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Abstract

This report, the fourteenth 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.
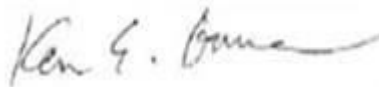
Approved by: **November 2020**

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Governance and Legal Developments

1. Prime minister: Russia to become global AI leader

Speaking by videoconference at the plenary session of the Open Innovations Forum on October 20, Russian prime minister Mikhail Mishustin said that Russia plans to become a world leader in the AI field. "Artificial intelligence is the most promising area today," he said. "And Russia plans to take a leading position with it."

Mishustin noted that developments in the field of end-to-end digital technologies allow for new ways of organizing production processes, financial services, and logistics. He also spoke about the measures undertaken in Russia to create the conditions for the emergence and development of Russian and foreign IT companies in the country, including the fact that, starting in 2021, the income tax for such businesses will be reduced to just 3 percent and the insurance premium rates will be reduced to 7.6 percent. "In general, we will continue to create favorable conditions for doing business in our country," Mishustin stated. "Despite the difficult situation in both our country and the world, we will continue on this course."

Source: "Mishustin: Russia plans to become the world leader in artificial intelligence" [Мишустин: Россия планирует выйти в мировые лидеры в области искусственного интеллекта], TASS, Oct. 20, 2020, https://tass.ru/ekonomika/9765107.

2. Official overseeing AI effort to depart government

On October 20, it became known that Deputy Minister Oksana Tarasenko, who oversaw key aspects of the government's AI federal project (see translation in the In Brief section of this issue) is leaving the Ministry of Economic Development. Reasons for her departure are unknown. Tarasenko took up her post in December 2019, after which Russian president Vladimir Putin instructed the government to prepare the National Strategy for Artificial Intelligence. Work then began on the creation of the federal project on artificial intelligence, which is included as part of the "Digital Economy" national program. Although the executive agencies disagreed on whether there should even be a separate federal project on artificial intelligence, or whether it should be developed under the digital technologies federal project

framework, Putin ultimately instructed the government to create a separate AI federal project. At that time, the governmental presidium on digital development approved the AI federal project and Tarasenko became the project's curator. As discussed in past issues of *AI in Russia,* the final cost of the program was significantly lower than original estimates: it amounted to 36.3 billion rubles through 2024. Of that, 29.4 billion rubles will come from the federal budget and 6.9 billion will derive from extra-budgetary sources.

Source: "The curator of artificial intelligence is leaving the government" [Из Правительства уходит куратор искусственного интеллекта], CNews, Oct. 20, 2020, https://www.cnews.ru/news/top/2020-10-20_iz_pravitelstva_uhodit.

3. Government continues AI implementation

On October 3, the Russian government held its second strategic session on artificial intelligence for the digital transformation leaders of 62 Russian federal executive agencies. Maksut Shadayev, the minister of digital development, communications, and mass media, attended the session, as well as representatives of the largest Russian manufacturers of electronic products and companies specializing in the implementation of AI solutions. During the session, organized with the support of Sberbank, the national center of competence in the field of AI, the digital transformation leaders were trained in the possibilities for using AI technologies.

The digital transformation heads of several agencies also presented projects on the introduction of AI in their departments. The projects were pre-selected for presentation, and included a project by the Ministry of Emergency Situations to identify thermal anomalies, predict water levels and identify infrastructure damage from images, and a project by the Ministry of Health to create a personal intelligent digital medical concierge service.

According to Deputy Prime Minister Dmitry Chernyshenko, "The projects announced today will be included in the departmental digital transformation programs and will receive clear indicators for measuring efficiency. In the government, we will create the conditions for the maximum penetration of modern technologies into the activities of all departments and priority sectors, as well as the social sphere."

Source: "Federal executive agencies presented Dmitry Chernyshenko with artificial intelligence projects" [Дмитрию Чернышенко представили проекты по использованию искусственного интеллекта в федеральных органах исполнительной власти], Russian Government website, Oct. 3, 2020, http://government.ru/news/40542/.

4. Website developed for Digital Economy grant seekers

On October 23, it was announced that representatives of several Russian development institutions—including the Skolkovo Foundation, the Russian Fund for the Development of Internet Technologies and the Fund for the Promotion of Innovation, and the "Digital Economy" organization—are launching a website resource aimed at supporting the development and implementation of digital technologies. The site will contain information on the government's priorities and include a questionnaire for digital developers that will help them find out which fund provides support in each priority area and where to apply for such funding.

