before any ban. It would be "premature to make any prompt decisions."
- Switzerland said there is a clear need and interest in addressing this issue. It welcomes the common understanding that existing international law "fully applies" to lethal autonomous weapons, but said issues remain "unresolved" and there is a need to continue discussions. Switzerland urged work that leads to "practical results" such as best practices on article 36 weapons reviews as well as characteristics, human control, and ethics. It said it was "open to all options" and would support a Group of Governmental Experts.
- The UK said "we have benefitted from strong participation including by civil society." It said international humanitarian law "has a number of clear strengths" and welcomed discussion on the process for reviewing new weapons. The UK said it is "not convinced" of the value of additional

guidelines or legislation. It expressed support for another informal meeting of experts and did not indicate support for a Group of Governmental Experts.

- Brazil said it wants to continue this discussion in the CCW, but recognizes this is a multidisciplinary subject relevant to the Human Rights Council as well.
- [India](#) said it sees “merit in further discussions and supported France’s suggestion to continue with the current mandate. India said it is “cautious” on the establishment of a Group of Governmental Experts. It said “one gets the sense that we may have reached a point where the key question is not input from outside, but common ground inside.” The expert speakers were enriching “but we may not longer need such external input.” More space and time is needed to build common ground amongst delegations and move forward. So at a minimum, renew the mandate, but structure the meetings in such a manner as to allow for building common ground.
- [Pakistan](#) listed its many concerns with lethal autonomous weapons systems and called for a legally-binding protocol to preemptively ban the weapons. It expressed concern that the CCW process might legitimize these abhorrent weapons systems and said it was “not convinced” of the need to discuss article 36 weapons reviews, which it called a “purely national exercise.” Pakistan said it finds merit in establishing a Group of Governmental Experts in November 2015 “with a mandate to formally consider this issue and present a report to the CCW Review Conference next year.”
- [Croatia](#) reiterated its position that “fundamental questions of life and death cannot be assigned to armed autonomous weapons systems.” It expressed support for the establishment of a Group of Governmental Experts and said “a future legally-binding instrument ... should not be left out completely out of sight.” Croatia acknowledges the “valuable contribution” by civil society in the discussions.
- Greece strongly supported continuing the CCW deliberations and supported Austria’s proposal of a Group of Governmental Experts. It wants more focused and not repetitive discussions to consider issues including meaningful human control and national policy.
- [Mexico](#) believes fully autonomous weapons systems will not be able to meet principles of international humanitarian and human rights law. It urged further discussion of meaningful human control and autonomy in critical functions. Mexico said the debate does not have to be limited to the framework of the CCW given the possible impact on human rights. Mexico thanked civil society for its contributions to the meeting.
- Ireland noted that almost all delegates speaking have said they reject removing human control from life and death decisions. Ethics must be proactive or too late. We need to move forward both at the CCW and in human rights fora. Ireland supports a Group of Governmental Experts, but we need to move quickly.
- Cuba said the 2015 meeting was “excellent” and expressed hope that the open flow of information will continue. It encouraged all states to take part, including countries of the South. It cautioned the debate at CCW not to “help legitimize” autonomous weapons systems. It reiterated its call for a ban on the weapons and expressed support for formal discussions that result in a legal agreement.
- [Ghana](#) said “our ultimate objective as States remains the preservation of human dignity and respect for basic sanctity of humanity at all times and most,

especially, during armed conflicts. The laws of war must in this regard remain at the forefront of all our efforts and ahead of technological developments. Technology must not be allowed to overtake our commitment to these goals. It supported further CCW discussions on transparency and weapons reviews, which it said “must constitute a part of an overall drive towards the promulgation of a convention that regulates and proscribes the production of those weapons that cannot meet the basic standards set for us by the IHL and IHRL.”

- Russia noted the wide range of opinions that were expressed at the meeting but it found the only common element was the acknowledgment that we must all abide by international humanitarian law. Russia saw “widespread interest” in ensuring the human being is not removed from weapons systems as autonomy increases. It still has questions about “meaningful” human control and committed to do “serious homework” in this regard. Russia did not indicate if it would support a Group of Governmental Experts.
- Sierra Leone said it had not heard any states at CCW insist they want to develop lethal autonomous weapons systems. It expressed support for a more formal approach, including the establishment of a Group of Governmental Experts. Sierra Leone also urged that consideration be given to the matter elsewhere, including in human rights fora.
- [Zambia](#)—in its first statement on the topic—acknowledged the role played by civil society and its “very clear” message. It said that diverging views on the weapons indicate a need for further discussions and urged financial resources to enable “inclusive” participation from as many states as possible. Zambia said “to delegate the decision to decide over life and death to machines, will be against human rights” and urged that ethical and moral issues be considered. Zambia “would not advocate for any such weapons systems that would water down the aspects of responsibility and accountability in armed conflict” and said “our focus should instead be on strengthening such norms.”
- Algeria observed that lethal autonomous weapons systems is a “cross-cutting” issue and said more time is needed to consider it, especially from the perspective of the Global South. Algeria said it is in the process of ratifying the CCW and hopes to participate as a state party at the next meeting in November.
- Chile flagged the need to ensure that the human rights implications of lethal autonomous weapons systems remain on the CCW’s agenda.
- Turkey said it favors continued discussions on autonomous weapons systems at the CCW and is flexible on the format.
- The [ICRC](#) said the discussions have highlighted, once again, broad agreement on the need to retain human control over the critical functions of weapon systems. It suggested future CCW work focus on how to ensure meaningful, adequate, and effective control remains. The ICRC welcomed the attention on weapons reviews, but warned that “efforts to encourage implementation of national legal reviews are not a substitute for States party to the CCW to consider possible policy and other options at the international level to address the legal and ethical limits to autonomy in weapon systems.”
- On behalf of the [Nobel Women’s Initiative](#) and her “sister Nobel Peace Prize Laureates,” Jody Williams expressed concern that a CCW focused solely on transparency and article 36 weapons reviews “is not a proper response to

