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CNA Russia Studies Program

HIGHLIGHTS OF ISSUE 41

- Prime Minister Mishustin announced amendments to the tax code to provide further subsidies for the domestic tech industry.
- The Russian military is looking to naval deck-based drones, new UAV navigation systems and EW networked warfare.
- The IT company RDTECH has begun a regime of cooperation with Content AI, an AI information processing solutions company, to synchronize efficiency plans for managing electronic documents for internal accounting processes.
- Scientists from the National University of Science and Technology recently conducted a demonstration of a newly developed quantum network node.
- Russia experiences a "scientific blockade" while ties with China grow stronger.

THIS WEEK'S CONTENTS

GOVERNANCE AND LEGISLATION

PRESIDENT PUTIN SPEAKS ON IMPORTANCE OF TECHNOLOGICAL SOVEREIGNTY

In numerous public forums, Vladimir Putin recently spoke about the importance of Russia's technological sovereignty. As he elaborated on this need, he drew connections between technical sovereignty and public, economic, and military-political sovereignty. These types of sovereignty are all intertwined, and the improvement of one will inherently affect the others. As an example, he cited Russia's hypersonic weapons. They enhance military-political sovereignty but are also a result of Russia's technological sovereignty. Putin provided a telegram to guests of the XXV St. Petersburg International Economic Forum (SPIEF), available online, and assured them that the 2020s will be a decade of prosperity and economic sovereignty. Achievement of economic sovereignty will be possible because of the increased capacity of Russia's tech sector, and the subsequent accelerated technological development and advanced training of domestic tech professionals. He also celebrated the incoming independent and efficient financial system that will accompany and facilitate continuous economic development and innovation.

Sources: "Leadership cannot be achieved without technological sovereignty, Putin said" [Без технологического суверенитета нельзя добиться лидерства, заявил Путин], RIA.ru, June 9, 2022, https://ria.ru/20220609/putin-1794336798.html; "Putin called the 2020s a period of strengthening the economic sovereignty of Russia" [Путин назвал 2020-е годы периодом укрепления экономического суверенитета России], Tass.ru, June 6, 2022, https://tass.ru/ekonomika/14831729.

MISHUSTIN ANNOUNCES MORE SUBSIDIES FOR DOMESTIC TECHNOLOGY

Prime Minister Mikhail Mishutin announced that the tax code will be amended to reduce income tax for companies implementing innovative domestic technologies. These tax adjustments accompany the 14 billion rubles in grants allocated for the IT industry in April, to "ensure the first large-scale implementation of Russian solutions in the field of information technologies." In another recent statement, Mishustin acknowledged that at present, less than a quarter of the technologies used in domestic enterprises are Russian made. Despite this gap in Russian production, he assured his audience that, through collaboration and business stimulation, it is possible to create a "new look" for IT solutions and Russian enterprise and fast-track entrepreneurial development. He said he remains hopeful about the ability to make up for Russia's weaknesses in the near future and described different measures that the government is implementing to "restore" the role of Russian manufacturing. In particular, he highlights the ability and intention of the Russian government to create a platform service for the Russian industry to streamline collaboration and production for greater economic benefit and productivity.

Sources: "The government intends to reduce income tax for companies implementing developments in the field of artificial intelligence" [Правительство намерено снизить налог на прибыль для компаний,

внедряющих разработки в области искусственного интеллекта], Interfax, June 3, 2022, https://www.interfax-russia.ru/main/pravitelstvo-namereno-snizit-nalog-na-pribyl-dlya-kompaniy-vnedryayushchih-razrabotki-v-oblasti-iskusstvennogo-intellekta; ""Digital" from idea to recycling. Mishustin spoke about the new look of Russian industry" ["Цифра" от идеи до утилизации. Мишустин рассказал о новом облике российской промышленности], Tass.ru, June 3, 2022, https://tass.ru/ekonomika/14816191.

RUSSIA ADVANCES ETHICAL REGULATIONS SURROUNDING AI

Three more regions will sign the Code of Ethics in the field of artificial intelligence (AI), including Khanty-Mansiysk, Innopolis, and the Far East later in the year. The code outlines ethical principles and standards of conduct to inform and assist participants in their activities in the field of artificial intelligence. Major Russian companies, universities, and research institutes have taken part and signed the Code of Ethics in October 2021, including the Moscow Institute of Physics and Technology, Sberbank, and Yandex. Before the establishment of this Code of Ethics, there were no regulatory guidelines on the ethics of AI implementation and development. As discussed in issue 39 of *AI in Russia,* the document consists of two sections: ethical AI implementation and development, and personal and information security within AI technology and innovation.

