**A biweekly newsletter on AI and autonomy developments in Russia**

*CNA Russia Studies Program*

# HIGHLIGHTS OF ISSUE 31

- Government efforts to protect Russians against digital discrimination and other AI-enabled woes hit a snag as industry prefers the voluntary ethics code to regulations.

- Russia acquires more and more robots, incorporates drones in Kazakhstan, and conducts undersea demining operations.

- Skolkovo-associated companies see development of AI-enabled technologies in various fields.

- Government officials note that Russian economy will need 70 percent more specialists in the IT field in the next 8-10 years, a demand that may be challenging to meet, experts contend.

- Yandex announces partnership with the South Korean telecom carrier to launch autonomous delivery vehicles in South Korea before the end of 2022 aimed at providing customers with last-mile delivery services both indoors and outdoors.

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# GOVERNANCE AND LEGISLATION

## ATTITUDES MIXED ON REGULATION TO PROTECT RUSSIANS AGAINST AI TECHNOLOGIES

**In December, the upper house of Russia's Parliament sent recommendations to the Ministry of Digital Development, Communications and Mass Media and the Ministry of Economic Development about AI algorithms that have the capability to make decisions that discriminate against people.** As discussed in issue 30 of *AI in Russia*, the recommendations discussed potential prohibitions on such technologies, a process for notifying people that decisions were made by an algorithm, a mechanism for assessing their implications on welfare, and a roadmap for their regulation and employment. In December 2021, the Russian Human Rights Council (a consultative body to Russia's president) developed "The concept of ensuring the protection of the rights and freedoms of man and citizen in the digital space," which seeks to protect Russians against "digital discrimination, social rankings and dependence on the digital environment."

On January 21, *Kommersant* newspaper reports that industry has shown opposition to such regulation, arguing that it is premature. Reports quote a Big Data Association representative saying, "At this level of technology development, it is not necessary to say that the rights of people are endangered by the use of AI. It does not make decisions for a person, especially in important situations." Other unnamed "AI market participants noted" that significant regulation would only slow technological development, while the market will be able to self-regulate in accordance with the 2021 AI ethics code. (See issue 25 of *AI in Russia* for discussion of the ethics code.)

Separately, in January, the Human Rights Council also released a titled "Digital transformation and protection of the rights of citizens in the digital space," which contends that Russia could be developing a "cyber elite" or a "digital class." According to press reports, the Human Rights Council claims that this elite, which comprises IT-sector specialists, corporate managers, and officials, could "manipulate citizen personal data for personal or corporate gain." The council report shows particular concern that a growing number of government officials—"digital power"—which have small salaries but receive access to personal data, could be vulnerable to bribery. CNews quotes industry representatives familiar with the report who suggest that "the document makes it looks like a consolidation of power in the hands of 'bad IT personnel'" but also note that "the scale of influence of the state and business on citizens in the future will depend on improved regulation of the use of personal data."

Sources: "Citizens will be protected from robots" (Граждан защитят от роботов), *Kommersant,* Jan. 21, 2022, https://www.kommersant.ru/doc/51734573; "In Russia, a cyber elite capable of manipulating citizens" (В России возникает кибер-элита, манипулирующая гражданами), CNews, Jan. 11, 2022, https://www.cnews.ru/news/top/2022-01-11_v_rossii_mozhet_poyavitsya.

## RUSSIAN HEALTH MINISTRY OPPOSED TO EXPERIMENTAL LEGAL REGIME

**The Russian Ministry of Health is opposed to a three-year experimental legal regime proposed by the Ministry of Economic Development that would expand telehealth and the introduction of AI and other technologies into Russian medicine.** According to a January 14, 2022, report from the newspaper

*Kommersant*, the ministry is reportedly opposed to the regime because concerns about quality of care, particularly as part of telehealth. As discussed in past issues of *AI in Russia,* medicine is an important area for the development of digital technologies and has seen extensive growth, particularly during the COVID pandemic. The impact and finality of this opposition is not yet known, but, at worst, it may slow down technological development in this particular area.