tackling the myriad issues” raised by killer robots. She urged that states establish a Group of Governmental Experts.

- [Article 36](#) said its “main observation on the week is that there is a strong sense among the international community that we should not be going down the road of developing autonomous weapons systems.” It flagged the CCW’s 2016 Review Conference as “an appropriate milestone” for states to be “well on track to developing ... a prohibition” on autonomous weapons systems to ensure meaningful human control.
- [Human Rights Watch](#) said, “greater transparency in and of itself is not nearly enough to address the plethora of concerns raised by fully autonomous weapons systems.” It called on states in November to establish a formal open-ended Group of Governmental Experts to undertake 3-4 weeks of work in 2016 with a view to future negotiation of a new legally-binding Protocol VI on the weapons.
- [ICRAC](#) urged continued work at the CCW and elsewhere, including the establishment of an open-ended Group of Governmental Experts because “while transparency is good as a general principle, it is not on its own a sufficient means to regulate autonomous weapons.”
- [Mines Action Canada](#) welcomed the wide-ranging discussions but observed that “at times during the week, we have felt that some have underestimated the skills, knowledge, intelligence, training, experience, humanity, and morality that men and women in uniform combine with situational awareness and IHL to make decisions during conflict.” It described the establishment of a Group of Governmental Experts as “an appropriate and obvious next step.”
- [CNAS](#) observed that “there is still work to be done in converging on a common understanding of autonomous weapons.” It also cautioned “we should not attempt to make blanket determinations about what can or cannot be done in the future based on the state of technology today.”

Draft Report and Conclusion

The final part of the 2015 CCW experts meeting saw the eight friends of the chair deliver summary remarks from the eight sessions. Then the German chair presented his draft 28-page report of the meeting, sections of which had been delivered throughout the week before each session.

Bolivia made a late statement—its first on the matter—that called for a ban on fully autonomous weapons systems, citing concerns that the right to life should not be delegated and doubts that international humanitarian and human rights law is sufficient to deal with the challenges posed.

Germany took feedback on the report from India, Cuba, the US, and others. The report was not adopted at the meeting because it is not a formal outcome document, but rather a report prepared by the chair in his personal capacity. The meeting concluded just before 6:00pm.

Campaign Activities

Following the November 2014 agreement to continue CCW talks on lethal autonomous weapons systems with another meeting in April 2015, the Campaign to

Stop Killer Robots undertook significant outreach to encourage broad and substantive participation in the meeting as well as a more inclusive line-up of expert presenters.

On 26 January, Campaign representatives met with Amb. Biontino to discuss the campaign's objectives for the meeting as detailed in a 14 January [letter](#). The Campaign to Stop Killer Robots urged that the objective of meaningful human control be incorporated as a cross-cutting topic across all sessions of the 2015 meeting. It made a strong call for the 2015 experts meeting to be genuinely inclusive by including female experts and ending the all-male panels or “manpanels” that characterized the 2014 CCW experts meeting on lethal autonomous weapons systems. The Campaign provided Amb. Biontino with an [eight-page](#) binder of selected women experts for consideration in the meeting.

In addition, campaign coordinator Mary Wareham communicated regularly with the UN Office for Disarmament Affairs in Geneva, particularly its CCW implementation support unit, on the registration process and NGO contributions.

The Campaign to Stop Killer Robots made numerous contributions in the lead-up to and during the 2015 experts meeting, including:

- New publications exploring various issues including: a 30-page “Autonomous Weapons Systems” briefing by Amnesty International on implications for international human rights law and standards; a briefing paper entitled “Killing by Machine” by Article 36 on the need for meaningful human control over weapon systems for every individual attack; a 38-page report by Human Rights Watch, “Mind the Gap,” on the challenges of holding anyone accountable for the unlawful actions that fully autonomous weapons would be prone to commit; and a “Ten Problems for Global Security” leaflet by the International Committee for Robot Arms Control (ICRAC) listing the ways that autonomous weapons systems could perilously impact global security.
- Campaign to Stop Killer Robots side event briefings on the need for new international law (13 April), why autonomous weapons systems are ethically unacceptable (14 April), and the way ahead (17 April) with speakers including Nobel Peace Laureate Jody Williams of the Nobel Women’s Initiative, industry representative Ryan Gariepy of Canadian company Clearpath Robotics, and AJung Moon, co-founder of the Open Roboethics initiative.
- Plenary statements and interventions during the meeting by seven members of the Campaign to Stop Killer Robots: Amnesty International, Article 36, Human Rights Watch, ICRAC, Mines Action Canada, Nobel Women’s Initiative, and WILPF. Three campaign members—all women—provided expert presentations during plenary sessions of the meeting in their personal capacities (Brehm, Docherty and Roff).
- Campaign members held bilateral meetings with delegates from most countries participating in the meeting, including Canada, Germany, Netherlands, Sri Lanka, UK, and US. For the first time, campaigners attended from the Middle East and Latin America, enabling outreach to a much wider number of states.
- Members of the Campaign to Stop Killer Robots helped to generate significant media interest in the 2015 experts meeting. (See Annex of Media Coverage).

