



Russia's Development of Robotic Combat Vehicles

OE Watch Commentary: The accompanying excerpted articles from *RIA Novosti* discuss Russian plans to develop robotic platforms for military purposes. As Vitaliy Davydov, head of the Advanced Research Fund's Scientific-Technical Council (Russia's Defense Advanced Research Projects Agency equivalent) explains, the development of semi-autonomous and autonomous weapons platforms is of keen interest to the Russian Federation. As the second passage reports, Russia has already started conducting tests regarding the robotization of the armored equipment. The passage points out, "the T-14 tank mounted on the heavy tracked "Armata" platform has undergone testing in the unmanned mode." **End OE Watch Commentary (Bartles)**

“Neither we nor other countries will depart from the use of combat robots, if we do not wish people to continue to die on the field of battle. Living combatants will gradually begin to be supplanted by their robotic “brothers,” who can act more quickly, more precisely and selectively than people. However, a man will assign the mission and control the operations of the robots.”



T-14 Armata.

Source: Vitaly Kuzmin, <https://photos.smugmug.com/Military/Victory-Day-Rehearsal-in-Moscow-18-June-2020/i-Sz5RNDj/0/23d48c5e/X3/ParadeRehearsal-18062020-18-X3.jpg>, CC BY-NC-ND 4.0



Continued: Russia's Development of Robotic Combat Vehicles

Source: Dmitriy Strugovets, “Виталий Давыдов: живых бойцов заменят терминаторы (Vitaliy Davydov: They Will Replace Live Warriors with Terminators),” *RIA Novosti Online*, 21 April 2020. <https://ria.ru/20200421/1570298909.html>

The Advanced Research Fund (FPI) – the Russian analog of the American DARPA – works on various projects, including in the field of robotics. The anthropomorphic space robot “Fedor” was developed on an order from the fund, and in 2019 flew into space. In October 2019, the FPI presented to the public the experimental “Marker” robotic platform, supporting autonomous fulfillment of quite complex missions in support of troop subunit operations.

Formed on the base of the FPI, the National Center for the Development of Technologies and Base Components of Robotic Equipment is actively cooperating with the developers of maritime and aviation unmanned vehicles. Head of the FPI’s Scientific-Technical Council, and Deputy General Director of the Fund Vitaliy Davydov talked with RIA Novosti special correspondent Dmitriy Strugovets about the prospects for the development of military robotics in an interview.

In October, the “Marker” robot was presented to the public for the first time. At that time, it showed off its capabilities in autonomous navigation and repositioning. It was announced that in the first half of the year the robot will be able to demonstrate its capabilities in firing from various weapons. Based on the results of the tests, what will “Marker” be able to do?

In future, “Marker” will become fully autonomous and be able to independently fulfill a wide circle of tasks. The operator will provide only target designation, while the robot itself will decide how to move to the target taking into account the type of terrain, overcome obstacles met with en route and once in place select and use the optimal type of weaponry.

Will the robot itself make a decision on inflicting a strike?

Everything, naturally, must be under the control of a commander. This means several variants of “Marker” actions are being developed. One of them envisages the fulfillment of combat missions in autonomous mode in an area designated by the commander. A second variant is – supporting troop subunit operations. In this case the robot is delivered or itself proceeds into the area of combat operations and is placed at the disposal of a specific subunit, the commander of which assigns it specific combat missions.

That means the Fund is coming ever closer and closer to the future of the film, “Terminator:” initially there was the anthropomorphic robot “Fedor,” and now a wheeled combat robot.

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In Russia development of the heavy “Okhotnik” strike unmanned flying vehicle is being carried out, and also of strike and intelligence collection vehicles of other types, and the possibility of the development in future of a pilotless tank based on the “Armata” platform was announced. They all use software and technical solutions for the fulfillment of the missions, for example, in the area of artificial vision. Is the FPI, in completing the “Marker” and other projects, cooperating with Russian industry for the development of unified standards, so that the robotic equipment from various manufacturers can interact with each other on the field of battle?

For this, based on the Fund, the National Center for the Development of Technologies and Robotic Components, coordinating work in this field, was created. Today, at any hardware display one can be sure that the development of robotic equipment occupies hundreds of collectives from all over the country. They duplicate each other and often invent the bicycle. Our Center has the mission of assuring integration of their efforts, and providing interested developers with the opportunity to use the best scientific-technical and technological solutions, existing within the sphere under review. The “Marker” platform, which has an open architecture, providing each developer with the opportunity to practically test in it their own robotic components, will also have to play a specific role in the solution of these tasks.

The results of all of the projects, carried out in the field of robotic equipment at the expense of budgetary resources, is being provided to the National Center, stored in a unified database and through the Center collective access can be used by interested developers. This facilitates raising the level of domestic robotics, and enables the formation of unified standards and creates a technical basis for the effective interaction of robotic complexes from various manufacturers, including even at the software level.

Source: “Танк Т-14 ‘Армата’ испытали в беспилотном режиме (T-14 ‘Armata’ Tank Tested in Unmanned Mode),” *RIA Novosti Online*, 4 July 2020. <https://ria.ru/20200704/1573878330.html>

The T-14 tank mounted on the heavy tracked “Armata” platform has undergone testing in the unmanned mode, a source in the defense industrial complex informed RIA Novosti.

In 2016 Aleksandr Shevchenko, ex-chief of the Main Armored Tank Directorate of the Ministry of Defense, said in an interview with RIA Novosti that the unmanned, robotic version of the latest T-14 “Armata” tank will be created in 2018. In his words the uniqueness of the new vehicles was the presence of an open digital architecture, which created a “reinforced concrete foundation for the robotization of the armored equipment.”...