# UNIDIR invites you to the side event

## Cyber and autonomous weapons:
## Potential overlap, interaction and vulnerabilities

9 October 2015, 13h15–14h30, Room 8, UN Headquarters

The international security and arms control community is seriously engaging with the issues surrounding the weaponization of increasingly autonomous technologies and cyber weapons. Yet thus far these are treated as distinct conversations, held in different fora and involving different experts.

Increasingly autonomous weapons could be extremely vulnerable to a variety of cyber attacks—such as hacking, takeover, reprogramming or jamming. How will we know that autonomous weapons are operating as programmed, without interference?  Will increasing autonomy act as a driver for cyber weapon development in order to exploit this vulnerability?  And as we develop greater capabilities in Artificial Intelligence ("learning machines" are in reality "learning programmes"), both cyber and autonomous weapons will be AI enabled—cyber and autonomous weapons are on a convergent path. How does convergence bode for the distinct legal and normative frameworks currently under discussion?

Featured panellists:

> **Ken Anderson** on "Comparing Emerging Weapon Technologies and Possible Regulation Regimes: Similarities and Differences, Gaps and Overlaps Between Autonomous Weapon Systems and Cyberweapons"

> **Dr Patrick Lin** on "Cyber Norms: A Missing Link in the Autonomous Weapons Debate"

> **Dr Heather Roff** on "Cybersecurity, Artificial Intelligence and Autonomous Weapons: Critical Intersections"

Followed by questions and discussion

**Kenneth Anderson** is professor of law at Washington College of Law, American University (Washington DC); a visiting fellow of the Hoover Institution, Stanford University; and a non-resident senior fellow of the Brookings Institution. He writes in the areas of international law, the law of armed conflict, and weapons and targeting law.

**Dr Patrick Lin** is the director of the Ethics + Emerging Sciences Group at California Polytechnic State University (San Luis Obispo), where he is an associate philosophy professor. He is also affiliated with Stanford Law School and University of Notre Dame. Patrick has written extensively about ethics and emerging military technologies, especially robotics and cyberwarfare, and has provided briefings to major organizations in the US defence and intelligence communities, as well as academic and industry organizations.

**Dr Heather M. Roff** is a Research Scientist in the Global Security Initiative at Arizona State University, a national Cybersecurity Fellow at the New America Foundation, and a Research Associate at the Eisenhower Center for Space and Defense Studies at the United States Air Force Academy. Her new book project, *Lethal Autonomous Weapons and the Future of War*, examines the moral, legal and policy implications of this emerging technology.

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## About the Project

In 2013 UNIDIR launched an initial 18-month project on the weaponization of increasingly autonomous technologies.

The project focused on advancing the nascent multilateral discussion by refining the areas of concern, identifying relevant linkages, and learning from approaches in other domains that may be of relevance to this topic. Rather than offering specific policy recommendations, the project's primary aim was to provide insights and conceptual frameworks that will enable policy-makers to better think, discuss and make informed decisions about autonomy in weapon systems.

Now in its second phase, the project continues to focus on bringing clarity to circular and polarized discussions on the weaponization of increasingly autonomous technologies. Building on Phase I's successful format of small, expert-led discussions and public observation papers, the project examines substantive areas where there is common ground, identifies areas requiring further investigation and indicates where other fields and disciplines might usefully contribute to the discussion in the arms control community.

For more information about UNIDIR's project "The Weaponization of Increasingly Autonomous Technologies", supported by the Governments of Canada, Germany, Ireland and the Netherlands, see http://bit.ly/1EvtIBs.

## Latest paper

### *The Weaponization of Increasingly Autonomous Technologies in the Maritime Environment: Testing the Waters*

Recent attention among governments, civil society organizations and the media has focused on technical, military, legal and ethical issues of the weaponization of increasingly autonomous technologies. Experts have suggested that fully autonomous weapons are likely to first appear in the relatively "uncluttered" maritime environment. Yet, policy-makers have directed relatively little attention to the specific issues and challenges in this environment that might be different or more acute than on land or in the air. This paper aims to shed light on these issues in order to inform the broader debate on the weaponization of increasingly autonomous technologies. It is the fourth in a series of UNIDIR papers on increasingly autonomous technologies.

Available in pdf at www.unidir.org/publications

See also

- *Framing Discussions on the Weaponization of Increasingly Autonomous Technologies*
- *The Weaponization of Increasingly Autonomous Technologies: Considering how Meaningful Human Control Might Move the Discussion Forward*
- *The Weaponization of Increasingly Autonomous Technologies: Ethics and Social Values*

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