Campaign representatives briefed the Association des Correspondents Auprès des Nations Unies (ACANU) on the opening day.

- There was no live webcast for the 2015 CCW experts meeting, but campaigners live-tweeted the highlights to help draw attention and provide a real-time record of the deliberations. WILPF's Reaching Critical Will collected statements on its dedicated CCW website and issued a daily CCW Report summarizing highlights and NGO views on the deliberations.

For more information, please see:

- The [chair's draft report](#) of the 2015 CCW experts meeting on killer robots
- Reaching Critical Will's [CCW Reports](#) and 2015 CCW meeting [web page](#).
- This [Storify](#) prepared from tweets by [@BanKillerRobots](#) and governments and campaigners [tweeting](#) the meeting as well as media coverage.
- This [short film](#) on the 2015 CCW meeting filmed and edited by Sharron Ward for the campaign's [YouTube channel](#) as well as this [short film](#) by the ICRC.
- Campaign to Stop Killer Robots web posts on the [lead-up](#) (15 March), [mid-point summary](#) (15 April), a [concluding statement](#) (17 April), and the final report (when the report is completed).

Annex: Selected Media Coverage

Almost all media coverage on fully autonomous weapons in April 2015 focused on the second CCW experts meeting and/or the host of publications and statements issued in advance by NGOs including HRW (“[Mind the Gap](#)”), Article 36 (“[Killing by Machine](#)”), Amnesty International (“[Autonomous Weapons Systems](#)”), ICRAC (“[10 Problems for Global Security](#)”), and the [World Council of Churches](#) on key concerns helped generate interest in the meeting.

As the following compilation shows, at least 100 media articles, broadcasts, and related products were published in countries including Argentina, Australia, Belgium, Canada, Chile, China, Colombia, Cuba, Ecuador, Egypt, France, Germany, India, Israel, Jordan, Mexico, Pakistan, Netherlands, New Zealand, Qatar, Spain, Sri Lanka, Switzerland, UK, US, and Venezuela.

Articles appeared in:

- Arabic-language media outlets in wire/broadcast services such as Sky News Arabia and in countries including Egypt (*Al-Ahram*, *Al Mal News*, *Al Masry Al Youm*, *Mogaz Masr*, *Alyoum Alsabe*, *Shrouk*), Jordan (*Assabeel*), and Qatar (*Al Sharq*);
- Chinese-language media outlets including *Kuai Xun*, *Shina*, *Huanqui*, *Science Net*, *JYB*.
- French-language media outlets in France (*Le Temps*, *L’Express* *L’Expansion*, *Liberation*, *Metro*) and Monaco (*Radio Monaco*);
- German-language media outlets in Germany (*Aktuelles*, *Berliner Zeitung*, *Die walt*, *Frankfurter Rundschau*, *Greenpeace Magazine*, *Heise Online*, *Kölner Stadtanzeiger*) and Switzerland (*Kath*).
- Russian-language media outlets including *Balt Info*, *Metro*, *Mig News*, *Riasv*;
- Spanish-language media outlets in wire/broadcast services (*ANSA*, *Agencia EFE*, *Univision*, *Voice of America*) as well as in Argentina, Chile (*24 Horas.CL*, *Metro*), Colombia (*El Espectador*), Ecuador (*Metro*), Mexico (*Proceso*), Puerto Rico (*Metro*), Spain (*Alfabeto Juega*, *El Diario*, *El Mundo*, *El País*, *Gizmos*, *La Cadena SER*), Venezuela (*El Nacional*);
- *Metro*, a free daily newspaper distributed to commuters, ran a brief Q & A with Mary Wareham in its [New York](#), [Moscow](#), [Paris](#), [Quito](#), and [Santiago](#) editions.
- An *IRIN* [issues briefing](#) by Imogen Foulkes that was translated into languages including [Arabic](#) and [French](#).

In addition:

- Former BBC presenter Noel Sharkey recorded a series of [podcast interviews](#), [including](#) with the head of the US delegation [Michael Meier](#) and Nobel Peace Laureate [Jody Williams](#).
- Sharkey, Scharre, and Patrick Tucker did a 47:48 minute “[On Point](#)” recording for *National Public Radio* (16 April).

