

Mr. President

Since the Czech Republic is taking the floor for the first time allow me to congratulate you Mr. President, on your assumption of the difficult task – the chairmanship of this informal Meeting of Experts on Lethal Autonomous Weapons Systems. I want to assure you of the full support and cooperation of our delegation.

The Czech Republic as a party to CCW and all its protocols fulfills all its obligations in this regard and will maintain an active involvement in the relevant activities.

The Czech Republic welcomes the decision taken by the High Contracting Parties to the Convention to convene informal Meeting of Experts. Unlike initiatives being brought to other fora, we find the CCW platform appropriate to discuss questions related to emerging technologies in the area of lethal autonomous weapons systems. We also believe the meeting will provide a unique opportunity for States Parties to discuss the increasingly important issue of LAWS, that can fundamentally change they way of fighting wars and conduct of armed conflicts and of course could represent a serious threat for civilians.

If it has been quite difficult to keep a balance between humanitarian concerns and security requirements in the past, it will be even bigger challenge to strike it within the context of sophisticated autonomous weapons of the future. This is only one of the reasons why we think it is important to start work on the needs of protecting civilians and combatants from possible effects of LAWS well in advance before they will be developed.

The Czech Republic, similarly as many other state parties to CCW, does not have a firm coordinated national position on or an approach towards many aspects of LAWS. Views that might be expressed in 2 national presentations, provided by our experts from the Czech Defense University will not represent a national position on any aspect of research, development or production or of future use of LAWS. Our hope is however, that we could start to build it on results of this meeting.

We believe that LAWS despite their complexity will become an important part of CCW as an international humanitarian tool with the potential to effectively prevent a negative impact of these weapons on civilian populations.

Thank you Mr. President

Dear Chariman

I am LTC Jan Mazal, from the University of Defence from the Czech Republic and let me add several points to the autonomous systems problematics from the military perspective.

At the first let me say that, the effort to increase the capability of a foot soldier on the battlefield is known since ancient times. This intentions already at that time, lead to a development attempts of the war machines helping to achieve a dominance on the battlefield.

The latest trends of the social requirements to the military organizations create a strong pressure on military systems in order to maintain or increase their current capability with reduced investments and staff involvement. This leads to the search of innovative approaches, in advance and in all dimensions of operational environment, which will allow us to quickly respond to the rapidly changing reality of the contemporary world and future threats.

After the one century, automated and robotic platforms have developed in a highly sophisticated systems, which plays irreplaceable role in today's world, and we can assume that progress in the next years will maybe differ from the trend, to which we were accustomed in the past. This factor also creates new threats, conditions, approaches, scenarios and the operational dimensions, to which the troops in the past have not been prepared and it puts a much higher demands on the military personnel, than ever before.

The current highly automated and robotized systems are already quite a long time established in the air operation domain and when we analyze the experience from the current conflicts, this machines were evaluated as the most effective systems in the war against terrorism on the current asymmetric battlefield. From the military point of view it is analogically expected that autonomous robotic systems will gradually take over the initiative in the other operation domains, especially on land and sea.

Last decade of conflicts in various parts of the world put in a tests lot of a new military technologies in scenarios and conditions that was never possible before. Most of this technologies proved itself as a decisive improvement in a contemporary warfare what enable a high selective precision and depression of collateral damage.

When we look at the current state of technology development, it is hard to predict a time when autonomous systems will achieve the intellectual superiority over the human brain, but in some scientific communities prevail the consensus that it will certainly happen in the future.

We could expect, that the character of future conflicts will be enhanced by the new, powerful and highly mobile weapons systems that almost certainly moves the future armed conflicts into a new dimension of threats, approaches, concepts and the perceptions of combat activities. Military experts assume that in a future environment will not be possible to succeed with old fashion approaches, tactics and systems of contemporary technology.

The main purpose of implementation of autonomous or automated systems in military domains today is to reduce the risk of injury or death of own troops and this trend from the military perspective is constantly growing.

Looking at the rapid progress of technological developments in many areas, military experts assume that in a future, these systems will be deployed, mainly due to the higher efficiency and precision in the combat activities with lower failure rate than a human could compete. Many military experts are convinced, that the advances on the field of artificial intelligence will enable to solve a wide range of a problems linked with a combat activities, including the rules of engagement in the behavior of the robots with the level of success that exceeds the human abilities.

Looking at the fact that the man is a fundamental factor in the domestic and international policy, it is evident that the area of armed conflicts is the domain of man, as a default initiator and the executor of the wide spectra of activities, where the autonomous systems could be used only as tools supporting the achievement of a strategic or operational goals.

As a conclusion:

The ability of rational decision making is one of the typical characteristics of a human that enables him to develop the science, culture and society at such a level, which is so far unique in the known universe, but this fact may change in the future.

Modern society, security environment and new technologies impose an incomparably higher demands on armies, than it has been at any time in the past, where the highly automated or autonomous systems helps to fulfill that requirements and face to the future threats.

The deployment of modern technologies in the real conflict clearly showed that these systems and the concepts ensure a higher efficiency and control of the combat and finally lead to the reduction of losses and collateral damage on the battlefield.

Unreasonable steps and limitation of a research and scientific experimentation on that field could lead to the security disbalance, more soldiers in a risky situations on the battlefield and actually step back to the old fashion military systems.

Also, there is no exact scientific proof or indication yet, that the future technology will not solve all raised concerns.