Source: "Clarified diagnosis" (Уточненный диагноз), *Kommersant,* Jan. 14, 2022, https://www.kommersant.ru/doc/5158911.

# MILITARY AND SECURITY

## RUSSIAN MILITARY CONTINUES TESTING AND ACQUIRING MILITARY GROUND ROBOTS

**The Russian military continues the testing, evaluation, and acquisition of unmanned ground vehicles (UGVs), as it works on modernizing the force with new technologies.** In January 2022, Denis Gorsky, General Director of the 766th Directorate of Production and Technological Enterprise that manufactures military robotic systems, announced that a total of 19 UGVs—10 Uran-6 and 9 Uran-14 complexes, for demining and firefighting, respectively—were delivered to the Russian military in 2021. According to Gorsky, these UGVs are equipped with additional armor protection; their vision and control systems have been significantly improved; and other improvements have been made for better UGV functionality. Gorsky also stressed that the Russian military's experience gained while operating these UGVs in Syria and Nagorno-Karabakh informed the evolution and capabilities of the UGVs.

The MOD is also experimenting with other UGV platforms and their new capabilities. Over the past several years, Russia's DARPA-like organization—the Advanced Research Foundation (ARF)—has been overseeing work on the Marker UGV platform, which is a test bed for UGVs. Those experiments and research include manned-unmanned teaming, swarm UGV and UGV-UAV cooperation, speech recognition, and technical vision. Marker's tracked and wheeled versions underwent numerous tests and, in January 2022, ARF and Android Technologies (a Russian firm that built the UGV) announced that they had completed thier testing of the vehicle. One of the key capabilities that the company did test was autonomous group interaction, with vehicles sharing their transit and obstacle data with other UGVs.

Sources: "Engineering troops in 2021 received 19 robots from the Uran family" (Инженерные войска в 2021 году получили 19 роботов семейства "Уран"), Tass.ru, Jan. 20, 2022, https://tass.ru/armiya-i-opk/13477899; "Marker work completed in Russia" (В России завершили работы по проекту робота "Маркер"), Ria.ru, Jan. 10, 2022, https://ria.ru/20220111/marker-1767278502.html

## RUSSIAN MILITARY USES ORLAN-10 UAV IN KAZAKHSTAN

**According to an official MOD press release, Russian CSTO peacekeepers in Kazakhstan conducted round-the-clock monitoring using Orlan-10 unmanned aerial vehicles.** The MOD stated that the drones helped improve the situational awareness of mobile command posts. The Moscow-led CSTO mission deployed to Kazakhstan in January 2022 in response to widespread antigovernment protests. Over the past several years, the Russian military has incorporated different UAV types, such as the Orlan-10, as key components of its networked ISR and situational awareness assets.

Source: "Peacekeepers in Kazakhstan conduct UAV surveillance in four designated areas" (Миротворцы в Казахстане ведут наблюдение с БПЛА в четырех районах воздушной разведки), Tass.ru, Jan. 12, 2022, https://tass.ru/armiya-i-opk/13401943.

## RUSSIAN DEFENSE MANUFACTURING IS DEVELOPING DUAL-USE AMMUNITION FOR DRONES AND MANNED AIRCRAFT

**Russia's Tactical Missiles Corporation (KTRV) is developing ammunition that can be used from drones and manned aviation systems.** KRTV's CEO noted that this project is not yet officially financed by the MOD, with work carried out as a self-initiated project. At this point, developing drone ammunition is a priority of KTRV. As the Russian military drone fleet continues to expand, and larger, heavier drones are starting to enter military service, UAVs could potentially carry munitions designed for larger and heavier manned aircraft. At this point, KRTV is developing inertial guidance systems and homing warheads, with some success in small-sized ammunition. The company is hoping to develop 50 kg and 100 kg weapons. KTRV normal production includes advanced guided missiles and tactical guided missile systems for the country's armed forces.

