

# Attitudes, Investments, and Confidence-building Measures **Concerning Military Adoption of Artificial Intelligence Technology**

## Abstract

Emerging technologies, especially artificial intelligence (AI), have brought questions concerning trust and ethical apprehensions. The gradual implementation of AI in various industries such as automotive, health care, and defense, demands policies that understand the limitations, risks, and vulnerabilities, including the ability to address autonomous bias concerns. As countries begin to invest in military adoption of AI, global power projection capabilities and the consequences of the security environment need to be assessed in order to maintain strategic stability. In this project, attitudes, investments (in Russia), and confidence-building measures concerning adoption of Artificial Intelligence (AI) technology, primarily in the military, were investigated.

### **Attitudes Towards Al Adoption**

Automation bias is the propensity for people to favor suggestions from automated decision-making systems and to ignore contradictory information from non-automated sources even if it is correct.

There are two classes of errors identified by recent studies:

- Omission errors: when the human decision maker does not notice an automated decision aid failure
- Commission errors: when the human decision maker fails to catch an active error of the automated decision aid

A survey was sent out to a small sample of 500 civil servants, assessing the relationship between concern levels of autonomous bias and support levels of AI adoption. Results demonstrate that evidence of an association between the level of concern about the potential for bias in algorithms and support levels of the use of algorithms in:

- Self-driving vehicles
- Surgical procedures
- Surveillance of criminal suspects
- Monitoring of the civilian population for illegal behavior
- Job selection and promotion for state and local officials
- Decisions about prison sentences
- Decisions about the transplant list
- Military force



The Russian government is trying to position itself as a facilitator of innovation in artificial intelligence, the technology that Vladimir Putin said will lead whoever masters it to global advantage. This quest has been pursued more than Western governments and even more than China's.

next ten years:

- Emphasis on development of unmanned combat systems
- Shift from manual control over unmanned systems to a fully autonomous mode, perhaps powered by an AI program
- Compete with leading military exporters in offering their own autonomous military solutions to potential customers

With a \$70-billion annual budget, a tenth what the United States spends on its own military, Russia is trying to match the Pentagon's major ship and plane programs. Starting in 2020, Russia is expected to test robot swarms in exercises, which will inform how the country prepares for future robot wars.

Russia will test and evaluate:

- Marker robot
- Kungas platforms of unmanned ground vehicles
- Okhotnik combat drone
- Mid-range Orion drone that was tested in Syria
- Forpost drone, UAV originally assembled via Israeli license
- Mid-range Korsar drone
- Long-range Altius drone, similar to American Global Hawk

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# **Investments of AI in Russia**

Trends to observe in the Russian defense industry over the

There are hints that certain Russian UAV and UGV systems may be offered to potential customers in the Middle East and supposed interest from Brazil will lead to domestically manufacturing Russia's Orlan-10 UAV.

Russia has failed to launch an innovation center, similar to Silicon Valley, for this project led to the reality that the Russian hi-tech market was too small, underdeveloped, or immature to properly absorb such results. Yet, scholars have predicted that Moscow has a STEM-educated workforce that could propel Russia into the ranks of high-tech trend-setting nations. In the future, it is important for Russia to develop the hi-tech private sector that is independent of state support.



Figure 1: Okhotnik Drone

### **Confidence-building Measures**

As artificial intelligence continues to develop and be incorporated in the military, it is necessary for there to be new goals and ideas for confidence building measures (CBMs).

- Facilitate a dialogue between the engineers designing the systems and the military operators for a joint effort towards developing the safest technological solutions.
- Bridge the relationship between policymakers and engineers, for effective policies to be implemented
- Maintain extensive limitations in applying AI-enabled technology to the nuclear sphere
- Aim to make official documents that outline general strategies and policies on AI publicly available

As states continue to incorporate AI, four types of CBMs can be implemented to mitigate potentially escalatory effects of activities in cyberspace: collaboration, crisis management, restraint, and engagement activities.

States should also keep the military dimension from dominating the politics to prevent the emergence of a balance of forces that could be inherently unstable. States should be concerned about what might happen should a conflict begin, that they are unable to focus psychologically or politically on the possibilities of mitigating the underlying conflict itself.

# Conclusion

The development and adoption of AI calls for questions concerning attitudes, investments, and potential CBMs. Some of the results of this investigation include that there is an association between the level of concern about potential for bias in algorithms and support levels of AI implementation in various scenarios, including autonomous vehicles, autonomous surgery, and military force. The incentives for deploying AI technology onto the battlefield will likely outweigh ethical apprehensions in the future, as both money and political power are at stake when competing for dominance. Russia, for example, has been at the forefront of investing in the development of AI, not only in the technology industry, but also in the military. To reach the point of deployment, decisions made by autonomous weapon systems would need to be calculated to account for ethics such as shooting a child versus an adult, and the consideration of collateral damage. CBMs similar to those used in pursuing nonproliferation will help mitigate escalatory effects of unpredicted activities.

### References

- Atherton, K. (2019, December 13). Russia will test swarms for anti-robot combat in 2020. C4ISRNET.
- Axe, D. (2019, November 19). Why Russia's Stealth Okhotnik Drone Is a Big Deal. The National Interest.
- Bendett, S. (2020, January 23). Major trends in Russian military unmanned systems development for the next decade. Mad Scientist Laboratory.
- Bendett, S. (2019, November 25). Russia's AI quest is state-driven — Even more than China's. Can it work? Defense One.

Healey, J., Mallery, J. C., Jordan, K. T., & Youd, N. V. (2014). Confidence-building measures in cyberspace: A Multistakeholder approach for stability and security. Atlantic Council of the United States.

Hunter, R. E. (2010). Arms Control and Confidence-Building Measures. In Building security in the Persian Gulf. Rand Corporation.

Skitka, Linda (2011). "Automation Bias." Accessed May 31, 2019.