In addition to the new Code of Ethics, there is a new Commission on Ethics in the field of AI. This commission was created on May 30, 2022, to ensure cooperation and engagement between the signatories of the Code of Ethics. Andrey Neznamov, managing director of Sberbank's AI Regulation Center and head of the AI Alliance's Regulatory Working Group, chairs the commission. There are three working groups within the commission, which will develop methodologies to address new challenges around human impact of AI and machine learning. The commission and its working groups plan to hold signatories of the Code of Ethics accountable for ensuring the "freedom of human will and ensur[ing] the lack of discrimination and compliance of the implemented decisions with the legislation."

Sources: "Chernyshenko said that the code of ethics in the field of AI will be signed in three more regions of Russia" [Чернышенко заявил, что кодекс этики в сфере ИИ подпишут еще в трех регионах России], Tass.ru, June 2, 2022, https://tass.ru/obschestvo/14808479; "The Commission on ethics in the field of artificial intelligence has been created in Russia" [В России создана Комиссия по этике в сфере искусственного интеллекта], *Nezavisimaya Gazeta,* May 31, 2022, https://www.ng.ru/news/740197.html.

MILITARY AND SECURITY

RUSSIA'S ADVANCED DECK-BASED DRONE TO MAKE MAIDEN FLIGHT IN 2025

According to sources in Russia's defense sector who spoke to the TASS News Agency, an advanced deck-based unmanned aerial vehicle is scheduled to make the first test flight in

2025, with potential serial production to start in 2026. The sources note that the drone's front-end engineering design will begin in the second half of 2022, and the overall design is expected to be delivered to the MOD in 2024. TASS could not independently verify this information, although these data may relate to the maritime version of the Sirius long-range combat drone manufactured by the Kronstadt enterprise, the maker of the Orion medium-range drone that is already in service with the Russian military.

During an official visit to the Kronstadt manufacturing facility on January 27, 2022, Defense Minister Shoigu said that this company will be able to produce deck-based drones and helicopter-type UAVs. In February 2022, Kronstadt announced that its Sirius long-range military drone concept can be manufactured for the Russian Navy, and specifically for the two Project 23900 universal landing helicopter carriers *Ivan Rogov* and *Mitrofan Moskalenko,* currently under construction. The use of such maritime drones can augment the Russian Navy's capabilities by providing fire support for amphibious assault operations, and intelligence, surveillance, and reconnaissance to detect and eliminate adversary vessels and submarines. Sirius's regular serial production was supposed to begin in 2023, and we wrote earlier about Kronstadt's claim that its manufacturing was sanction proofed, with an all-domestic component base for its entire drone lineup. This claim will have to stand the test of growing concern across Russia's advanced industry about supply chains and import-substitution in the wake of Russia's February 2022 invasion of Ukraine.

Sources: "Advanced deck-based drone to make maiden flight in 2025 — source," Tass.com, June 7, 2022, https://tass.com/defense/1461445; "The first flight of the latest carrier-based drone will take place in 2025" [Первый полет новейшего палубного беспилотника состоится в 2025 году], Tass.ru, June 7, 2022, https://tass.ru/armiya-i-opk/14839493; "Expert: Sirius naval UAVs can be used on promising helicopter carriers" [Эксперт: морские БЛА "Сириус" могут использоваться на перспективных вертолетоносцах], Tass.ru, Feb. 8, 2022, https://tass.ru/armiya-i-opk/13642663?utm_source=google.com&utm_medium=organic&utm_campaign=google.com&utm_referrer=google.com.

DEPUTY PRIME MINISTER BORISOV ON THE STATE OF RUSSIAN MILITARY DRONES

In a recent interview with Russia's RBC TV channel, Deputy Prime Minister Yuri Borisov discussed the current state of Russian military drone development and acquisition. When asked about the capabilities of Turkish-made Akinci long-range military drones, he noted that Russia's own Orion medium-altitude, long-endurance and Altius high-altitude, long-endurance attack drones could carry antiship missiles for greater mission effectiveness. Borisov noted that a drone payload capacity is key in modern conflict, remarking that Russia's own UAV-based antiship missiles can have a range of up to 300 kilometers.

Borisov also stressed that Russia will increase mass production of military drones that are compatible with, or even better than, the much-discussed Turkish Bayraktar TB2 drone operated by the Ukrainian military against Russian forces. The deputy prime minister also asserted that

Russia is closing the gap with leading drone-using powers, and is rapidly developing different drone types for the military, such as reconnaissance, strike, tactical, operational, and operational-tactical versions. He acknowledged that Russia is behind the mass-scale use and introduction of such drones, noting that his country's involvement in Syria served as a major impetus for military UAV development and fielding.