The announcement also stated that this year over 7 billion rubles have been allocated in grant support as part of the "Digital Technologies" federal project of the "Digital Economy" national program. Maxim Parshin, the deputy minister of digital development, communications, and mass media, noted that these programs are designed in such a way that varied projects can receive grant funding, so long as they correspond to the priority areas of support. According to Parshin, "We offer up to 20 million for startups and up to 300 for large initiatives aimed at digitalizing projects. At the same time, both IT product developers and companies implementing digital solutions can receive grants."

Source: "Russia launched a resource to support the development and implementation of digital technologies" [В России запустили ресурс по поддержке разработки и внедрения цифровых технологий], The Future of Russia TASS portal, Oct. 23, 2020, https://futurerussia.gov.ru/nacionalnye-proekty/v-rossii-zapustili-resurs-po-podderzke-razrabotki-i-vnedrenia-cifrovyh-tehnologij.

Military and Security Developments

5. Project 22160 vessel completes Arctic trip

The Project 22160 patrol corvette *Vasily Bykov* has completed a voyage in the Arctic, where it tested weapons and life support systems. According to the Russian Navy, this corvette proved suitable for the harsh Arctic conditions, and could be sent to the northern maritime areas to counter enemy submarines.

Project 22160 ships are called "robotic" vessels in the Russian Navy, because their weapon control systems, power plant, and onboard mechanisms are digitized and automated, making it possible to significantly reduce the crew complement. Project 22160 carries hydroacoustic stations and other equipment that are housed in 40-foot shipping containers installed on the ship. The Russian Navy designed this ship to be modular and capable of performing multiple missions, via quick change-out and installation of needed components. The Russian Navy also designed the ship for protecting sea crossings and naval bases.

This modular approach to Project 22160 components is in line with the Russian MOD's general thinking about future weapons systems that stresses compatibility with different requirements and capable of "transforming" based on a specific mission set. The MOD has pushed for increased autonomy across many of its platforms, including an increase in the automation of crewed systems. At the same time, as the Russian military continues to ramp up its Arctic presence, the availability of vessels such as *Bykov* that can operate with reduced crew complements via greater automation will strengthen MOD's Arctic activities.

Source: "'Bykov's hour: a "robotic" ship has successfully completed an Arctic voyage" [Час «Быкова»: корабль-робот успешно завершил арктический поход], Iz.ru, Oct. 27, 2020, https://iz.ru/1078799/roman-kretcul-aleksei-ramm/chas-bykova-korabl-robot-uspeshno-zavershil-arkticheskii-pokhod.

6. Moscow tests river search-and-rescue system

Russia recently tested the AquaHranitel (Savior) system at Moscow's Borisovskiye Ponds, a favorite vacation spot for Muscovites wanting to escape the city heat and bustle. The system is specifically designed to reduce the response time to water emergencies to just two to three minutes, and thereby increase the number of people rescued.

Statistically, around 10,000 people drown every year across Russia, and numerous reservoirs need professional equipment to monitor the areas frequented by swimmers. The "AquaHranitel" camera-based system with thermal imagers, developed by the Pskov-based "Formosa-Service" company, is designed for round-the-clock detection of threats—such as people swimming in prohibited areas, falling from bridges or embankments, or going out on weak ice—as well as the passage of ships near swimming areas. According to the developers, the system is built using optical automated recognition of security threats.

The "Hranitel" system consists of several interconnected blocks that perform separate functions. In order to detect an emergency and determine its coordinates, a monitoring unit is used to analyze the threat; it consists of an internet video conferencing and instant messaging unit. Video analytics servers connect to the relayed stream and detect potentially dangerous events in real time. This information is instantly transmitted to system users and stored in the archive. Neither the camera nor the system operator, who may be far away from the monitored object, recognize the threats; this is done by the server with specific software settings modified to local conditions, peculiarities, climate and season requirements, and rescue service regulation. Formosa-Service designed the system so that the operator can set the operating mode and determine the algorithm for determining specific risks in a given maritime area.

Source: "Rescuers will arrive on time" [Спасатели приедут вовремя], RG.ru], Oct. 19, 2020, https://rg.ru/2020/10/19/reg-cfo/v-stolice-protestirovali-sistemu-monitoringa-chs-na-vode.html.

7. ERA Technopolis develops new AI R&D tool

Note that the following article is from RT, a source not generally considered reliable. However, we thought the piece was relevant enough to include in the newsletter. Additionally, it is unclear from the article whether the system is aspirational, in a nascent stage, or in testing.

ERA Technolopolis—Russia's military high-tech research organization—has developed a hardware and software package (PAC) for research and development of AI technologies. According to Yevgeny Nazarov, ERA's deputy head of the research department, the PAC can be used to identify targets on the battlefield. At present, its data bank includes 100,000 images of objects in the optical range, and 5,000 targets in the radar range. The PAC's use will maximize the reconnaissance and strike systems' automation processes. ERA considers PAC a "learning system," because the AI integration will allow it to constantly improve its capabilities.