- The ICRC issued a 2:30 minute film “[A licence to kill for autonomous weapons?](#)” on 17 April that uses footage shot at the CCW meeting.
- *VICE Motherboard* issued a [trailer](#) on 9 April for its “[The Dawn of Killer Robots](#)” documentary released on 16 April.
- WILPF’s Reaching Critical Will collected [statements](#) and issued a daily “[CCW Report](#)” summarizing developments at the meeting.
- [Mark Gubrud](#) provided a daily “Futurisms” update for The New Atlantis journal of technology and society.
- Campaigners wrote review pieces for [Just Security](#), [Open Democracy](#), [Incline](#), and other outlets, while several experts published extracts of their presentations including [Stuart Russell](#), [Heather Roff](#), [Patrick Lin](#), and [Jason Millar](#).
- [The Mark News](#) published a syndicated piece by Docherty that appeared in publications in Cyprus, Finland, Japan, Saudi Arabia
- Campaigners undertook press outreach in Arabia, French, Spanish, and other languages. Human Rights Watch translated its press release into nine languages (Arabic, Chinese, French, German, Hebrew, Japanese, Korean, Spanish, Russian) while Amnesty International translated their release into Arabic, French, Russian and Spanish.

There was however no coverage by *The New York Times* or wire services *Associated Press* and *Reuters*. There was no media coverage in Japan unlike in 2014.

ENGLISH

Broadcast media (TV, Radio)

“Killer Robots to Supervised Autonomy,” *RT*, 9 April 2015.

<https://www.youtube.com/watch?v=WqmH8SGEF5E>

“‘Killer robots’: Towards faceless war?,” *France 24*, 10 April 2015. (at 5:43)

<http://www.france24.com/en/20150411-tech-24-tv5monde-hackers-cyberattack-killer-robots-kobo-glo-hd/>

“Should Canada ban killer robots?,” *CBC*, 10 April 2015.

<http://www.cbc.ca/player/News/Politics/Power+&+Politics/ID/2663367580/>

“‘Killer robot’ debate,” *CBC*, 13 April 2015.

<https://www.youtube.com/watch?v=aNFyiHATKog>

“Campaigning to stop killer robots,” *ABC News 24*, 14 April 2015.

<https://www.youtube.com/watch?v=1muV9ltoAF8>

“UK opposes ban on developing 'killer robots',” *PressTV*, 15 April 2015.

<https://www.youtube.com/watch?v=NmN6jiYqu8c>

“Killer robots conference,” *CBC*, 17 April 2015.
<http://www.cbc.ca/player/News/Politics/Power+&+Politics/ID/2664640093/>

“Debate on ‘killer robots’,” *CTV News*, 20 April 2015.
<http://london.ctvnews.ca/video?clipId=595346>

“Killer robots deciding on human life, it's unacceptable – Conference on Disarmament chief,” *RT*, 26 April 2015. <https://www.youtube.com/watch?v=-qn6tyXRITM>

“Should ‘Killer Robots’ be Banned?” *BBC*, 13 April 2015,
<http://www.bbc.co.uk/programmes/p02p2m07>

Beverly O'Connor, “Campaigning to stop killer robots,” *Australia Broadcasting Corporation*, 14 April 2015. <http://www.abc.net.au/news/2015-04-15/campaigning-to-stop-killer-robots/6393132>

“Open to developing killer robots?” *CBC*, 16 April 2015.
<http://www.cbc.ca/player/Radio/Local+Shows/Ontario/Ontario+Today/ID/2664419268/>

Print Media

Dmitry Belyaev, “OMG: Expert weighs in on idea of 'killer robots' in military,” *Metro*, 15 April 2015. <http://www.metro.us/entertainment/omg-expert-weighs-in-on-idea-of-killer-robots/zsJodo---eSjODwJsx7dM/>

Killer robots “Terminator”-style is not just the nightmarish scenario from sci-fi movie fantasy: the prospect of lethal machines obliterating mankind is under discussion at a major UN multilateral meeting in Geneva. The week-long session on "lethal autonomous weapons systems" (LAWS), attended by 117 UN members, is looking at the rationale of giving machines the freedom to locate and kill enemies without human intervention. Meanwhile, campaign group Human Rights Watch has issued a report calling for a worldwide ban of such unmanned weapon systems before they are ever built. “The lack of meaningful human control would make it difficult to hold anyone criminally liable,” Mary Wareham, coordinator of the ‘Campaign to Stop Killer Robots’ initiative at Human Rights Watch, told Metro.

Shan Ross, “Stop the killer robots, warns professor,” *The Scotsman*, 5 April 2015.
<http://www.scotsman.com/news/sci-tech/stop-the-killer-robots-warns-professor-1-3738771>

Prof Sharkey, a roboticist and chair of the International Committee for Robot Arms Control, a non-government organisation seeking limits on robotic military hardware, will tell an audience at the 2015 Edinburgh International Science Festival that governments need to take urgent action to address the rapidly developing technology.

Matthew Bolton, “Model United Nations Urges Ban on Killer Robots,” *ICRAC*, 6 April 2015. <http://icrac.net/2015/04/model-united-nations-urges-ban-on-killer-robots/> Last week, at the [National Model UN conference in New York](#), attended by some 2,500 undergraduate students from all over the world, a simulation of the UN General Assembly passed three resolutions calling for states to take action to prevent the threat

of these “killer robots” to security, human rights and humanitarian law. The NMUN NY resolutions defined lethal autonomous robots as “weapons that can select and attack targets independently – without meaningful human input or control”, suggested all countries immediately adopt a national moratorium on such weapons, and urged the negotiation of an international ban through an additional Protocol VI at the Convention on Certain Conventional Weapons (NMUN NY 2015A/GA1-1-1).