While the Russian military is operating Orion drones over Ukraine in a limited capacity, the Altius is still undergoing final evaluation by the MOD. Billed as one of the two largest military UAVs in Russia—alongside the Okhotnik blended-wing UCAV—the Altius could add significant range and munitions capacity to Russia's growing combat drone fleet, if its manufacturing is scaled up by the Russian defense industry.

Sources: "Borisov said that Russian attack drones will be able to carry antiship missiles" [Борисов заявил, что российские ударные беспилотники смогут нести противокорбельные ракеты], Tass.ru, June 13, 2022, https://tass.ru/armiya-i-opk/14895037; "Borisov said that Russia has almost all types of drones" [Борисов заявил, что у России есть практически все типы беспилотников], Tass.ru, June 13, 2022, https://tass.ru/armiya-i-opk/14894783.

ROSTEC DESIGNS NEW UAV NAVIGATION SYSTEM TO COUNTER ELECTRONIC WARFARE, AND ADMITS TO TWO LOITERING MUNITIONS USED IN UKRAINE

The Kalashnikov company (part of Russia's Rostec corporation, the biggest defense-industrial conglomerate in the country) has announced the development of a new navigation system for unmanned aerial vehicles, which supposedly makes them invulnerable to electronic warfare countermeasures. According to Kalashnikov, the design does not rely on satellite navigation and is implemented in the form of a closed-loop guidance system, apparently allowing the drone to counter electronic warfare systems targeting the satellite link by making it impossible to seize electronic control over the UAV. Such a system could also potentially allow for greater UAV autonomy in combat. The company also claims that its new navigation system is more precise than an inertial navigation system (INS), a computational system used to determine the aircraft's position and velocity based on the measurements from an initial starting position, altitude, and speed.

Following the Kalashnikov announcement, Russia-based military experts remarked that the company most likely developed an autonomous navigation system operating on the principle of optical scanning. The key to its operation is an overview of the drone's operational environment and high-speed processing of the received data. This system could consist of a wide-angle camera and a small computer that processes incoming information. According to Russian experts, only a very powerful radiation flux from a large electronic warfare weapon from a fairly close distance could disable such a navigation system. Since such a close-range EW "blast" is often difficult to create, the drone that carries such a system could be less vulnerable to electronic warfare than other UAVs.

According to Kalashnikov designers, their system will help minimize the drone losses over Ukraine, where the Russian military is flying a large number of military and commercial UAVs for intelligence, surveillance, reconnaissance, combat, target acquisition, and electronic warfare missions. Since the start of the February 2022 invasion, Russian forces have been steadily losing its drones to Ukrainian countermeasures that have included kinetic and EW warfare. Most notably, they have lost many Orlan-10 UAVs that perform a range of missions. The Ukrainian military has acquired several counter-UAV systems from NATO and the United States, and electronic jamming equipment that can affect Russian drone operations is on the list of the American military aid to Ukraine.

Kalashnikov manufactures two of Russia's only loitering munitions, the KUB and Lancet models. Earlier in the war, several KUBs were either downed by the Ukrainian military or crashed in civilian neighborhoods without detonating, suggesting either a successful Ukrainian countermeasure or an internal malfunction. In June 2022, Rostec announced that both KUB and Lancet were used in Ukraine to strike ground targets, although there has been little open-source evidence of both munitions' successful missions. Both KUB and Lancet generated a lot of discussion since their initial use in Ukraine, given the Rostec claim that Lancet could operate autonomously via an optical-electronic system that can independently select and destroy a target.

Sources: "Rostec designs new UAV navigation system, making drones invulnerable to electronic warfare," Tass.com, June 3, 2022, https://tass.com/defense/1459967; Fact Sheet on U.S. Security Assistance to Ukraine, US Department of Defense website, June 1, 2022, https://www.defense.gov/News/Releases/Release/Article/3049483/fact-sheet-on-us-security-assistance-to-ukraine/; "Kamikaze drones successfully used in Russia's special operation in Ukraine—defense firm," Tass.com, June 8, 2022, https://tass.com/defense/1462311; Aleksei Zakvasin, "Autonomy and counter-interference: how a new navigation system increases the capabilities of Russian combat UAVs" [Автономность и помехозащищённость: как новые навигационные системы повышают возможности российских боевых БПЛА], Russian.Rt.com, June 4, 2022, https://russian.rt.com/russia/article/1010864-bpla-navigaciya-avtonomnaya-sistema.

