



Peace Research Institute Frankfurt
Leibniz-Institut für Friedens- und Konfliktforschung

Autonomous Weapon Systems, Artificial Intelligence and Humanitarian Law

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#TechDiplomacyTalk
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Definition of Autonomous Weapon Systems (AWS)

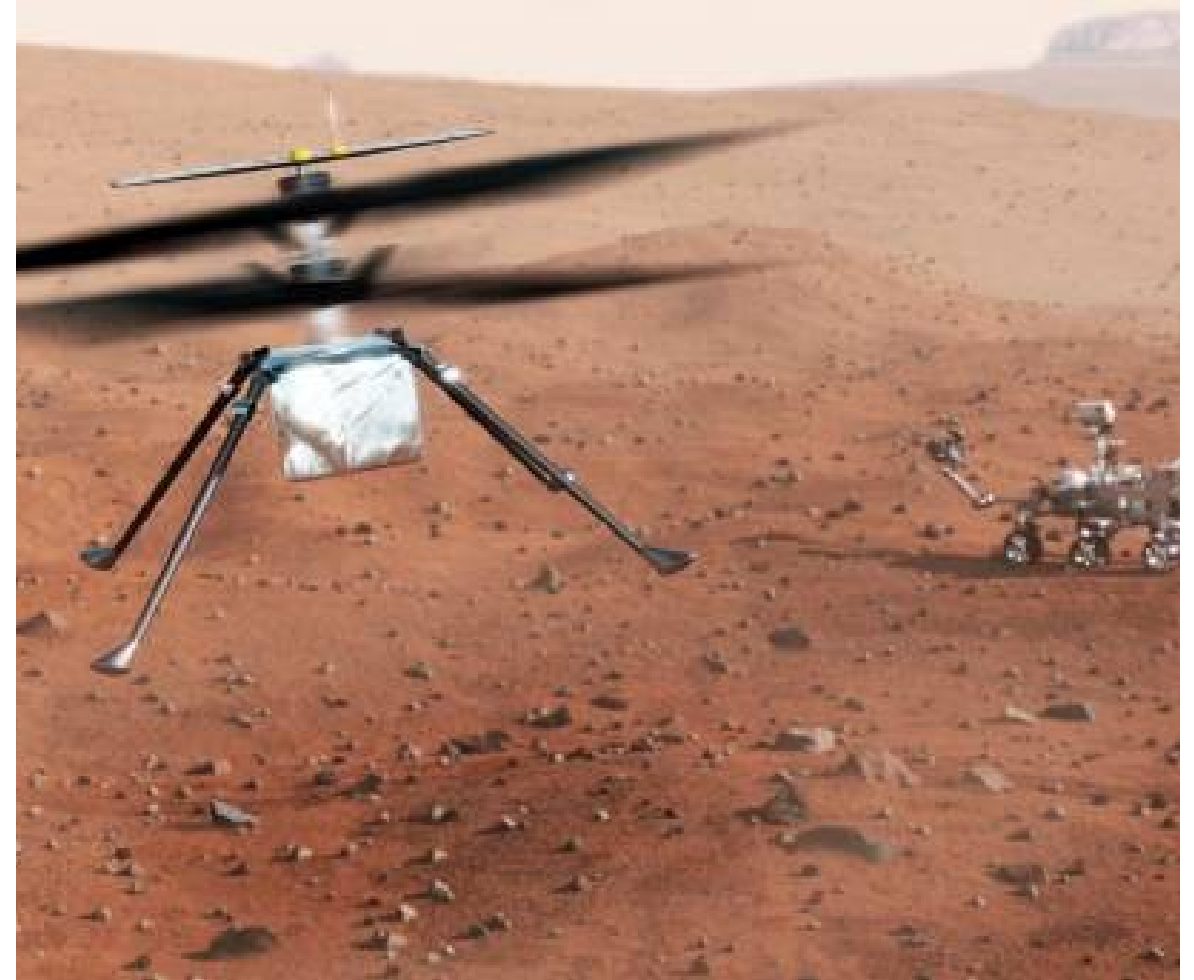


There is no agreed-upon definition of AWS in international law.

ICRC 2016:

“Any weapon system with autonomy in its **critical functions** that can select and attack targets without human intervention.”

- Pressure-activated mines?
- Fire and forget munition?
- Defensive systems?



- Proposal by State of Palestine for the Normative and Operational Framework on Autonomous Weapons Systems CCW/GGE.1/2023/WP.2/Rev.1 (2023)

12. (...) some more rudimentary systems like pressure-activated mines and automatic firing systems set off by motion sensors also fall under the definition of AWS (...). Other system functions such as navigation, landing and refuelling can also be autonomous-however as they do not involve detection-(selection)-engagement of targets, they do not fall within the scope of this paper.

- US Regulation 3000.09 (2012, updated 2023)

SECTION 1: GENERAL ISSUANCE INFORMATION

(b) This directive does not apply to:

(5) mines.