Source: "KTRV CEO: unified ammunition for drones and front-line aviation is being created" (Глава КТРВ: создаются унифицированные боеприпасы для беспилотников и фронтовой авиации), Tass.ru, Jan. 24, 2022. https://tass.ru/armiya-i-opk/13504149.

## MINED SEA: UNDERWATER ROBOTS WILL APPEAR ON NAVY MINESWEEPERS

**The Russian Navy is buying 45 cable-operated underwater unmanned minesweepers.** The Merlin-350 weighs just over 110 pounds and can descend to a depth of 350 meters and in a temperature range down to -4 degrees Fahrenheit. The robot was tested this past year in a demining operation near Hogland Island in the Gulf of Finland, detonating approximately 20 World War II era mines. Despite an aged fleet, the Russian Navy is working to build additional mine vessels and both mining and demining feature prominently in some Russian naval operations.

Source: Alexey Ramm, Bogdan Stepovoy, "Mine sea: underwater robots will appear on the minesweepers of the Navy" (Минное море: на тральщиках ВМФ появятся подводные роботы), *Izvestia*, Jan. 14, 2022, https://iz.ru/1276787/aleksei-ramm-bogdan-stepovoi/minnoe-more-na-tralshchikakh-vmf-poiaviatsia-podvodnye-roboty.

# MARKETS AND PRIVATE SECTOR

## NEW DEVELOPMENTS FROM SKOLKOVO

**Scientists and entities associated with Skolkovo have been in the news regarding new AI developments.** One research group has developed an AI-based technique that allows for the considerable prolongation of active mineral and oil deposits. The program, which operates while companies are actively drilling, measures output data in real time and better assesses whether the drill is in a reservoir or a patch of waste rock. The researchers claim that the AI-assisted process could extend the life of old oil fields by up to 40 percent. Skolkovo is also partnering with Softline Digital and the Russian Association of Experts, in the

launch of a new internal platform for small and medium-sized retail chains called Retailix.Ai. The platform is designed to analyze sales data, automate control of shelf-stock, and integrate computer vision and voice services, among other desirable factors. Finally, Skolkovo has gained a new resident in Entera, a developer that runs a digital service which uploads and scans bureaucratic and tax documents to 1C, an accounting program. The software is popular with accountants in Russia, and the collaboration will allow Entera to gain from favorable tax benefits and infrastructural opportunities available through Skolkovo.

Sources: "How new technologies can extend the life of deposits" (Как новые технологии продлевают жизнь месторождений), *Rossiiskaya Gazeta,* Jan. 18, 2022, https://rg.ru/2022/01/18/novye-tehnologii-prodlevaiut-zhizn-mestorozhdenij.html; "Softline Digital, together with Skolkovo and the Russian Association of Experts, launches a platform for online retail" ("Softline Digital совместно со «Сколково» и Российской Ассоциацией экспертов запускает платформу для сетевого ритейла"), CNEws, Jan. 19, 2022, https://www.cnews.ru/news/line/2022-01-19_softline_digital_sovmestno_so_skolkovo; "Entera becomes a Skolkovo resident" ("Entera стала резидентом «Сколково»"), CNEws, Jan. 20, 2022, https://www.cnews.ru/news/line/2022-01-20_entera_stala_rezidentom_skolkovo.

## URAL WORKS OF CIVIL AVIATION WORKING ON NEW UAS

**The Ural Works of Civil Aviation (UWCA) company is reported to be working on new unmanned (and "optional-piloted") aircraft using newly developed manned, fixed-wing aircraft which will be retrofitted with unmanned systems.** UWCA is working on modifying new LMS-901 Baikal small personal planes and the new T-500 lightweight agricultural plane to run without pilots. These aircraft are light, can be operated from unpaved runways, and have a payload weight of up to 1.5 tons. Repurposing these aircraft for unmanned flight will allow for cheap cargo delivery and provide considerable cost efficiencies, according to reports. UWCA, which is based in Chelyabinsk, is one of the largest aviation companies in Russia. It has been increasingly working on UAV technology, especially for the Russian armed forces.