According to Russian military experts, PAC complexes can be installed on drones, airplanes, helicopters, and ships, as well as on ground vehicles and equipment. The main PAC elements are the Monolit long-term data storage device, the Elbrus and Iva domestic microprocessors, and a platform for training and testing deep neural networks. During military operations, the

complex allows for tracking the enemy troops and their equipment, including when they use a variety of camouflage methods. The PAC can also be used in bad weather and nighttime conditions.

The PAC can also be used in a civilian market, such as for search-and-rescue operations and during natural disasters. In addition to ERA, the project involved MOD's Department of Information Systems, MOD's Main Directorate of Research Activities, the State Research Institute of Aviation Systems, JSC Concern Vega (Moscow), GC Hi-Tech (Moscow), and a number of other enterprises.

Presently, ERA is forming a machine learning center for the full implementation of this project. The center will work on the development, training, and testing of neural networks on military equipment's virtual counterparts or physical mock-ups. The R&D efforts will include the formation of a database and the development of complex AI modules for promising military platforms.

Today, some Russian weapon systems already have built-in automatic target tracking, yet they work according to slightly different algorithms. Such PACs are used across the MOD to construct electronic terrain maps based on aerial and space imagery, which makes it possible to increase the efficiency and efficiency of forces' command and control. The PACs are necessary for conducting hydrographic research, building intelligent self-adjusting communication centers, training pilots, protecting against computer attacks in real time, digitally processing signals and images (including using neural network applications), and repairing military equipment. In the realm of defense, hardware and software systems are in demand in the aviation industry, where they are used for computer-aided design and simulation of aircraft power plants, for semi-natural testing of onboard equipment and its after-sales service, and for the collection, processing, and analysis of large amounts of information.

The ERA project needs deep learning networks and a large amount of initial data. In order to form such a data bank, it is necessary to obtain radar, optical, and infrared images of different objects. According to the Russian military experts, if ERA specialists are able to transmit all the information accumulated about targets onto neural networks, it will be a great achievement for the domestic defense industry that can be applied across different systems. By developing algorithms in training neural networks, new weapons systems will simply be added to the database—and, as a result, the speed of data processing in the Russian Army could increase significantly.

Source: "Deep learning networks: How important hardware and software systems are for the Russian army" [«Сети с глубинным обучением»: какое значение для российской армии имеют программно-аппаратные комплексы], Russian.RT.com, Oct. 13, 2020, https://russian.rt.com/russia/article/791747-programmno-apparatnyi-kompleks-armiya-era.

Corporate and Market Developments

8. VisionLabs expands international partnerships

In recent months, the Russian AI company VisionLabs has formed several international partnerships with a range of prominent companies. It has become the vendor for a biometric identification service for the Kazakhstan National Bank, through which it is distributed to all financial institutions in Kazakhstan. The system uses facial recognition and other biometric information to allow users to conduct a wide variety of financial transactions. It works through the LUNA computer vision and video analysis platform. The system is analogous to a system that VisionLabs has provided for Russian financial institutions through Rostelekom, except that the Russian version is voluntary while the Kazakhstani version has access to a state database of citizen photos. According to the company, this will allow for a much more rapid expansion of the service and a wider array of services offered than has been the case in Russia. Income for the provider is generated through a commission model.

VisionLabs has also recently formed a partnership with the Chinese multinational company Huawei. Through this partnership, VisionLabs' expertise in computer vision will be used in the Huawei Atlas series of products for machine learning. As a first step, VisionLabs has added support for Atlas 800 to its existing Luna SDK software. Luna SDK is a cross-platform set of development tools with the functionality of recognizing and analyzing faces and other objects in 2D images using neural networks. The product was recently recognized in a US NIST competition as one of the fastest and most accurate of such products.

VisionLabs was founded in 2012 by Alexander Khanin, Ivan Laptev, and Alexey Nekhaev. Its main product is facial recognition algorithms. In 2016 it received 350 million rubles in funding from Sistema Venture Capital, which received a 25 percent ownership stake in exchange. In 2017, another 25 percent stake was purchased by Sberbank.

Sources: "VisionLabs implemented biometric system for Kazakhstan banks" [VisionLabs внедрила биометрическую систему для банков Казахстана], Oct. 12, 2020, Vedomosti, https://www.vedomosti.ru/technology/articles/2020/10/12/843018-visionlabs-biometricheskuyu; "VisionLabs and Huawei announce strategic partnership in computer vision" [VisionLabs и Huawei объявили о стратегическом партнерстве в области компьютерного зрения], Oct. 19, 2020, https://www.cnews.ru/news/line/2020-10-19_visionlabs_i_huawei_obyavili_o_strategicheskom.