Daniel Koren, “Will Israel's Iron Dome Lead to Futuristic ‘Killer Robots’?” *Shalom Life*, 9 April 2015. <http://www.shalomlife.com/business/28810/will-israels-iron-dome-lead-to-futuristic-killer-robots/>

Human Rights Watch has released a new report urging governments to ban “killer robots,” as such weapons raise “serious moral and legal concerns because they would possess the ability to select and engage their targets without meaningful human control.” Published in conjunction with Harvard Law School’s International Human Rights Clinic, HRW claims that “technology is moving in the direction” of developing “fully autonomous weapons.” And what technology is the closest to being the precursor to such weapons? Israel's very own anti-defense missile system, the Iron Dome.

Owen Bowcott, “UN urged to ban 'killer robots' before they can be developed,” *The Guardian*, 9 April 2015. <http://www.theguardian.com/science/2015/apr/09/un-urged-to-ban-killer-robots-before-they-can-be-developed>

Fully autonomous weapons, already denounced as “killer robots”, should be banned by international treaty before they can be developed, a new report urges the United Nations. Under existing laws, computer programmers, manufacturers and military commanders would all escape liability for deaths caused by such machines, according to the study published on Thursday by Human Rights Watch and Harvard Law School. The report is released ahead of an international meeting on lethal autonomous weapons systems at the UN in Geneva starting on 13 April. The session will discuss additions to the convention on certain conventional weapons.

“HRW report sounds warning against ‘killer robots,’” *Al Jazeera*, 9 April 2015. <http://america.aljazeera.com/articles/2015/4/9/report-warns-against-autonomous-killer-robots.html>

Human rights advocates have called on countries to prohibit the development and use of fully autonomous weapons, or so-called “killer robots,” in report published Thursday by Human Rights Watch (HRW) and Harvard Law School’s International Human Rights Clinic. The release of the report comes ahead of a multilateral meeting on lethal autonomous weapons systems at the United Nations office in Geneva, scheduled for next week. HRW recommends that countries “adopt national laws and policies that prohibit the development, production and use of fully autonomous weapons.”

Lauren Walker, “Human Rights Groups Call for Ban of 'Killer Robots,’” *Newsweek*, 9 April 2015. <http://www.newsweek.com/human-rights-groups-call-ban-killer-robots-321208>

Rapid technological innovation has revolutionized warfare; it has pulled soldiers away from war’s front lines and gradually replaced them with advanced weaponry. Drones, for instance, covertly strike targets around the globe as their operators sit safely elsewhere. But humanity is now on the cusp of developing “killer robots,” or

fully autonomous weapons capable of killing without operators, and human rights defenders want them banned. In a report released on Thursday, Human Rights Watch (HRW) and Harvard Law School jointly call for the weapons to be declared unlawful by international treaty before they become a reality.

“‘Killer robots’ to provide ‘accountability gap’ for military, must be banned – HRW,” *Russia Today*, 10 April 2015. <http://rt.com/news/248405-killer-robots-ban-hrw/> Future use of fully autonomous weapons or ‘killer robots’ may provide a loophole for the military to escape responsibility for unlawfully killing or injuring civilians, a report by Human Rights Watch says. In order to deal with the “accountability gap,” which would come in case of use of autonomous, the authors of the report recommend to “prohibit the development, production and use of fully autonomous weapons through an international legally binding instrument” and come up with national laws promoting the ban.

Howard Koplowitz, “Killer Robots 2015: Fully Autonomous Weapons Too Dangerous To Be Developed,” *International Business Times*, 10 April 2015. <http://www.ibtimes.com/killer-robots-2015-fully-autonomous-weapons-too-dangerous-be-developed-human-rights-1877156>

Killer robots haven’t made their way to the battlefield just yet, but the Human Rights Campaign and Harvard Law School’s International Human Rights Clinic recommended both international agreements and national laws to stop the development, production and use of fully autonomous weapons. The nature of killer robots makes it nearly impossible for victims of the technology to pursue legal recourse, the authors said.

Denise Garcia, “Killer Robots: Toward the Loss of Humanity,” *Ethics and International Affairs*, 10 April 2015. <http://www.ethicsandinternationalaffairs.org/2015/killer-robots-toward-the-loss-of-humanity/>

This April, nations will join together at the United Nations in Geneva to hold formal talks on “lethal autonomous weapons systems,” also known as “killer robots,” under the auspices of the Convention on Certain Conventional Weapons. How can globally-agreed norms be created and strengthened in all areas of autonomous weapons production, use, and proliferation to safeguard future generations from the scourge of violence? Due to the many complex ethical, legal, security, and moral implications of these weapons, states, nonstate entities, researchers, and activists find themselves in two camps.

Jonathan O’Callaghan, *Daily Mail*, 10 April 2015. <http://www.dailymail.co.uk/sciencetech/article-3033840/Will-robots-away-war-crimes-Human-Rights-Watch-warns-NO-ONE-accountable-AI-commits-atrocities.html>

If a robot unlawfully kills someone in the heat of battle, who is liable for the death? In a report by the Human Rights Watch, they’ve highlighted the rather disturbing answer: no one. The organisation says that something must be done about this lack of accountability - and it is calling for a ban on the development and use of ‘killer robots’.

