# AI in Military Decision Support Systems: A Review of Developments and Debates

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Reports from war zones underline that artificial intelligence (AI) technologies are increasingly integrated into military decision-making. Armed forces are developing and employing AI-based systems as part of the complex and multilayered process of decision-making that relates to the use of force. Such uses of AI in security and warfare are associated with opportunities and challenges which deserve further scrutiny. To contribute to ongoing discussions on AI-based decision support systems (AI DSS), this report provides a review of 1) the main developments in relation to AI DSS (at the time of writing in September 2024), focusing on specific examples of existing systems; and 2) the main debates about opportunities and challenges related to various uses of AI DSS, with a focus on issues of human-machine interaction in warfare.

While acknowledging that the development of AI DSS is a global, apparently persistent, and long-standing trend, the report focuses on mapping and analysing specific examples as part of three main, most recently reported, cases: the United States' Project Maven, the Russia-Ukraine war (2022-), and the Israel-Hamas war (2023-). We treat these cases as indicative of possible uses of AI DSS, as well as representative of some of the varied opportunities and challenges associated with the integration of AI into military decision-making. Potential opportunities of AI DSS include increased speed, scale, and efficiency of decision-making which might lead to strategic or humanitarian advantages in a battlefield context. With increased speed and scale, however, also come various risks and concerns around how humans interact with AI DSS in military decision-making on the use of force.

This report highlights how challenges raised by AI DSS are often linked to human-machine interaction and the distributed agency between humans and machines, which raises legal, ethical, and security risks. These include concerns regarding non-compliance with international (humanitarian) law, the erosion of moral agency, and unintended consequences. While the assumption for AI DSS is that humans (will) remain the ultimate decision-makers on the use of force, in certain situations there are risks of humans not exercising sufficient levels of involvement and critical thinking in the targeting process. Ultimately, opportunities and challenges associated with AI DSS also depend on contexts of use and how humans interact with machines within those contexts.

To develop these discussions further, we recommend that stakeholders in the global debate about military applications of AI focus on questions of human-machine interaction and work towards addressing the challenges associated with distributed agency in warfare. This concern spans across discussions on AI DSS and AI in weapon systems. Ways forward in the debate include 1) ensuring a qualitatively high level of human judgement and critical assessment of algorithmic outputs via practical guidance and training and 2) pursuing multistakeholder and cross-disciplinary global governance initiatives to sustain and strengthen the role of humans in the use of force, including via legally binding norms and/or a bottom-up standard-setting process.[1]

*The report is available to download here.*

[1] 2024 Harms and Risks of AI in the Military (HRAIM 2024)