RUSSIA'S PALANTIN EW SYSTEM A STEP CLOSER TO NETWORKED WARFARE

Dmitry Litovkin, one of Russia's main military commentators, recently featured an overview of the Palantin electronic warfare system for TASS, Russia's official media outlet. Palantin operates in Ukraine and consists of two dozen large trucks with electronic equipment. According to Litovkin, the system can create an information "dome" over its units in a fully automatic mode, scanning the space in search of signals from the adversary's radio equipment, selecting them, and ultimately deciding which targets to suppress. Palantin's goal is to target the Ukrainian Army command centers' communication, to jam airplane or helicopter communications, or to land small UAVs by jamming their command and control systems.

Litovkin notes that Palantin uses shortwave (HF) and ultrashortwave (VHF) ranges to "blind" the adversary, along with targeting cellular and trunking communications. The complex is endowed

with a system-forming function to combine various electronic warfare and electronic intelligence systems into a single working network, which potentially makes them significantly more efficient. The Palantin apparently operates in an automated mode by suppressing radio communication lines, including digital ones, on its own. It also selects various types of interference for targeting an adversary's navigation systems, command and control systems, and air defense radars. According to Litovkin, Palantin combines disparate information sources, then organizes and redistributes data to those tools that are likely to be able to perform suppression.

There has been increasing evidence that Russia is using more powerful electronic warfare systems and countermeasures against Ukrainian forces. In our foundational study of the Russian AI and autonomy ecosystem we also highlighted earlier Russian military plans for more autonomous military systems on the battlefield, including EW.[1]

Source: Dmitry Litovkin, "Under Palantin: How Russian EW systems are used in the special operation" [Под "Палантином": как в спецоперации используют российские системы радиоэлектронной борьбы], Tass.ru, June 10, 2022, https://tass.ru/opinions/14869605; Oleksandr Stashevskyi and Frank Bajak, "Deadly secret: Electronic warfare shapes Russia-Ukraine war," APnews.com, June 4, 2022, https://apnews.com/article/russia-ukraine-kyiv-technology-90d760f01105b9aaf1886427dbfba917?fbclid=IwAR0wIr7J6tDlxIH0euFLxQjw99fwXIbVkCWYV3M6yKpK6hZLubgGKf7sEvk; Jeffrey Edmonds et al., *AI and Autonomy in Russia,* CNA.org, May 2021, https://www.cna.org/reports/2021/05/ai-and-autonomy-in-russia.

MARKETS AND PRIVATE SECTOR

SUBSIDIES FOR RUSSIAN IT PRODUCTS SOLD ABROAD ANNOUNCED

New plans have been announced by the Russian Foundation for the Development of Information Technologies to showcase Russian IT products in foreign markets. The program will support "showrooms" and other means of attracting foreign investment, and will target Chinese, Indian, and African markets in particular. These subsidies will take the form of reimbursements, direct subsidies, and discounts for products paid for by the Russian state budget. This will be directed by a new Digital Attaché Institute, which will work in conjunction with the Ministry of Digital Transformation and the Ministry of Industry and Trade. Authorities have announced the selection of Russian software products that will receive compensation in return for reducing the cost of their software licenses when sold in targeted markets. The subsidies will target small and medium-sized businesses, which must be on official Russian state registers.

Source: "The authorities will allocate subsidies to Russian IT companies to promote their products in China, India and Africa" [Власти выделят российским ИТ-компаниям субсидии для продвижения их продуктов

[1] See the Artificial Intelligence and Autonomy in Russia report here: https://www.cna.org/reports/2021/05/ai-and-autonomy-in-russia.

в Китае, Индии и Африке], CNews, June 1, 2022, https://www.cnews.ru/news/top/2022-06-01_rossijskim_it-kompaniyam.

NEW GRANT ANNOUNCED FOR "ANTI-CRISIS AI"

A new competition has been launched by the Innovation Assistance Foundation for "Anti-Crisis Artificial Intelligence," funded by the "Artificial Intelligence" federal project. The grant size will be increased to 30 million rubles, and the share of co-financing from other sources for a given project will be reduced to no more than 20 percent of the total cost. The goal of the competition is to fast-track developments in products and services using AI tools. Specific fields of AI research and development include computer vision, natural language processing, speech recognition/synthesis, and intelligent decision support systems. The competition will be open until July 11.