FIRE AND FORGET MUNITION



Fire and Forget Munition: a guidance system to guarantee accuracy

- Normally: some form of “intervention”
 - **Illumination** of the target
 - **Wire guidance**
- Guidance through
 - Coordinates
 - Radar measurements
 - Infrared

} Line of sight



DEFENSIVE SYSTEMS



What are defensive systems?

- Patriot System
- Phalanx
- Iron Dome
- Mantis Nächstbereichschutzsystem
- Sentry Weapons

The Definition of AWS II

USA, DoD Directive – (updated version 2023)

Autonomous weapon system:

A weapon system that, once activated, can select and engage targets without further intervention by an operator. This includes, but is not limited to, operator-supervised autonomous weapon systems that are designed to allow operators to **override** operation of the weapon system, but **can** select and engage targets without further operator input after activation.

Semi-autonomous weapon system:

A weapon system that, once activated, is intended to only engage **individual targets** or **specific target groups** that have been selected by an operator.



Source: [stern.de](https://www.stern.de)

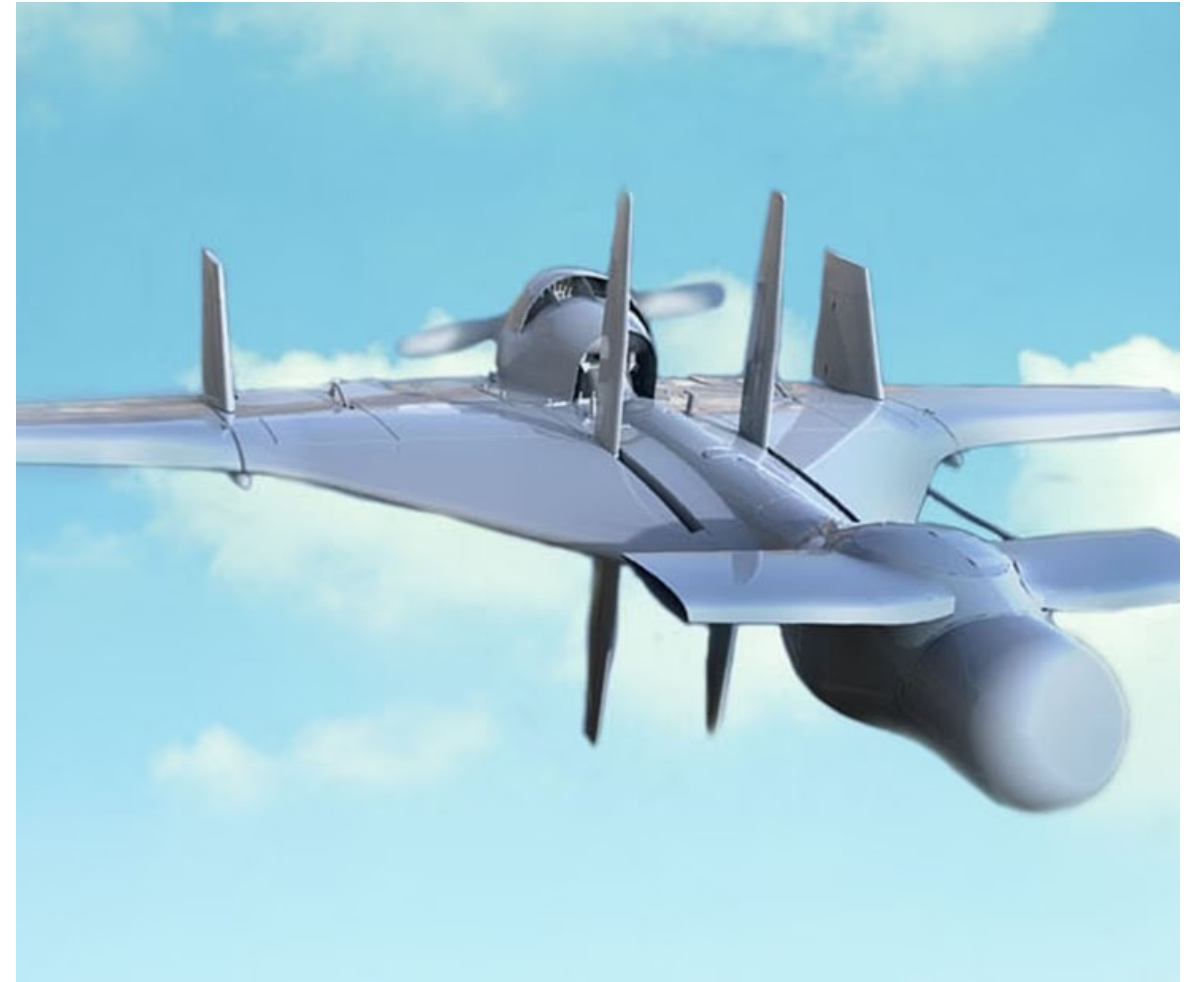
Inextricably intertwined?

Not all AWS need AI to function properly (e.g. IAI Harpy)

-- Is the IAI Harpy an AWS or a semi-autonomous weapon system within the meaning of DOD Directive 3000.09?

AI can be used for very different purposes and at various levels within the military.