Mark Gubrud, "Semi-autonomous and on their own: Killer robots in Plato's Cave," *Bulletin of the Atomic Scientists*, 12 April 2015. <http://thebulletin.org/semi-autonomous-and-their-own-killer-robots-plato%E2%80%99s-cave8199>

As China, Russia, the United States, and 115 other nations convene in Geneva for their second meeting on lethal autonomous weapons systems, that phrase still has no official definition. But consensus about definitions is not the main problem; the heart of the matter is the need to prevent the loss of human control over fateful decisions in human conflict. Thinking about autonomous weapons systems should be guided by fundamental principles that should always guide humanity in conflict: human control, responsibility, dignity, sovereignty, and above all, common humanity, as the world faces threats to human survival that it can only overcome by global agreement.

John C. Havens, "Should we let robots kill on their own?" *Mashable*, 12 April 2015. <http://mashable.com/2015/04/12/meaningful-human-control/>

Next week, from April 13th to April 17th, the second multilateral meeting on lethal autonomous weapons systems is taking place at the United Nations in Geneva. At the meeting, AJung Moon, an executive member and co-founder of the Open Roboethics initiative (ORi), a think tank that aims to foster active discussions of ethical, legal, and societal issues of robotics will report on the preliminary results of a survey created by her team examining public attitudes toward autonomous weapon robots. She'll be joining a number of organizations supporting the Campaign to Stop Killer Robots, whose primary objective is the pre-emptive ban on fully autonomous weapons. There are really only two outcomes on this issue — either the creation and spread of lethal autonomous weapons is banned or it isn't.

Max Plenke, "Killer Robots Might Be Closer Than We Think — And We Should Be Very Afraid," *Science.mic*, 13 April 2015. <http://mic.com/articles/115216/killer-robots-might-be-closer-than-we-think-and-that-can-t-happen>

A group of human rights activists just posed a terrifying question: If robots can think for themselves, who's responsible when they commit heinous war crimes? A recent paper from Human Rights Watch and Harvard Law School recognizes calls on the United Nations to ban "killer robots," or fully autonomous machines with the ability to select their own targets free from human control.

Chloe Albanesius, "Killer Robots Are Probably a Bad Idea," *PC*, 13 April 2015. <http://www.pcmag.com/article2/0,2817,2481295,00.asp>

To most of us, autonomous killer robots are the stuff of science fiction. But according to a new report, they could become a reality sooner than we might think—and that is a very bad idea. In advance of a week-long United Nations meeting about lethal autonomous weapons systems (LAWS), which kicked off today, Human Rights Watch and Harvard Law School released a report that strongly discouraged the development of robots that could kill a target on their own, without any human interaction. These devices would represent a "step beyond" today's remote-controlled drones, which are unmanned but ultimately controlled by people.

Chris Baraniuk, "Can we stop killer robots? UN meets to debate possible treaty," *New Scientist*, 13 April 2015. <http://www.newscientist.com/article/dn27339-can-we-stop-killer-robots-un-meets-to-debate-possible-treaty.html#.VTFq59zF-So>

You will be exterminated! Or perhaps not, if a group of anti-killer robot campaigners get their way. This week, the United Nations' Convention on Certain Conventional

Weapons (CCW) is once again hearing from technical and legal experts on the subject of killer robots. The series of briefings and panel debates is the latest step on the road to a potential treaty on lethal autonomous weapons. Key to the discussions is the definition of "meaningful human control" – what type of human involvement is necessary in the process of killing someone on the battlefield?

Owen Bowcott, "UK opposes international ban on developing 'killer robots,'" *The Guardian*, 13 April 2015. <http://www.theguardian.com/politics/2015/apr/13/uk-opposes-international-ban-on-developing-killer-robots>

Activists urge bar on weapons that launch attacks without human intervention as UN discusses future of autonomous weapons. The UK is opposing an international ban on so-called "killer robots" at a United Nations conference that is this week examining future developments of what are officially termed lethal autonomous weapons systems (LAWS).

Paul Scharre, "Keeping Killer Robots on a Tight Leash," *Defense One*, 14 April 2015, <http://www.defenseone.com/ideas/2015/04/keeping-killer-robots-tight-leash/110164/> This week, delegates to the United Nations Convention on Certain Conventional Weapons will discuss autonomous weapon systems, or what activists call "killer robots." Colorful language aside, the incorporation of increasing autonomy into weapons raises important legal, policy, and ethical issues. These include potential motivations for developing autonomous weapons, how they might proliferate, implications for crisis stability, and what their possible development means for the military profession.

Sean Welsh, "Killer robots: The future of war?" *CNN*, 14 April 2015.

<http://www.cnn.com/2015/04/14/opinions/welsh-killer-robots-conversation/>

The roles played by autonomous weapons will be discussed at a meeting this week in Geneva, Switzerland, which could have far reaching ramifications for the future of war. Sean Welsh is a Doctoral Candidate in Robot Ethics at University of Canterbury in New Zealand. The opinions expressed in this commentary are solely those of the author. CNN is showcasing the work of The Conversation, a collaboration between journalists and academics to provide news analysis and commentary.