9. Huawei marches across Russian AI sector

In addition to the partnership with VisionLabs discussed above, Huawei has recently formed other partnerships with Russian AI companies. As part of its recent Digital Community Conference 2020, it announced the IdeaHub product, which is designed to establish an intellectual community for those using digital tools for cooperative work. The idea is to provide a single unified platform that can be deployed in the cloud or on site, and provides three types of endpoints: smart video conferencing (VC) devices, interactive whiteboards, and a family of smart desktops for the mobile personal office. According to a Huawei spokesman, "IdeaHub is a simple and reliable meeting room solution that fits perfectly into any use case: for open creative teams it provides easy, transparent, seamless collaboration, for home offices it makes online work as easy as possible, and for leadership it provides a digital meeting room with a minimalist design that differs significantly from traditional interactive whiteboards."

Huawei has also recently offered a Smart City product that can significantly improve transport infrastructure in large cities and is offering ways to increase the efficiency of passenger transport in Russia through digitization.

The Smart City concept, which Huawei is implementing around the world, sees the city as a kind of human body. Its "eyes" are a video surveillance system; its "limbs" are executive bodies and city services; and its "blood arteries and vessels" are roads and the transport system as a whole. Municipal authorities and situational centers act as the "brain," and data processing centers are responsible for the "memory." The company has implemented this concept in the Chinese cities of Shanghai and Guangzhou. Aspects of the concept have been implemented in St. Petersburg, in order to increase transportation safety, including tracking violations of road safety rules such as vehicles crossing the median or running red lights. Recognition accuracy is more than 95 percent, and the system can detect accidents within eight seconds in any weather, as well as in low and bright light conditions. The system can also work to control traffic flow to minimize traffic jams.

Huawei and CDNVideo have signed a memorandum of cooperation. As a result of the agreement, CDNVideo will use Huawei's KunPeng virtual machines for its cloud servers. The two companies have investigated possibilities for working together to provide new services for users, including serverless computing, managed databases, and cloud storage. The ultimate goal is to create a combined ecosystem of products and services.

Finally, Huawei's president for digital marketing participated in an online forum jointly organized by the Kommersant publishing house and Huawei, entitled "The Digital State after COVID-19." At this forum, he spoke about the role of AI infrastructure in rebuilding economies after the pandemic. He also talked about the impact of the pandemic on increasing the speed of transition to digital formats in many spheres, and about the Digital China project and the

role of 5G technologies as a driver of economic growth in South Korea. In discussing Russia, he highlighted the steps that the Russian government has undertaken to shift to a digital economy. He recommended that Russia focus on developing 4G and 5G infrastructure and networks for the Internet of Things, as well as increasing investment in artificial intelligence and cloud computing. He said that Russia should focus on three issues: introducing digital technology to key economic areas such as petrochemical and mineral extraction; increasing state support for 5G, AI, and cloud computing; and strengthening education in digital technology. He noted Huawei's willingness to work with Russian partners to support Russia's development in all of these areas, stating that the company will increase its investments in Russia in the digital sphere. In terms of specifics, he noted that this year Huawei is planning to establish the Ascend + KunPeng Laboratory, which will help its partners adapt to the digital environment and learn new technologies.

Other participants at the forum included the Russian deputy minister for digital development and mass communications, the president of the Chinese Center for Globalization, and the Russian deputy director of the digital development department of Russia's health ministry.

Sources: "Huawei IdeaHub introduction" [Представление Huawei IdeaHub], Oct. 26, 2020, https://www.tadviser.ru; "Huawei shared experience of building intellectual ICT-infrastucture in the municipal transport shere" [Huawei поделилась опытом построения интеллектуальной ИКТ-инфраструктуры в сфере городского общественного транспорта], Oct. 20, 2020, CNews, https://www.cnews.ru/news/line/2020-10-20_huawei_podelilas_opytom_postroeniya; "Huawei and CDNvdeo signed MOU in developing services on the basis of AI, IoT, and big data" [Huawei и CDNvideo подписали меморандум о сотрудничестве для развития сервисов на базе ИИ, IoT и больших данных], Kommersant, Oct. 15, 2020, https://www.kommersant.ru/doc/4531348; "In Russia, we will create digital solutions for all scenarios" [В России мы создадим отраслевые цифровые решения для всех сценариев], Kommersant, Oct. 1, 2020, https://www.kommersant.ru/doc/4512503.