Source: "Grant selection "Anti-crisis-artificial intelligence" will help bring domestic digital products to new markets" [Грантовый отбор «Антикризис-искусственный интеллект» поможет выводить отечественные цифровые продукты на новые рынки] *CNews*, June 1, 2022, https://www.cnews.ru/news/line/2022-06-01_grantovyj_otbor_antikrizis-iskusstvennyj.

AI INTEGRATED INTO FINE COLLECTION PROCESSES FOR TRAFFIC VIOLATIONS

Fines for traffic violations will be automated through an AI system, which will seamlessly integrate the collection regime with lists of citizens whose travel is restricted due to non-payment. The system is expected to be fully operational by 2023 and will lead to the automatic assessment of up to 80 percent of all traffic-fine decisions and payments.

Source: "In Russia, connected robots to collect debts on traffic police fines" [В России подключили роботов к взысканию долгов по штрафам ГИБДД], IXBT.com, June 8, 2022, https://www.ixbt.com/news/2022/06/08/v-rossii-podkljuchili-robotov-k-vzyskaniju-dolgov-po-shtrafam-gibdd.html.

INSURANCE REQUESTS PROCESSED THROUGH AI FILTERING PROGRAM

The VSK Insurance House has launched a series of AI-based programs designed to streamline the invoice and service approval processes. The programs have been developed by Mains Lab, and now account for 40 percent of successful requests for approval and processing. This follows previous efforts to limit the number of cost overestimation losses due to personnel error. According to Oleg Vitko, the deputy general director for medical insurance at VSK, "Digitalization of internal business processes allows us to increase the company's competitiveness by improving the quality of service for the client at all stages of the provision of services. The implementation of IT solutions, together with Mains Lab, helped to reduce VSK's internal costs and optimized the labor costs of specialists. Thanks to this, we can reduce the settlement period for clients, to offer them a fairer and more favorable policy cost. When developing projects, we focus on the best world practices in the field of insurance and strive to achieve even greater results.

We have fully automated 40% of calls under VMI due to data synchronization." This cooperative project with Mains has been in the works since 2020, and further integration of AI into internal processes is expected.

Source: "VSK reduces the processing time for applications under medical insurance policies by 15 times" [ВСК сокращает срок обработки обращений по полисам медицинского страхования в 15 раз], TASS, June 9, 2022, https://tass.ru/novosti-partnerov/14871389.

HARVEST YIELD MEASUREMENT TO RELY ON AI ASSISTANCE

The Russian Ministry of Agriculture is allocating 900 million rubles to a new program that will integrate existing yield estimate processes for Russian industrial agriculture with AI algorithms. This will be promoted alongside a new push for the digitalization of cadastral and household books that account for rural land demographic and yield characteristics. According to one report, "The development of [these] information systems will make it easier for farmers to receive state support, facilitate reporting, and provide them with a complete set of reliable industry data. The upgraded information systems of the Ministry of Agriculture are planned to be integrated into a single information platform of the national data management system."

Source: "In Russia, the harvest will be assessed by artificial intelligence" [В России урожай будет оценивать искусственный интеллект], Svetich, June 7, 2022, http://svetich.info/news/federalnye-novosti/v-rossii-urozhai-budet-ocenivat-iskusstv.html.

NEW COOPERATIVE AGREEMENTS ANNOUNCED BETWEEN IT AND AI COMPANIES

The IT company RDTECH has begun cooperating with Content AI, an AI information processing solutions company. The two firms are looking to synchronize efficiency plans for managing electronic documents for internal accounting processes. RDTECH is a major Russian software developer that creates enterprise architecture management systems and managerial decision support systems for Russian government entities and state corporations. The new partnership is a major element in bringing AI to bear in a major Russian IT sector.

Source: "RDTEX started cooperation with Content AI" [Компания РДТЕХ начала сотрудничество с Content AI], CNews, June 7, 2022, https://www.cnews.ru/news/line/2022-06-07_kompaniya_rdteh_nachala_sotrudnichestvo.

FERRIES GAIN AUTONOMOUS NAVIGATION TECHNOLOGIES

Ferries that connect Kaliningrad with Saint-Petersburg and the Leningrad region are being equipped with new autonomous navigation systems by Sitronics KT. The instruments are part of a pilot project "working out the possibility of widespread operation of autonomous ships under the Russian flag" headed by the federally coordinated Russian seaport entity Rosmorport and Sitronics. The project, which will equip two vessels on the Ust-Luga-Baltisyk ferry line, is expected to be completed by the end of 2023. For the equipment to function, a coastal remote control

center is being built at the port of Ust-Luga that will manage the autonomous navigation processes. The system has been under trial operation since 2021, but this will be the first time that autonomous navigation systems are used in commercial operations.