Kounteya Sinha, "Killer robots worry United Nations," *The Times of India*, 14 April 2015. <http://timesofindia.indiatimes.com/tech/computing/Killer-robots-worry-United-Nations/articleshow/46922166.cms>

Robots which can decide what to kill are all set to change the face of modern warfare but has left the United Nations seriously worried. A major multilateral meeting on "lethal autonomous weapons systems" (LAWS) is taking place in Geneva at present to discuss the legality and moral issues surrounding killer robots

Imogen Foulkes, "Should 'Killer Robots' Be Banned?" *IRIN*, 14 April 2015.

<http://www.irinnews.org/report/101360/briefing-should-killer-robots-be-banned>

Drones are already doing a lot of killing on behalf of certain governments, but a human being still has to make a conscious decision somewhere and press a button. What if killing machines were programmed to take such decisions all by themselves? "Killer robots" may sound like fodder for dystopian fiction, but they are exactly what weapons technology experts, human rights groups and United Nations' member states are meeting in Geneva this week to discuss.

Adam Sage, "Humans try to set rules for killer robots," *The Times of London*, 14 April 2015. <http://www.thetimes.co.uk/tto/news/world/europe/article4410586.ece>
Governments were urged yesterday to block a new generation of robots capable of deciding who to kill on the battlefield. The call came as the UN held a meeting in Geneva, Switzerland, to discuss the ethical and legal challenges posed by the development of lethal autonomous weapons systems.

Keith Wagstaff, "Jody Williams Helped Ban Landmines. Can She Stop Killer Robots?" *NBC News*, 15 April 2015. <http://www.nbcnews.com/tech/tech-news/jody-williams-helped-ban-landmines-can-she-stop-killer-robots-n340661>
Jody Williams is on a mission to stop killer robots. The Nobel Peace Prize winner wants an international treaty forbidding machines that can target and kill human beings without requiring a person to pull the trigger. This week in Geneva, she is part of a group meeting with United Nations delegates who are trying to answer the question, "Do nations regulate killer robots when they arrive or ban them before they can do any damage?" "People keep saying that it's inevitable," she said. "Nothing is inevitable. It's only inevitable if you sit on your butt and don't take action to stop things you think are morally and ethically wrong."

Mike Spies, "Navy Unveils Swarming Killer Robots to Help Marines in Battle," *Vocativ*, 15 April 2015. <http://www.vocativ.com/usa/nat-sec/navy-unveils-swarming-killer-robots-to-help-marines-in-battle/>
The Office of Naval Research has unveiled what it is calling the future of the American military's drone technology—lightweight, flying killer robots that can swarm and overwhelm an adversary. As more than 120 countries convened at the U.N. in Geneva to discuss the future of drone warfare this week, the Navy's research arm announced it had started testing its LOCUST drones (Low-Cost UAV Swarming Technology). And while the acronym may conjure a kind of dystopian sci-fi nightmare, Navy scientists insist that LOCUST drones will give sailors and marines a tactical advantage on the battlefield.

Connelly Lamar and Brian Anderson, "The Dawn of Killer Robots," *Motherboard*, 16 April 2015. <http://motherboard.vice.com/read/inhuman-kind-killer-robots>
The robots have always been coming. But this week, as the specter of intelligent machines dominates the Convention on Conventional Weapons discussions at the United Nations, and as some of the most powerful tech firms in the world join the military-industrial complex, it seems the evolving relationship between us meatbags and robots has entered an exciting, sobering new era. Take two six-foot-tall, 330-pound bipedal humanoid robots named ATLAS and ESCHER. They're not Terminators, but they sure resemble those iconic killer robots from the big screen.

Mike Orcutt, "3 Questions on Killer Robots," *MIT Technology Review*, 17 April 2015. <http://www.technologyreview.com/news/536881/3-questions-on-killer-robots/>
Fully autonomous weapons should be outlawed before they are developed, says a human-rights scholar. Today a person is pushing the button when a drone fires on a target, but in the near future, nations might try to develop weapons that don't need a human in the loop. In advance of the meeting, a group from Harvard Law School and Human Rights Watch released a report that calls for an international treaty banning these technologies as soon as possible. The report's lead author, Bonnie Docherty, a

lecturer at Harvard Law School and a senior researcher at Human Rights Watch, spoke to Mike Orcutt of MIT Technology Review.

Brooks Mencher, "Rise of robotic killing machines has a cautious world talking," San Francisco Chronicle, 23 April 2015. <http://www.sfchronicle.com/opinion/article/Rise-of-robotic-killing-machines-has-a-cautious-6219854.php>

They're called lethal autonomous weapons, or LAWs, and their military mission would be to seek out, identify and kill a human target independent of human control. Human decision would not be in the loop, and the only button a military commander would push would be the "on" button. In military terms, it's called "fire and forget." The United Nations panel of experts would not have assembled for a second time in as many years if the battlefield use of thinking, man-killing robots were not at hand.

Jeff Gray, "If a robot kills someone, who is to blame?" *The Globe and Mail*, 16 April 2015. <http://www.theglobeandmail.com/news/world/if-a-robot-kills-someone-who-is-to-blame/article23996250/>

If you are looking for signs of the coming robot apocalypse, look no further than the demilitarized zone between North and South Korea. Here, along the most fortified border in the world, more than just human soldiers are keeping watch. Meet the SGR-A1, a sentry robot deployed by South Korea and developed by a subsidiary of Samsung.