10. Skolkovo affiliates announce new partnerships

Multiple entities affiliated with the Skolkovo Foundation's research clusters have recently signed agreements and undertaken join partnership activities with both domestic and foreign partners.

On October 20, the investment and analysis firm Skolkovo Ventures signed a cooperation agreement with VTB Bank regarding strategy development for new digital projects. The agreement focuses on seeking joint cooperation on solving management problems for "big data" projects, as well as entering further into the cybersecurity market. Skolkovo Ventures brings long experience in technology investment partnerships within the context of the

Skolkovo Foundation, while VTB seeks to find new investment assets in "big data" and cybersecurity.

The company "Insilico," a member of the Skolkovo Foundation's biomedical technologies cluster, has agreed to work on anti-aging pharmaceuticals with the Japanese company Taisho. They hope to develop a suite of therapeutic drugs to combat the effects of aging with the aid of Insilico's new "Pandomics Discovery Platform"—an AI platform designed to search for senolytic substances, which are thought to hinder the aging process. Taisho will provide its own validation technical capabilities to confirm discoveries identified by the PDP platform.

Nine Russian companies that focus on AI research, five of which are based within the Skolkovo fund's research clusters, presented projects in Switzerland over videoconference. The presentations were organized with the support of the Embassy of Switzerland in Moscow as well as the Swiss Business Hub Russia, a state entity that promotes Swiss exports and partnerships with Swiss companies. The nine Russian companies are participants in the "Global Challenge—Artificial Intelligence for Sustainable Development Goals" initiative organized by Skolkovo. Major Swiss and European companies observed the presentations, including representatives from Allianz Suisse, Sulzer, Oelikon, IBM Research, and KPMG. The "business mission" also included meetings between the Swiss ambassador to the Russian Federation, Yves Rossier; the chairman of the Skolkovo Foundation, Arkady Dvorkovich; and the deputy director of the Telecommunication Standardization Bureau, Reinhard Schoel.

Sources: "Skolkovo resident and Japanese Taisho will develop anti-aging drugs" [Резидент 'Сколково' и японская Taisho будут разрабатывать лекарства против старения], TASS, Oct. 26, 2020, https://nauka.tass.ru/nauka/9815621; "Skolkovo residents present their projects in the AI sphere in Switzerland" [Резиденты "Сколково" представят свои проекты в сфере искусственного интеллекта в Швейцарии], TASS, Oct. 26, 2020, https://tass.ru/ekonomika/9820585; "VTB and Skolkovo Ventures agreed on partnership" [ВТБ и Skolkovo Ventures договорились о партнерстве], CNews, Oct. 20, 2020, https://www.cnews.ru/news/line/2020-10-20_vtb_i_skolkovo_ventures_dogovorilis.

Education and Training Developments

11. Digital Breakthrough semifinals conclude

According to an October 20 article, the semifinals of the Digital Breakthrough competition are being held in the largest IT hubs of Russia's eight federal districts. The Central Federal District concluded its semifinal round this month, where 164 teams of specialists developed products related to urban development, business, and society. Participants had 48 hours and worked remotely, using big data, AI, blockchain, CRM, EdTech, and mobile and web development tools to complete their products. The teams that developed the 30 best products shared a prize of 3 million rubles and will advance to the finals of the competition, which will be held in November. The top products include an application that allows physically disabled people to find accessible navigation routes through the city, and a tool that can help identify the foci of epidemic outbreaks using big data. Partners of this section of the competition include Sberbank, Rosatom, Rosetti, Gazprombank, Russian Post, and Rostelecom.

The Digital Breakthrough competition has been covered in issues 9 and 11 of *AI in Russia*. The competition is open to any adult citizen of the Russian Federation.

Source: "The semi-final of the Digital Breakthrough in the Central Federal District resulted in 100 IT solutions in the field of big data, AI and education" [Итогом полуфинала «Цифрового прорыва» в ЦФО стали 100 IT-решений в сфере больших данных, ИИ и образования], D-Russia, Oct. 20, 2020, https://d-russia.ru/itogom-polufinala-cifrovogo-proryva-v-cfo-stali-100-it-reshenij-v-sfere-bolshih-dannyh-ii-i-obrazovanija.html.

12. Sirius University hosts cybersecurity training program

According to an October 26 article, Sochi's Sirius University of Science and Technology hosted a two-week cybersecurity training program for 49 winners of the "Cyber Challenge: New Level" competition. The training program was focused on financial sector cybersecurity and was co-sponsored by Rostelecom, its subsidiary Rostelecom-solar, and the Bank of Russia. Participants studied the structure of Russian banking and financial systems, the types of cyberattacks commonly launched against them, and trends in IT security. The final section of the training program consisted of cyber exercises hosted in the Fisht Olympic Stadium, where students had

to regain access of malware-infected ATMs and reverse the encryption process. Initiatives at Sirius University were covered in issue 6 of *AI in Russia*.