Source: "Sitronics KT will equip ferries connecting the Kaliningrad and Leningrad regions with autonomous navigation technologies" [Sitronics KT оснастит технологиями автономного судовождения паромы, соединяющие Калининградскую и Ленинградскую области], CNews, June 7, 2022, https://www.cnews.ru/news/line/2022-06-07_sitronics_kt_osnastit_tehnologiyami.

NEW CELL NETWORK BUILT IN SVERDLOVSK PLANNED WITH AI

MTS, the Russian mobile operator, announced that the construction plan for a new cell network in the Sverdlovsk region has been developed using an AI algorithm. MTS has used big data analytics in its "Smart Rollout" construction planning process since 2017, but this is the first time that the analytics have been directed by AI software. The algorithm has been programmed to predict the profitability of investments at the regional level, using a variety of sources, including technical parameters of network load, data transfer rate, needs and behavior of subscribers, places of their concentration, capital and operating costs of the company, competitor strategies, data on urban planning, and development of transport and social infrastructure, among others.

Source: "Artificial intelligence will deal with the deployment of MTS base stations in the Sverdlovsk region" [Искусственный интеллект будет заниматься размещением базовых станций МТС в Свердловской области], JustMedia.ru, June 6, 2022, https://www.justmedia.ru/news/society/iskusstvennyy-intellekt-budet-zanimatsya-razmeshcheniyem-bazovykh-stantsiy-mts-v-sverdlovskoy-oblasti.

NEW RUSSIAN SUPERCOMPUTER DEVELOPED AT BAUMAN UNIVERSITY

Researchers at Bauman University (Moscow State Technical University) have developed a new prototype supercomputer with an "intuitive processor" that also uses some import-substitution, friendly domestic systems architecture. The supercomputer, "Teragraph," is able to "find non-obvious relationships between the parameters of objects in large data sets and suggest optimal solutions to certain problems. By processing the medical data of a particular person and creating his digital twin, Teragraph will be able to give a hint on individual treatment." The Teragraph system is based on an Intel central processor running Linux, but the auxiliary computing modules are domestic manufactured Leonard Euler processors.

The general designer of the project, Alexei Popov, was interviewed by Russian media, giving an overview of the "graph"-based machine learning framework that the supercomputer relies on. He noted that "the peculiarity of Teragraph's work with graphs in the long term will allow creating digital twins of people and conducting experiments on them with different courses of treatment to choose the most effective one. The processor, analyzing the initial data, will offer different solutions for the course of treatment. Imagine that you have various parameters of the human body displayed on your computer. In the program, you can trace the effect of different drugs on

them without endangering the patient. Having chosen the optimal solution in the program, the treatment can be applied to a person."

Source: "In Russia created the world's first supercomputer with 'intuition'" [В России создали первый в мире суперкомпьютер с «интуицией»], *Gazeta.ru,* June 3, 2022, https://www.gazeta.ru/tech/2022/06/03/14938856.shtml.

DEMAND FOR VOICE ASSISTANT DEVICES GROWS

The demand for voice robotic services is growing with the advent of new features. According to the IT firm Mango Office, as of May 2022 the number of customers who connected voice assistants had increased one and a half times compared to the beginning of 2022. Voice robots are based on speech recognition and synthesis technologies and are designed to streamline production processes. Mango Office associates such a rate of introduction of a new type of "employees" into business processes with an increase in their level of intelligence. Mango Office voice robots have learned to work "according to a new scenario, process calls more efficiently at different times of the day and distribute calls from different regions." Robots with these features are most popular with companies in the fields of medicine, energy supply, online education, finance, delivery services, and online stores, where they are especially useful during peak periods.

According to Nikolai Babkin, the head of Mango Office's product management department, "Voice robots are of great interest to businesses of all sizes. So, the reasons for the popularity of the Mango Office service are the low cost and ease of implementation, coupled with the ability to integrate into the company's existing infrastructure and create a custom solution for the customer." In addition to maintaining a dialogue with the client, voice robots can perform mathematical operations, enter data into databases and extract information from external systems, and send SMS and emails to the client. An important option is the ability to integrate with CRM: voice robots use information from it during a conversation, and, based on its results, add new ones. In the process of communication, voice robots increase their knowledge, and the more they talk with customers, the smarter they become.

