



'Special Outsider': Russia Joins the Race for Global Leadership in Artificial Intelligence

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OE Watch Commentary: On February 26, the industrial director of the Rostec State Corporation, Sergey Abramov, declared that work on the fourth generation of the Ratnik future infantry combat system is underway. The system is said to include, among other advanced elements, a soldier's exoskeleton as well as software link ups with micro-Unmanned Aerial Vehicles (UAV) and other systems utilizing artificial intelligence (AI). The authorities claim that such military-industrial contractors as JSC Kalashnikov, High Precision Systems and Techmash have become Russia's "locomotives," driving the development and production of AI systems. Abramov concluded that "our [Russian] weaponry has always been, currently is and will remain the best in the world—without any unnecessary meekness and illusions regarding our competitors".

Last year, the editor-in-chief of the military magazine *Arsenal Otechestva*, Victor Murakhovsky, provided a fascinating assessment of the new upgrades to the AI-supported Ratnik system. According to Murakhovsky, its strong points include:

- Increased maneuverability, which will play a particularly crucial role within the scope of para(military) operations carried out under challenging conditions such as "forests, mountains, the Arctic zone, and urban warfare." Specifically, the *Arsenal Otechestva* editor argues that the employment of exoskeletons "will increase the current maneuverability of a soldier by two or three times" and will allow the Russian Armed Forces to avoid the "predicaments they [Soviet forces] had to face in Afghanistan."
- Increased precision of firepower, which will be achieved through a wide range of optical sensors (such as thermographic cameras, laser designators, rangefinders and optic-location complexes) integrated into the new system.
- Increased level of protection, which, thanks to the exoskeleton, "will increase the level of protection by several times."

Murakhovsky, however, points to some notable problems that might not allow the Ratnik to be used to its full potential for at least some time. Namely, he mentions the issue of its internal battery, which can only work continuously for up to 2–3 hours without recharging. He stated that, to be truly effective, the system needs to be able to function for at least 24 hours (ideally, 48 hours, given the difficulties of accessing a power source in field conditions) without additional charging.

More recently, the Russian side has announced that work on PTM-5 "smart mines" equipped with AI will be launched sometime in 2019. These mines will reportedly be capable of distinguishing between civilians and military forces rather than automatically exploding in either case, which is meant to considerably decrease civilian casualties in conflict zones. At the same time, AI will enable the mines to "choose targets in an independent mode".

At the moment, however, it would be premature to share Abramov's optimism and rush into referring to Russia's reported achievements in the realm of AI as a "scientific breakthrough." Yet, two aspects nevertheless seem quite clear. First, artificial intelligence, which Russian President Vladimir Putin explicitly referred to as a "key for achieving global leadership" has entered Russia's "priority list." As a result, "scientific breakthroughs" (real or imagined) are bound to occur going forward. Second, the Russian military seems to have assumed the leading position in the country when it comes to developing AI (both for civilian and military needs). This stems from the growing role of the Military Innovative Technopolis ERA (MIT ERA) in the domestic defense-industrial sector. Constructed on the coast of the Black Sea (Anapa), and expected to be fully operating by 2020, the MIT ERA industrial park prioritizes eight main research fields for its resident firms:

1. IT systems, automated-control systems, and AI;
2. robotic systems;
3. computer science, computer technology;
4. technical vision, pattern recognition;
5. information security;
6. nanotechnology and nanomaterials;
7. energy, technologies and life-support machines; and
8. bioengineering, biosynthetic and biosensor technologies.

Another important detail pertaining to the MIT ERA is premised on two important relationships:

- A strong link between academia and the Armed Forces. The MIT ERA is to become a highly sophisticated combination of laboratories, engineering centers, and "open spaces" equipped with the most up-to-date equipment specifically designed for promising military scholars and members of academia.
- A strong link between theory and practice, meant to include all stages of the product generation cycle, from idea generation to practical limited-scale testing.

Yet, this optimism is not shared by all experts in the field. For instance, in a paper published last autumn by the Russian International Affairs Council (RIAC), Sergey Karelov (the founder of Witology and the head of the League of Independent IT Experts) argues that "all countries, with the exception of the [United States] and China, are outsiders in the rush for AI technologies... [E]ven such technologically developed states as France, Germany, India and South Korea, whose technological development is incomparable with countries of the third world, are looking into becoming AI-colonies." In contrast, Karelov's report pointedly names Russia a "special outsider," which has the potential to join the rush for global leadership as long as Russia's industrial base is able to combine "the principle of asymmetry with still-present intellectual traditions of the Soviet science." **End OE Watch Commentary (Sukhankin)**

Source: "Ростех ведет работу над экипировкой "Ратник" четвертого и последующих поколений (Rostec is carrying out work on equipping "Ratnik" of the fourth and future generations)," *TASS*, 25 February 2019. <https://tass.ru/armiya-i-opk/6157867>

... "Work on future generations of equipment is being carried out, we have enough scientific and technical background for this...", said Abramov... At present, TsNIITOKHMASH (a division of Rostec) has completed research work on Ratnik-3 and submitted its results to the Ministry of Defense in order to receive recommendations and an order to conduct design work...