Source: "Sirius students repel cyberattacks on Fisht Olympic stadium" [Студенты «Сириуса» отразили кибератаки на олимпийский стадион «Фишт»], Info-RM, Oct. 26, 2020, https://info-rm.com/2020/10/26/studenty-siriusa-otrazili-kiberataki-na-olimpiyskiy-stadion-fisht/.

13. RAS and Moscow Institute of Electronic Technology sign joint agreement

According to an article in *Scientific Russia* on October 20, the Department of Nanotechnology and Information Technologies of the Russian Academy of Sciences (ONIT RAS) and the National Research University's "Moscow Institute of Electronic Technology" (NRU MIET) signed an agreement to conduct joint research in the fields of nanotechnology and IT, identifying key priority areas. Those areas include the following: (1) an elementary base of micro- and nanoelectronics and quantum computers; (2) scientific foundations of information and computing systems, including quantum methods of information processing; (3) architecture, system solutions, software, standardization, and information security of information-computing complexes and networks of new generations; and (4) cognitive systems and technologies, neuroinformatics and bioinformatics, systems analysis, artificial intelligence, pattern recognition systems, and decision-making systems. The agreement also outlines joint postgraduate training initiatives combining the expertise from both institutions, as well as the creation of joint laboratories.

Source: "ONIT RAS and NRU MIET signed a cooperation agreement" [ОНИТ РАН и НИУ МИЭТ заключили Соглашение о сотрудничестве], *Scientific Russia,* Oct. 20, 2020, scientificrussia.ru/news/onit-ran-i-miet-podpisali-soglashenie-o-sotrudnichestve.

14. Russian AI researchers form partnership with Samsung

As discussed in past issues of *AI in Russia,* Samsung has developed the "Samsung IT Academy," which is teaching one-year courses in artificial intelligence, the Internet of Things, and mobile app development at universities throughout Russia. A press release from Samsung indicates that the academy is now also in Kazakhstan. The academy is functioning in a total of 34

universities, and enrolled over 1,000 students this year. The courses conclude with independent final projects that, in the AI track, include the development of a neural net.

Source: "IT Academy of Samsung begins new year in Russia and Kazakhstan" [Проект «IT Академия Samsung» начинает новый учебный год в России и Казахстане], Samsung, Oct. 21, 2020, https://news.samsung.com/kz_ru/project-it-akademiya-samsung-nachinaet-novyi-uchebnyi-god-v-rossii-i-kazakhstane.

Spotlight: Altius UAV

The new Russian "Altius" HALE unmanned aerial vehicle, in development since 2011, purportedly includes AI-related technologies enabling some level of autonomy in conducting operations.

In 2019, the UZGA Enterprise presented a modified version of this drone, which received a satellite communication system. With the use of such a system, the Altius flight range would be limited only by the fuel supply on board. Such a system allows this drone to conduct reconnaissance and attack targets at a distance of hundreds or thousands of kilometers from its base. The Altius can stay in the air between 24 and 48 hours, and its maximum range could be up to 10,000 kilometers, with the drone conducting reconnaissance from a height of 12,000 meters. At the end of 2019, the Ministry of Defense signed an agreement with UZGA to create an improved Altius version, which was given the designation "Altius-RU" (reconnaissance and strike). This version should become the main serial deployment lineup for deliveries to the Russian Aerospace Forces and the Russian Navy.

The Altius will be equipped with the SP-2 inertial navigation system, providing the UAV with additional resistance to induced interference and the ability to operate in conditions of adversary electronic countermeasures. The Altius can lift up to one ton of bombs and missiles. It is assumed that the drone will be able to carry "Grom-2" bombs with a total mass of 598 kg (mass of a warhead, 480 kg) and a launch range of 10-50 km, or "Grom-1" guided missiles with a mass of 594 kg (mass of a warhead, 315 kg) with a launch range of up to 120 km. During the June 2020 visit by Deputy Defense Minister for Armaments Alexei Krivoruchko to the UZGA facility, photos of the updated Altius model were released for the first time. It was then confirmed that the drone will be able not only to conduct reconnaissance missions but also to strike at the enemy's ground targets.