Next, it is necessary to mention that any system for military purposes must be certified, must fulfill demanding criteria, must be tested under the various conditions must prove itself in hundreds of experiments and implementation of this kind of technology goes really slowly, because the armies are very very conservative on that field. And also, because of that procedures, lot of systems failed to get to the service.

We are at the beginning in the development of these systems and without proper understanding and exact proofs of all negative aspects of autonomous systems, it is probably too soon to rise an ultimate results. Only the ongoing research and experience could tell us the true about that feared issue.

Thank you

Aspects of autonomous systems research, production and usage – military perspective

Good morning/afternoon. I am (Dr.) Jan Farlik from University of Defence, Czech Republic and my branch is military air force mechatronics and cybernetics. (I would like to) Thank you for giving me the space to say my short point of view. Next

This meeting of experts discusses the potential ban of research, production and usage of lethal autonomous weapons or killer robots. (My contribution to this discussion is pointing some question we should answer before the ban itself.)

First of all I would like to agree with those who are against the General ban not pointing deep essence of this matter. If the world community will agree on the limitation or ban of research, production and usage of lethal autonomous weapons, it should be carefully defined not to allow to wage a robot wars killing everything life around but also not to cripple countries to build state of the art defence. Let me explain some aspects of the matter. Next

First is the research - If we want to ban the LAW research, how do we cope with for example contemporary level of modularity. Almost every complex devise or system, no matter if for civilian or military purposes is modular. We can easily interchange one part or subsystem to another and modify or upgrade for example Search and Rescue bot to Search and Destroy bot. It is just a matter of few minutes to make the modification. So forgive me my scepticism about the research ban because we can easily invent the not lethal system that will just look at the target and say “this is enemy” or “this is friend”. After all, we will modify the code not say anything but to trigger connected weapon.

The matter of production ban is clearer to me. However, there is still possibility, to produce two regular systems and finally produce one LAW system by connecting them. It is similar problem as in case of research. The main reason is that more and more armies use civilian interface standards to connect or operate their weapon systems. Next

Finally the technical aspect of the ban of LAW usage is also very tricky. I totally agree to reason about to ban the LAW that will operate in the field trying to search and destroy anything unknown, however I can imagine the fully autonomous air defence robot guarding the airways during crises or conflict. In those cases no civilian air traffic is conducted.

So for me instead of general ban for usage of LAW (if any) should be transformed to certain kinds of limitations or strictly defined bans of certain LAW operations.

I think that the level of trust to any kind of autonomous weapon systems now as well as in the future will never be 100 percent. From the technical angle of view – it is not possible to have 100 percent reliable system so I do not believe that anybody is going to operate any robotic autonomous weapon system with fully man-out-of-the-loop architecture. Next

You can see that from my point of view, there is no clear Shakespeare’s proclamation if “ban or not to ban”. It would be great to have all this future military LAW or killer robots research, production and usage under control via the UN ban, however today speed of technology evolution and system modularity makes me curious and maybe little bit sceptical how we would practice ban like this. It is not impossible, however very long long way run.

Autonomous systems for military purposes – opportunity or threat

Thank you for the word. This session is about operational and military aspects of LAW so let me express my point of view on this subject. (As a soldier and scientist in one person) I see a lot of opportunities for robotic entities on the theatre of conflict. But if we are talking about fully autonomous armed systems with reasonable artificial intelligence? That's quite difficult for me. Next

I can imagine LAW systems guarding certain territory especially in the under-sea or air domain, because these domains are without civilians, especially during the time of crises or conflict. But the employment of LAW on ground or with the effect on the ground? That should be very carefully analysed if there is not more threats than opportunities especially in connection with civilian population. So I agree with those saying that we can operate future LAW quite safely especially in case of under-sea and air domain.

I can give one example from air defence domain – for instance a small mobile air defence robot, able to move itself in certain area, than settle itself and scan the airspace by its own or connected sensors. This robot could simply detect all flying objects within for example some restricted or no fly zone, identifies them and engage all non-friendly aircrafts. This bot would have just an effector able to engage flying objects, therefore not able to shoot at ground targets. And if that bot is acting according to firm and programmed rules of procedural control there is minimal danger for own force or civilian population. Next

Not contrary to what I have just said, I do not see any advantage of the fully autonomous weapon systems in the man-out-of-the-loop mode of operation. First, it is too dangerous to unleash the iron dogs even very intelligent and with sophisticated algorithms. It is because I simply do not believe that any agency or company can produce 100 percent reliable system, 100 percent hack-proof software and 100 percent jamming proof electronic device. From my point of view I will always rely on the man-on-the-loop that is able at least to switch-off the bot or to initiate the self-destruct sequence not to allow the bot to go mad or to fall into enemy hands. And I believe that any LAW operator or owner thinks the same. Next

Another argument is that even human soldiers or human operated weapon systems are usually not man-out-of-the-loop, or we should say commander-out-of-the-loop. Today's Network Centric Warfare puts stress to shared information space so higher echelons are for almost all the time somehow in contact with the force. Of course, there are also certain special operations with higher commander-out-of-the-loop but just for small amount of time. Next

Let me conclude my short speech. I definitely vote for the wide and strictly defined limitations of LAW. We should not allow having future battlefield or near cities and villages full of broken or damaged man-out-of-the-loop armed robots. Otherwise we could experience a new type of walking minefields. However we should distinguish the bot from the bot. Some LAW applications can definitely operate with no danger to civilian population, which I suppose is the main reason we are here now – to zero the negative or lethal effects of civilian population.

Thank you for your attention.