Sources: "Russia's UZGA Developing Unmanned and Optional-Piloted Aircraft," *UAS Vision,* Jan. 20, 2022, https://www.uasvision.com/2022/01/20/russias-uwca-developing-unmanned-and-optional-piloted-aircraft/; David Kaminski-Morrow, "Ural's new LMS901 utility aircraft becomes airborne during runway tests," *FlightGlobal,* Jan. 21, 2022, https://www.flightglobal.com/aerospace/urals-new-lms-901-utility-aircraft-becomes-airborne-during-runway-tests/147207.article; "Ural Works of Civil Aviation," http://www.uwca.ru/en/.

## NEW STAGE IN INNOVATION ASSISTANCE FUND COMPETITION BEGINS

**Applications for the new Innovation Assistance Fund are now open and regional companies are looking to gain capital support for their research and development in practical AI projects.** Now that applications for the new Innovation Assistance Fund are open, regional companies are trying to gain capital support for their research and development in practical AI projects. The Fund is the third stage of the "Development-AI" competition, which is funded through the "Digital Economy" national program. Regional news outlets are reporting on a variety of different efforts by companies to attract loans of up to 20 million rubles. The application period closes at the end of April. As previously discussed in *AI in Russia,* the Russian government has engaged in extensive support of the private sector through grants and competitions, with some mixed results to-date.

Sources: "Ivanovo companies can attract a grant for the development of projects in the field of artificial intelligence" (Ивановские компании могут привлечь грант на разработку проектов в сфере искусственного интеллекта), Glasnarod.ru, https://glasnarod.ru/novosti-regionov/ivanovskaya-oblast/ivanovskie-kompanii-mogut-privlech-grant-na-razrabotku-proektov-v-sfere-iskusstvennogo-intellekta/; "Innovation Assistance Fund" (Фонд содействия инновациям), https://fasie.ru/.

# HUMAN CAPITAL

## RUSSIA'S NEED FOR IT SPECIALISTS WILL INCREASE BY 70% IN 8-10 YEARS

**A January 13 Vesti article reports that Russian minister of labor Anton Kotyakov announced that in the next 8-10 years the Russian economy will increase its need for IT specialists by 70 percent.** However, filling this need may be challenging, as the number of young workers in Russia is declining. According to a separate *Izvestiya* article, Rosstat reports that the number of young workers in Russia decreased by half a million in 2021 and will decrease by 6 million over the next 10 years. The article cites the demographic crisis of the 1990s as the main factor in this trend. As reported in past issues of *AI in Russia*, Russia faces a shortage of qualified human capital in the IT sector, which the Russian government is attempting to address through education and training at all levels—from kindergarten to professionals already in the working world.

Sources: "Russia will need 70% more IT specialists" (России потребуется на 70% больше айтишников), Vesti, Jan. 13, 2022, https://www.vesti.ru/hitech/article/2663358; "Minus half a million: the number of young workers has decreased in Russia" (Минус полмиллиона: в России сократилось число молодых работников), *Izvestiya,* Jan. 17, 2022, https://iz.ru/1277209/mariia-frolova/minus-polmilliona-v-rossii-sokratilos-chislo-molodykh-rabotnikov.