Sources: "Voice robots are getting smarter and more popular with businesses" [Голосовые роботы становятся умнее и популярнее у бизнеса], CNews, June 6, 2022, https://www.cnews.ru/news/line/2022-06-06_golosovye_roboty_stanovyatsya; "MDG Group introduced an updated version of Voice2Med" [Группа ЦРТ представила обновленную версию Voice2Med], TASS, June 1, 2022, https://tass.ru/novosti-partnerov/14791311.

WAREHOUSE ROBOTS TO BE INTRODUCED AT PROFRESH

Profresh, a third-party logistics operator in Russia, has just signed an agreement on the development of prototypes of robots for moving goods in a warehouse. The domestic startup Astabot, which is owned by Yuri Bukovnikov, the former co-owner of exist.ru, an online distributor of automotive parts, became the supplier of the robots. According to the agreement, the first samples of robots will be provided to Profresh within five months. After evaluating their effectiveness, the customer will decide on the purchase of a serial batch. According to preliminary

calculations, the introduction of robots to move goods around the warehouse can save 75 percent of the time of workers involved in the assembly of orders, as well as reduce the number of pickup errors.

According to reports, the specific robot used to move goods in these warehouses will be a mobile wheeled platform that drives under a pallet with goods, lifts the pallet, and moves it in accordance with a given algorithm. The basic type of robots may not have a lifting mechanism, in which case the pallet is manually installed on the mobile platform. A recent article noted that the choice of Astabot was due in part to the changing international situation. "Initially, to robotize the movement of goods in a warehouse, Profresh considered Western equipment built by Linde and Geek+. In March, the cost of robots of these brands increased following the [fluctuation in the] exchange rate. The possibility of their delivery to Russia was also in question. However, Profresh did not abandon the idea of robotization, as it already had a positive experience in robotics and wanted to scale it up."

These same reports point out benefits from domestically sourcing the warehouse robots: "Another advantage of the domestic supplier was the ability to customize robots taking into account the unique wishes of Profresh, while Western manufacturers work exclusively according to the formed product line. So, in the course of negotiations with the supplier, the scales were added to the initial functionality of the robots, allowing [them] to control the fact of shipment and minimize errors, as well as a scanner and a tablet for reading a barcode—it is usually held in the hands of typesetters, which is not always convenient and slows down their work."

Source: "Profresh introduces Russian robots in the warehouse" [«Профреш» внедряет российских роботов на складе], CNews, June 6, 2022, https://www.cnews.ru/news/line/2022-06-06_profresh_vnedryaet_rossijskih.

DRONE ECOSYSTEM LAUNCHED BY ROSTEC

The Rostec State Corporation has launched a digital ecosystem for unmanned aerial vehicles, termed the "Fly Drone" platform. The system allows coordinating drone flight programs for individuals and organizations, as well as hiring a drone if necessary. The launch of the Fly Drone platform was announced during the presentation of the new platform at the Digital Industry of Industrial Russia (CIPR) conference. The core of the Fly Drone platform is the "FlyMarket" service. This is an electronic platform for searching for qualified service providers performed using unmanned aerial vehicles, and drone pilots can collect orders for their services. FlyMarket provides the user with a wide range of functions—from the conclusion of a contract and payment to a report on the work performed.

The service makes the actions of the customer and the contractor transparent, protects both parties from fraudulent schemes, and guarantees the legal force of documents. If necessary, it carries out the instant registration of an insurance policy. At present, the Rostec portfolio company Fly Dron, in partnership with the Almaz research and production association, is implementing a joint project with the government of St. Petersburg to create a pilot urban air mobility zone for

testing drones. The work provides for the creation of the infrastructure necessary for drone flights in the airspace of St. Petersburg and ensuring their safety.

According to Oleg Yevtushenko, executive director of Rostec State Corporation, "Prior to the advent of this IT solution, coordinating a drone flight was complex and time consuming. The new digital platform has made it much easier to get permission to fly. The interface allows you to send an application to the air traffic authorities through the website and quickly get approval for the drone flight. Permitting procedures are carried out with all responsible structures and authorities online. As a result, the user gets the opportunity to fly just a few hours after submitting the application." The Fly Drone platform is capable of performing a number of operations—such as determining the coordination center of the Unified Air Traffic Management System and generating requests through the civil aviation information network. In addition, online it is possible to determine which boundaries of which settlements the drone will cross and coordinate the flight with the administration of the settlement.

Source: "Rostec launched an ecosystem for drones" [Ростех запустил экосистему для дронов], Rostec, June 2, 2022, https://rostec.ru/news/rostekh-zapustil-ekosistemu-dlya-dronov-/.

