

MAN IN THE LOOP

RESEARCH AND PRODUCTION OF AUTONOMOUS WEAPONS IN ITALY

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ABSTRACT

With the present report, we intend to bring to the attention of readers and policy-makers the often-overlooked ethical limitations posed by the latest innovations and technological developments in the weapons industry. This is a slippery slope, for we maintain that *all* weapons and military technologies, regardless of their reliance on artificial intelligence, are capable of bringing death and destruction. ***Man in the loop*** aims at highlighting the many issues that may arise when autonomous weapons are used in contexts of war or geopolitical tensions, while simultaneously providing a general framework on the production and adoption of these advanced systems in Italy.

In this regard, the events of September 16, 1983, are worth remembering. Soviet Air Forces officer Stanislav Evgrafovič Petrov found himself reacting to a radar's detection of five nuclear missiles launched from the United States and aimed at Russian territory. Only through common sense and experience could he conclude, in a very short span of time, that it must have been a radar malfunction. He thus

avoided doing what the protocol would have required of him, that is to refer to his superiors about the attack and start the counter-offensive. If, instead of Petrov, there had been an algorithm designed to follow only the pre-established protocol, chances are that today humanity would be facing a nuclear war, initiated by mistake.

Exactly forty years after the Autumn Equinox Incident, there seems to be, unfortunately, a preference for the precision and the calculation speed of algorithms rather than human experience and intuition. As mentioned in this report's introduction, it's very likely that some autonomous weapons have already been deployed in at least two war contexts, Libya and Ukraine.

The incident involving Stanislav Evgrafovich Petrov perfectly explains what was stated by Professor Guglielmo Tamburrini in an interview for this report. In Tamburrini's words, «human beings do make mistakes, but they have at their disposal a whole range of contextual knowledge to assess situations. Take, for instance, a case in which the combatant surrenders with an unconventional gesture not contained in the artificial intelligence database».

While science has been rapidly evolving, perfecting weapons that are able to function without human intervention, the same cannot be said about the legislation that should keep this evolution under control – especially at international level. For years, in fact, the United Nations' Convention on Certain Conventional Weapons (CCW), established in 1980 in Geneva, has remained caught in procedural matters and definitions, without the acceding States reaching an agreement to prohibit the use of

autonomous armaments. The latter is clearly required, as already made explicit by many experts and campaigns, including ***Stop Killer Robots***.

Italy certainly does not lack interest in this new development in the weapons industry. Even though the Ministry of Defense has responded to our enquiry stating that there are currently no projects underway involving the use of autonomous weapons, some companies in the sector, some university research centers and, in particular, the Italian army have failed to hide their enthusiasm about the prospects that new artificial intelligence technologies seem to offer.

Among the objects of elevated interest is the contribution made by the academic and research world to the weapons industry. In the rules of procedure for military research on the national level, the General Secretariat of the Ministry of Defense states that «to basic research, typically attested at civil structures (CNR, universities, ENEA), corresponds a high probability of achieving radical innovation, i.e. the creation of something completely new, capable of changing the so-called rules of the game».

Milan's Politecnico and Rome's La Sapienza University are two of the largest Italian universities that have decided to join the game, taking part respectively in the development of VTLM-OU (optionally unmanned), proposed to the Department of Defense by Iveco Defence Vehicles S.p.a., of which the first phase is to be financed for € 1.463.211, and of SAGUVET (Universal Autonomous Driving System for Ground Vehicles), already fully-funded with € 909. 224. Those mentioned are only two of the main projects

currently underway in Italy in the fields of research, development and prototyping of autonomous weapons, as recounted in this report's chapter ***Research and technological development***.

We trust that ***Man in the loop*** can become a useful resource to all those who, in the near future, will have to make impactful decisions, both at national and international level. We hope they develop a clearer idea of the risks associated with the use of autonomous weapons. That is why we conclude by reproposing the admonition of the UN Secretary General António Guterres: « machines with the power and discretion to take lives without human involvement are politically unacceptable, morally repugnant and should be prohibited by international law ».

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