## CHILDREN'S TECHNOPARKS EXPAND IN MOSCOW

**According to a January 14 TASS article, Moscow now has 21 children's technology parks, or "technoparks," which collectively house more than 111 laboratories dedicated to various fields in applied science and technology.** These technoparks, which are usually founded in collaboration with local universities, provide more than 400 different educational programs to schoolchildren, including various programs related to AI, computer engineering, and robotics. Three of the 21 technoparks opened in 2021, which allowed five new fields of study to be offered: smart technologies in transport, digital fashion, reverse engineering, resource saving and recycling, and ecology. The technoparks also host hands-on events, masterclasses, and lectures for children and their families. According to the article, the training offered by these technoparks led to more than 460 Moscow students winning national competitions in 2021.

Source: "More than 450 students of Moscow children's technoparks won national competitions in 2021" (Более 450 учеников детских технопарков Москвы победили в нацконкурсах в 2021 году), TASS, Jan. 14, 2022, https://tass.ru/ekonomika/13425445.

## AFK SISTEMA AND MOSCOW STATE TECHNICAL UNIVERSITY ANNOUNCE COOPERATION

**According to a January 20 CNews article, Moscow State Technical University has announced that it is partnering with the large Russian conglomerate corporation AFK Sistema.** The partnership will include a wide range of joint AI research in fields including agriculture, data storage and processing, industrial engineering, and biotechnical engineering. The article notes that another important area of joint activity will be the development of modern infrastructure, "including electric vehicles, satellite systems, smart grids, maritime transport management, the Internet of things (IoT), etc." The partnership will also have a training and education component designed to develop a pipeline of new human capital.

Source: "AFK "Sistema" and MSTU announced cooperation" (АФК «Система» и МГТУ объявили о сотрудничестве), CNews, Jan. 20, 2022, https://www.cnews.ru/news/line/2022-01-20_afk_sistema_i_mgtu_obyavili.

## APPLIED AI PROJECTS AT UNIVERSITIES

**At present, there are a number of reports about ongoing, high-profile AI projects at top universities.** The most notable are highlighted below.

- According to a January 17 TASS article, the Southern Federal University is developing an AI platform to improve the quality of education in Russian schools. The AI will assess individual students' competencies and level of motivation, and will design an educational program that best fits them. This is one of the 24 projects the Ministry of Education and Science funded in 2021, which collectively exceeded 1.5 billion rubles.

- According to a December 28 press release, Innopolis University scientists have designed an AI platform for managing marine robotic systems and underwater infrastructure devices. This was developed as part of a project with the Ministry of Industry and Trade of the Russian Federation.

- A January 19 TASS article reports that scientists at Baltic Federal University are developing a neural network system to aid surgeons during emergency surgeries. The AI will also assist the doctor in providing patients with a diagnosis and prognosis. The university's research is part of the federal program "Priority 2030."

- According to a January 11 Scientific Russia article, researchers at Crimean Federal University are developing a similar AI, using computer vision to assist urologists in diagnosis and surgery. The project was the winner of the grant competition "Start—Artificial Intelligence," organized by the Innovation Promotion Foundation.

Sources: "Минобрнауки выделило 1,5 млрд рублей на исследования в области искусственного интеллекта" (The Ministry of Education and Science allocated 1.5 billion rubles for research in the field of artificial intelligence), TASS, Jan. 17, 2022, https://tass.ru/obschestvo/13446679; "Innopolis University has developed a digital platform for managing marine robotic systems and underwater infrastructure devices" (В Университете Иннополис разработали цифровую платформу для управления морскими робототехническими комплексами и устройствами подводной инфраструктуры), Innopolis University, Dec. 28, 2021, https://media.innopolis.university/news/tsifrovaya-platforma-2021/; "Neural networks for emergency surgery are being developed at the Baltic Federal University" (В Балтийском федеральном университете разрабатывают нейронные сети для экстренной хирургии), TASS, Jan. 19, 2022, https://tass.ru/novosti-regionov/13466989; "KFU scientists are developing an artificial intelligence system for urologists" (Ученые КФУ разрабатывают систему искусственного интеллекта для урологов), Scientific Russia, Jan. 11, 2022, https://scientificrussia.ru/articles/ucenye-kfu-razrabatyvaut-sistemu-iskusstvennogo-intellekta-dla-urologov.