- Planning
- Logistics
- POW



Source: flugregvue.de

Fully and partially autonomous weapon systems and the two-tier approach



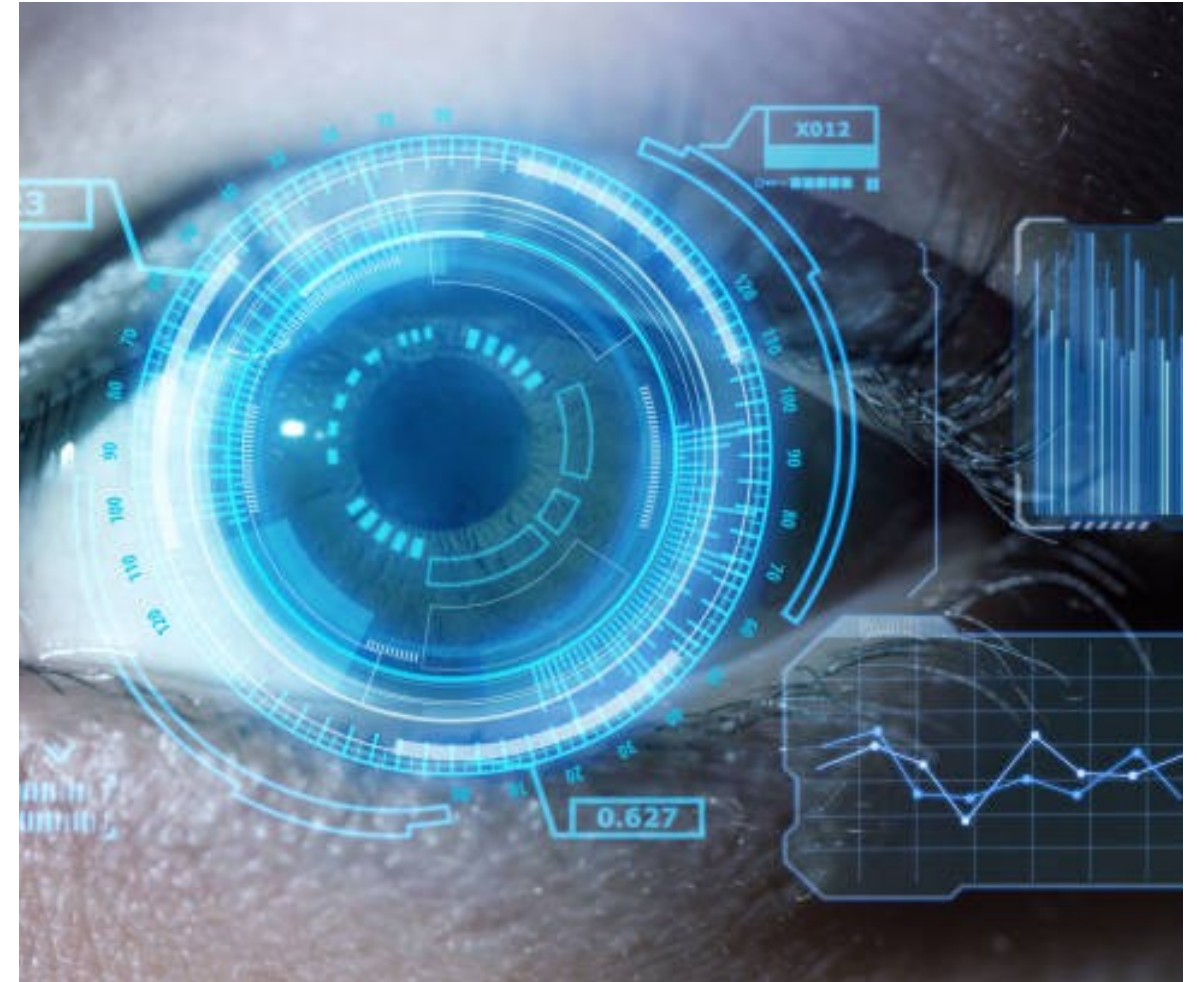
France, Possible Consensus Recommendations, CCW/GGE.1/2021/WP.4

- “Fully” lethal autonomous weapons systems: systems capable of acting without any form of human supervision or dependence on a command chain by setting their own objectives or by modifying, without any human validation, their initial programme or their mission framework
- “Partially” autonomous lethal weapons systems: lethal weapons systems featuring decision-making autonomy in critical functions such as identification, classification, interception and engagement to which, after assessing the situation and under their responsibility, the military command can assign the computation and execution of tasks related to critical functions within a specific framework of action.

Autonome Waffensysteme: Public International Law – Humanitarian Law



- Principle of Distinction, Article 52 AP I GC
- Principle of Precautions in Attack, Article 57 AP I GC
- Principle of Proportionality, Article 57 No 2 AP I GC
- New Weapons: Article 36 AP I GC



Autonomous Weapon Systems: Public International Law – open questions

- IHL: soldiers *hors de combat*?
- PIL: State Responsibility
- International Criminal Law
- Disciplinary law
- State liability?
- Product liability?





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