This drone will be equipped with artificial intelligence elements, and will also be able to interact with manned aircraft in a MUM-T configuration. The MOD envisions this drone operating autonomously without the participation of an operator, as well as independently interacting with the Su-57 Russian fifth-generation fighter. The drone is supposed to independently plot a route to a target or a given patrol area without the help of a human operator, bypassing adversary air defenses, as well as detecting and attacking important ground targets such as missile launchers, communication centers, and enemy command and control centers.

As envisioned, once it receives targeting coordinates, the Altius will be able to compose an algorithm for finding the optimal route to the target and to calculate the most suitable point for dropping bombs. The drone will be able to do all this without the help of an operator, as the

UCAV receives needed information about the enemy air defense facilities in real time, in order to build out its flight path. Having completed its combat mission, the Altius should be able to return to the base automatically along the safest flight route, or return to the patrol mode and continue to conduct reconnaissance tasks. It is worth noting that operators, working at all stages of UAV flight, currently control Russian military drones during operations.

In September 2019, the Russian Ministry of Defense demonstrated the MUM-T flight for first time, when the Su-57 piloted fighter and the 20-ton S-70 Okhotnik attack drone flew together. The Altius drone will also be equipped with the same ability to interact with a manned aircraft. Russian military community notes that the pilot will be able to find targets and transmit their coordinates to the UAV through a secure communication line. After receiving information from the pilot, the drone should be able to start performing the combat mission in an independent mode without further participation from the pilot or ground operators.

Sources: "Drone operators: training of drone crews has begun" [Люди для дронов: началась подготовка экипажей ударных беспилотников], Iz.ru, July 7, 2020, https://iz.ru/1032187/anton-lavrov-roman-kretcul/liudi-dlia-dronov-nachalas-podgotovka-ekipazhei-udarnykh-bespilotnikov; "Russian drone "Altius" first seen with ammunition" [Российский беспилотник «Альтиус» впервые засветился вместе с боеприпасами], Mk.ru, June 21, 2020, https://www.mk.ru/politics/2020/06/21/rossiyskiy-bespilotnik-altius-vpervye-zasvetilsya-vmeste-s-boepripasami.html; "Altius Heavy Russian drone with artificial intelligence" [«Альтиус». Тяжёлый российский беспилотник с искусственным интеллектом], TopWar.ru, Mar. 27, 2020, https://topwar.ru/169438-altius-tjazhelyj-rossijskij-bespilotnik-s-iskusstvennym-intellektom.html.

In Brief: AI Federal Project

As discussed in issue 11 of *AI in Russia*, in August the Russian government adopted the AI federal project as part of the national program Digital Economy. This section provides a translation of the explanatory note to the federal project and sections 1 (basic provisions) and 2 (goals and indicators) of the summary (so-called "passport") of the federal project.

Explanatory memo

> To the issue of considering a proposal to initiate a new federal project of the national program "Digital Economy of the Russian Federation" No. D7-2020 / 001

> Pursuant to the Decree of the President of the Russian Federation dated October 10, 2019 No. 490 (subparagraphs "a" and "c" of item 2), orders of the President of the Russian Federation dated June 12, 2019 No. Pr-1030 (subparagraphs "c" of item 2) and No. Pr-1068 (item 2) dated July 3, 2020, , as well as in accordance with the instructions of the Government of the Russian Federation dated November 5, 2019 No. MA-P10-9594 (items 1.1 and 1.3), dated July 8, 2020, No. DCh-P10-7365 (item 6) The Ministry of Economic Development of Russia has developed a summary for the federal project "Artificial Intelligence" of the National Program "Digital Economy of the Russian Federation" (hereinafter referred to as the federal project) together with interested federal executive bodies and the competence center of the federal project and a letter dated August 18, 2020 No. 26760-OT/D01 and sent the draft summary of the federal project and the financial economic feasibility study to it for approval to the departments responsible for digital transformation, as well as to the Project Office for the implementation of the Digital Economy of the Russian Federation and the Working Group on Artificial Intelligence at ANO "Digital Economy."

The structure of the federal project implementation

> In accordance with the order of the Government of the Russian Federation dated July 3, 2020, No. AB-P13-114pr within the framework of the implementation of the federal project, the Ministry of Telecom and Mass Communications of Russia is responsible for ensuring the coordination of the following tasks:
>
> - ensuring the implementation of ready-made solutions based on artificial intelligence (hereinafter referred to as AI solutions) in sectors of the economy, society, and public administration;

- formation of a system of AI solutions available to developers, constantly updated data sets, sources of which are government bodies, constituent entities of the Russian Federation, state corporations and companies with state participation, scientific organizations.