# INTERNATIONAL COLLABORATION

## YANDEX EXPANDS ITS SELF-DRIVING DELIVERY BUSINESS TO SOUTH KOREA

**Yandex has announced that its Self-Driving Group division has formed a partnership with the South Korean telecom carrier KT to launch autonomous delivery vehicles in Korea before the end of 2022.** The two companies are planning to integrate KT's artificial intelligence with Yandex's self-driving

technology. The partnership will allow Yandex to deploy its autonomous vehicles in East Asia for the first time. Its rovers are already operating in the United States and Russia, with a new pilot project expected to start in Dubai soon. The goal of the service is to use unmanned robots to provide Korean customers with last-mile delivery services both indoors and outdoors.

Korean regulations have so far prevented the use of autonomous robots for outdoor last-mile delivery. For example, an unmanned robot cannot cruise along pedestrian roads or crosswalks under the Road Traffic Act, while the Personal Information Protection Act bans the operation of robots that use cameras as sensors. A four-year exemption to these regulations, effective in parts of Seoul, has allowed KT to begin to work with potential partners for autonomous delivery and other AI-enabled projects. In addition to Yandex, it is also in negotiations with Hyundai Robotics and Bear Robotics for projects to serve customers in restaurants, deliver mail, and offer companionship to seniors.

At the same time, Yandex has lost a key Western investor: in January, the US-British fund Janus Henderson Group announced that it has sold its stake in the company. At the end of 2020, the fund owned 7.6 percent of Yandex shares. Other Western funds, including Hardling Loevner, Wellington Management, and Fidelity Investments, continue to hold Yandex shares. A majority of the voting shares in the company are held by its founder Arkady Volozh and a key senior employee Vladimir Ivanov.

Sources: "American-British fund said goodbye to Yandex, ridding itself from $1.2 billion dollar stocks of the internet company" (Американо-британский фонд попрощался с «Яндексом», избавившись от акций интернет-компании на $1,2 млрд), CNews, Jan. 19, 2022, https://www.cnews.ru/news/top/2022-01-19_amerikano-britanskij_fond; Son Ji-hyoung, "KT teams up with Russia's Yandex to debut delivery robots," *Korea Herald,* Jan. 18, 2022, http://www.koreaherald.com/view.php?ud=20220118000709; "Seoul will see the introduction of Yandex courier robots" (В Сеуле запустят роботов-курьеров "Яндекса"), TASS, Jan. 18, 2022, https://tass.ru/ekonomika/13452655.

## KROK INCORPORATED WINS ROSTELEKOM ROBOTIC PROCESS AUTOMATION TENDER

**Rostelekom's preliminary selection for its robotic process automation (RPA) tender has resulted in only one company passing the preliminary screening.** This company, Krok Incorporated, previously implemented an American RPA system at Rostelekom. The tender for a new system is part of an import substitution plan designed to reduce the company's reliance on foreign technology. Three companies submitted proposals, which were judged on the basis of company experience and the proposal's functional and technical characteristics. All three companies scored top marks on company experience. Krok's proposal received a total of 61 points. Two other companies, Konika Minolta and IBS Expertise, received 1 and 18 points, respectively. Because 44 points was considered the minimum passing grade, only Krok qualified. The final decision was expected to be made by the end of January 2022, though information about it had yet to appear in the press as of January 29. At the moment, Rostelekom uses the American UiPath RPA system, which it has deployed since 2018, with integration performed by Krok. It currently uses approximately 20 robots. The tender is meant to completely replace UiPath with a Russian-made system.

Source: "The right to incorporate Russian robots in Rostelekom is given to company that has already deployed a foreign analogue for the operator" (Право внедрить в «Ростелекоме» российских роботов получила компания, уже развернувшая у оператора зарубежный аналог), CNews, Jan. 11, 2022, https://www.cnews.ru/news/top/2022-01-11_pravo_vnedrit_v_rostelekome.