ARABIC

Al-Youm, 14 April 2015. "الجارديان: بريطانيا تعارض حظرًا دوليًا على تطوير الروبوتات القتالية" <http://bit.ly/1JHp7wv>

Sky News Arabic, 14 April 2015. "بريطانيا تعارض حظر "الروبوتات القتالية" <http://bit.ly/1bHNMQC>

Shorouk News, 14 April 2015. "الجارديان: بريطانيا تعارض حظرًا دوليًا على تطوير الروبوتات القتالية" <http://www.shorouknews.com/news/view.aspx?cdate=14042015&id=29ea76f8-38d3-4e03-98d2-6900ddafb04f>

Ahram, 14 April 2015. "جارديان: بريطانيا تعارض حظرًا دوليًا على تطوير الروبوتات القتالية" <http://gate.ahram.org.eg/News/626992.aspx>

Al-Masri Al-Youm, 14 April 2015. "«جارديان»: بريطانيا تعارض حظرًا دوليًا على تطوير «الروبوتات القتالية»" <http://www.almasryalyoum.com/news/details/706696>

News Online, 14 April 2015. "بريطانيا تعارض حظر "الروبوتات القتالية" <http://www.newsonlinee.cc/national/174099.html>

Assabeel, 14 April 2015. "بريطانيا تعارض حظر "الروبوتات القتالية" <http://bit.ly/1GlmfTb>

Al-Sharq, 14 April 2015. "معارضة بريطانية لحظر "الروبوتات القتالية" <http://www.al-sharq.com/news/details/327479#.VTkJwyFVhBc>

Mogaz Masr, 14 April 2015. "بريطانيا تعارض الحظر الدولي على تطوير "الروبوتات القتالية" <http://www.mogazmasr.com/world/8036.html>

Al-Mal News, 14 April 2015. "بريطانيا توافق على منح "روبوتات مسلحة" صلاحية القتل" <http://www.almalnews.com/Pages/StoryDetails.aspx?ID=218662#.VTkJ1CFVhBc>

IRIN News Arabic, 16 April 2015. "هل يجب حظر "الروبوتات القتالية"؟" <http://bit.ly/1b3FJCN>

CHINESE

"人權組織籲聯合國禁「殺手機器人」研發" *Sina*, 10 April 2015. <http://news.sina.com.tw/article/20150410/14155182.html>

“英国反对关于研发“杀手机器人”的国际禁令”*Huan Qui*, 14 April 2015.

<http://world.huanqiu.com/exclusive/2015-04/6187086.html>

“联合国试图就杀手机器人使用达成协议”*Science Net*, 15 April 2015.

<http://news.sciencenet.cn/htmlnews/2015/4/316971.shtm>

FRENCH

Etienne Dubuis, “Faut-il interdire les robots tueurs?” *Le Temps*, 20 avril 2015.

http://www.letemps.ch/Page/Uuid/1d59730a-e6cb-11e4-94b8-e7cac4d21567/Faut-il_interdire_les_robots_tueurs

Pauline Chateau, “Pourquoi les Nations Unies devraient interdire les «robots tueurs»?” *L'Express, L'Expansion*, 9 avril 2015. http://lexpansion.lexpress.fr/high-tech/pourquoi-les-nations-unies-devrait-interdire-les-robots-tueurs_1669690.html

“Les «robots tueurs» irresponsables ?” *Liberation*, 9 avril 2015.

<http://www.liberation.fr/direct/element/4491/>

Robin Prudent, “«Un robot m’a tuer» mais qui est responsable ?” *L’Obs*, 10 avril 2015. <http://rue89.nouvelobs.com/2015/04/10/robot-tuer-est-responsable-258603>

Frédéric Boutier, “Robots tueurs : ce n'est plus de la science fiction, l'ONU ouvre le débat sur leur légalité,” *Metro News*, 10 avril 2015. <http://www.metronews.fr/high-tech/robots-tueurs-ce-n-est-plus-de-la-science-fiction-l-onu-ouvre-le-debat-sur-leur-legalite/modj!wprbR7SIcAOWI/>

“Défense: les experts discutent des robots tueurs à l'ONU,” *Arc Info*, 13 avril 2015.

<http://www.arcinfo.ch/fr/suisse/defense-les-experts-discutent-des-robots-tueurs-a-l-onu-566-1443882>

Cathy Macherel, “Le combat ardu contre les robots tueurs,” *24 Hours*, 14 avril 2015.

<http://www.24heures.ch/suisse/combat-ardu-robots-tueurs/story/21321970>

“Technologie. Les robots tueurs sont-ils l’avenir de la guerre ?” *Courrier International*, 15 avril 2015.

<http://www.courrierinternational.com/dessin/technologie-les-robots-tueurs-sont-ils-lavenir-de-la-guerre/>

“Briefing: Faut-il interdire les « robots-tueurs » ?” *IRIN*, 15 avril 2015.

<http://www.irinnews.org/fr/report/101367/briefing-faut-il-interdire-les-robots-tueurs>

Bérénice Dubuc, “Faut-il avoir peur des robots tueurs?” *20 Minutes*, 16 avril 2015.

<http://www.20minutes.fr/monde/1588855-20150416-faut-avoir-peur-robots-tueurs>

“Bientôt, des robots tueurs pour le maintien de l’ordre ?” *Amnesty International*, 16 avril 2015.

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