At the same time, it was deemed expedient to recognize the provision of assigning responsibility to the Ministry of Economic Development of Russia to ensure the coordination of the following tasks:

- formation and promotion of the growth of a community interested in the development and implementation of AI solutions of citizens, pre-acceleration of teams of developers of AI solutions in order to support the formation of commercially successful companies;

- provision of a financial acceleration mechanism for small and medium-sized companies and developers of AI solutions based on the seamless integration of support measures;

- creation of research centers in promising areas of technology development based on artificial intelligence;

- adoption of normative legal acts that remove regulatory barriers for the development of artificial intelligence technologies and the implementation of AI solutions in economic and social sectors;

- training of personnel with knowledge and skills for the creation and use of AI technologies in economic and social sectors.

Financial provisions

The need for funding for the federal project will be met through budgetary allocations provided for the implementation of the national program "Digital Economy of the Russian Federation" in the amount of RUB 22,500.0 million, and the state program of the Russian Federation "Development of the electronic and radio-electronic industry" in the amount of 6,910.0 million rubles, as well as budgetary allocations from departmental programs of digital transformation, and extra-budgetary sources in the amount of 6,903.0 million rubles.

Practical benefits of the initiative

In accordance with clause 17 of the National Strategy for the Development of Artificial Intelligence for the Period up to 2030, approved by Decree of the President of the Russian Federation No. 490 of October 10, 2019 (hereinafter referred to as the Strategy), the implementation of the Strategy is a prerequisite for the entry of the Russian Federation into the group of world leaders in development and the introduction of artificial intelligence technologies and, as a result, the technological independence and competitiveness of the country.

Goal of the federal project

Enterprises and citizens use products (and services) based on predominantly domestic artificial intelligence technologies that provide a qualitatively new level of operational efficiency.

Tasks of the federal project

The objectives of the federal project are:

1. Developing and growing software that uses AI technologies;
2. Supporting scientific research in order to ensure the advanced development of AI;
3. Increasing the level of staffing of the Russian market of AI technologies;
4. Increasing the availability of hardware required for solving problems in the field of AI;
5. Creating an integrated system of regulation of social relations arising in connection with the development and use of AI technologies;
6. Popularizing and developing the field;
7. Implementing AI solutions in sectors of the economy and increasing the availability and quality of data necessary for the development of AI technologies.

Summary

Summary (passport) of the federal project "Artificial Intelligence" of the National Program "Digital Economy of the Russian Federation"

1. Basic provisions

Name of the national project	National program "Digital Economy of the Russian Federation"
Short name of the federal project	Artificial intelligence	Implementation period: 01.01.2021-31.12.2024
Curator of the federal project	Chernishenko Dmitry Nicholaevich	Deputy Prime Minister of the Russian Federation
Head of the federal project	Tarasenko Oksana Valer'evna	Deputy Minister of Economic Development of the Russian Federation
Federal project administrator	Tikhonov Rustam Sergeevich	Director of the Department for Strategic Development and Innovation of the Ministry of Economic Development of the Russian Federation
Relationship with government programs of the the Russian Federation	**1. State program:** Economic development and innovation **Subprogram:** Fostering innovation
	2. State program: Industrial development and increased competitiveness **Subprogram:** Development of production of means of production
	3. State program: Scientific and technological development of the Russian Federation **Subprogram:** Fundamental new research for long-term development II ensuring the competitiveness of society and state
	4. State program: Promotion of employment of the population **Subprogram:** Development of labor market institutions
	5. State program: Information society **Subprogram**: Information environment

2. Goals and indicators of the federal project

Enterprises and citizens use products (services) based on predominantly domestic artificial intelligence technologies, which provide a qualitatively new level of efficiency*

Indicator Name	Unit of Meas.	Base value		Period, year			
		Base value	Date	2021	2022	2023	2024
1. Publications of Russian specialists at conferences in the field of AI level A*	Main indicator, units (in year)	33	31.12.19	36	48	60	90
2. Share of federal executive authorities that approved changes in departmental digital transformation programs and are implementing measures to introduce AI and prepare data-sets	The main indicator %	0%	31.12.19	50%	100%	100%	100%
3. Number of AI specialists trained in graduate and additional education programs	Main indicator, people (in year)	650	31.12.19	1,916	2,434	2,128	4,241
4. AI community size	Additional indicator,%	100%	31.12.19	120%	140%	160%	200%
5. The number of companies-developers of AI solutions, having received state support within the framework of the federal project "Artificial intelligence"	Additional Indicator, units (cumulative total)	0	31.12.19	247	620	920	1,199
6. Satisfaction with the working conditions in the RF of citizens interested in the development of AI technologies	Additional indicator,%	Absent	Absent	To be clarified after the development of the methodology			

*CNA Comment: Please note that we omitted the last column "key parameter attribute" from the table, which said "no" on all rows.

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