## ROBBOCLUB CONTINUES WORLDWIDE EXPANSION

**The continuing rapid expansion of Robbo's system of science education clubs around the world has resulted in the company reporting 30 percent growth in 2021.** Over the course of the last year, it has opened more than 30 new franchises, including expanding to three new countries: Bangladesh, Slovakia, and Turkmenistan. It has also opened a branch in China, in addition to its existing branches in Finland and Japan. Most of the new clubs are being organized online rather than in person. This has allowed the company to mitigate the risks and potential costs of closures caused by pandemic-related lockdowns. Also, the costs of launching an online franchise are 50 percent lower than those of launching offline clubs. Given the desire of people to interact in person, the company is expecting to shift some of these franchises to an in-person model over the next year. The company's products include a proprietary learning management system that uses online simulation to allow students to study robotics and work with virtual reality technology. See issue 30 of *AI in Russia* for past coverage of Robboclub.

Source: "Russian EdTech-supplier Robbo has grown by 30% in 2021" (Российский EdTech-поставщик «Роббо» вырос на 30% в 2021 году), CNews, Jan. 10, 2022, https://www.cnews.ru/news/line/2022-01-10_rossijskij_edtech-postavshchik.

## RUSSIA-BELARUS PARTNERSHIP EXTENDED TO IT EDUCATION

**The Agency for Strategic Initiatives (ASI) is partnering with Pskov State University to create a "boiling point" center to educate students from Russia and Belarus on how to create startups in the IT and social entrepreneurship field.** "Boiling point" centers are created on behalf of the ASI using the NTI Platform. In them, scientists, businessmen, civil servants, social activists, and students can share their experience, share the results of their work, and jointly work out new development models. The director of digital innovation at the university noted that the center fits one of the university's strategic goals—to improve Russia-Belarus strategic cooperation. Pskov University's partnership with the Moscow-based technological university MISiS in artificial intelligence and data analysis will work as the basis of one of the educational tracks at the center. In addition to students from both countries, the center will also be available as a co-working space for local entrepreneurs and specialists, as well as local organizations. The university plans to devote 60 percent of the center's time to education and 40 percent to local initiatives in which students can participate.

Source: "Pskov State University and ASI will open a Russian-Belarusian 'boiling point' in 2022" (ПсковГУ и АСИ в 2022 году откроют российско-белорусскую "Точку кипения"), TASS, Jan. 12, 2022, https://tass.ru/obshchestvo/13403905.

# SPOTLIGHT



Source: Sukhoi Design Bureau, "Su-57," accessed Feb. 4, 2022, https://www.sukhoi.org/products/samolety/410/.

## SU-57 MULTIROLE STEALTH FIGHTER

**The Su-57 is a new Russian fifth-generation multirole fighter incorporating advanced technologies including stealth, automation, and artificial intelligence.** The manufacturer, Sukhoi Design Bureau, claims that automation and artificial intelligence play vital roles in the aircraft, the pilot's performance, and the upkeep of the aircraft. The avionics of the S-57 feature an open architecture, enabling Sukhoi to mix and match and upgrade new technologies. Artificial intelligence and automation provide intelligent crew support, reducing the demands on the pilot. They also purportedly assist in engine capacity, fuel consumption, and overall power performance. Finally, the aircraft takes advantage of certain automated systems that monitor aircraft systems and help diagnose system failures.

Source: Sukhoi Design Bureau, Su-57, https://www.sukhoi.org/products/samolety/410/.

This report, the thirty-first in a series of biweekly updates, is part of an effort by CNA to provide timely, accurate, and relevant information and analysis of the field of civilian and military artificial intelligence (AI) in Russia and, in particular, how Russia is applying AI to its military capabilities. It relies on Russian-language open source material.

Approved February 2022:    Michael Kofman, Research Program Director
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