NEW PHARMACEUTICAL SALES PLATFORM LAUNCHED

Qsoft, a Russian digital integrator specializing in the development of large high-tech internet projects, has developed a new online sales platform for pharmacy chains and pharmaceutical distributors. The solution is built using AI-directed big data and machine learning technologies. The pharmaceutical platform was implemented on a database of more than 4,000 pharmacy outlets in more than 60 regions of Russia. According to Oleg Demchenko, the Qsoft development director, "The pharmaceutical industry is just starting its journey towards the digitalization of sales. Our new solution is designed to bring the e-com of domestic pharmaceuticals to the level of offline sales that are currently prevalent. The solution allows you to interact more with customers, increase the number of regular customers, collect order data and work with them to increase the average check and the frequency of purchases."

The major product is the Consumer Data Platform (CDP). According to reports, "CDP operates on the basis of multi-threaded import of product data (prices, stock descriptions) and allows you to process more [than] 3 million records in less than 20 minutes. As a result, the pharma network receives a unique, verified knowledge base about each of its clients with the formation of a single client profile. Based on the created base, with the help of ML, buyers are segmented by behavior and purchases. This allows you to build interaction in an omnichannel mode: website, chats, mobile applications, e-mail newsletters, push notifications, etc." The CDP platform used by Qsoft was trained and configured on the database of a large pharma network. At the same time, the peculiarities of each region (different prices, balances, conditions for receiving goods) were considered. Various elements of consumer behavior and preferences were also identified.

Source: "Qsoft offers an online sales platform for the pharmaceutical industry using AI and ML technologies" [Qsoft предлагает платформу онлайн продаж для фарм-индустрии с применением технологий AI и ML], CNews, June 2, 2022, https://www.cnews.ru/news/line/2022-06-02_qsoft_predlagaet_platformu.

SILHOUETTE SURVEILLANCE SYSTEM LAUNCHED

The Moscow region and two other unidentified regions in Russia have launched a system for tracking people based on their silhouettes. It works in conjunction with city video surveillance systems. The innovation is designed to determine the degree of congestion of public spaces, but law enforcement agencies will get access to the system. The system has been developed by NTechLab, although further information on the project has so far not been reported. The implementation of the NtechLab platform makes it possible to obtain depersonalized data on visits to public places and events. The platform uses artificial intelligence algorithms to process data. The system's capabilities include the ability to count the number of people in public places, as well as the analysis of their routes. Information for analysis comes from city surveillance cameras, which are integrated with NtechLab's systems and then output personalized data.

Source: "The Authorities in secrecy launched a system of surveillance of the Russians by silhouettes" [Власти в режиме секретности запустили систему слежки за россиянами по силуэтам], CNews, June 2, 2022, https://www.cnews.ru/news/top/2022-06-02_slezhka_za_rossiyanami_vyhodit.

RUSSIAN ECONOMY GAINS FROM AI MARKET DEVELOPMENTS

According to Deputy Prime Minister Dmitry Chernyshenko, the Russian economy grew by 300 billion rubles in value directly due to developments in the field of AI. Speaking at a meeting of a working group convened to assess the output of six government-funded AI research centers, Chernyshenko noted that "the most noticeable increase is observed in the financial sector—69 billion rubles—and in the ICT sector—55 billion rubles…it is necessary to strengthen the implementation of applied AI solutions to the real sector and accelerate the digital transformation of priority sectors of the economy." He also stated that the government was shifting to focus on training and retaining qualified personnel, as other elements of the broader AI ecosystem are better developed. The government expects that 9,000 men and women will enroll in bachelor's and master's programs in AI by 2024, a significant increase from previous years, and a result of new incentive structures that connect students with research centers, startups, and other opportunities.

Source: "Artificial intelligence brought more than 300 billion rubles to the Russian economy in 2021" [Более 300 млрд ₽ принес искусственный интеллект российской экономике в 2021-ом], Iot.ru, June 21, 2022, https://iot.ru/monitoring/bolee-300-mlrd-prines-iskusstvennyy-intellekt-rossiyskoy-ekonomike-v-2021-om.

HUMAN CAPITAL

AI HACKATHONS AND EVENTS

There were several developments in AI-related hackathons and training events during this reporting period, the most notable of which are mentioned below:

- On "Russia Day," June 12, schoolchildren from about 20 regions of Russia visited high-tech enterprises, and scientific facilities and organizations during excursions as part of the Priority 2030 program. Many of the facilities offered hands-on tutorials with their modern technologies, including a range of AI-based platforms. In 2021, more than 2,600 Russian students visited scientific facilities, including factories, nuclear power plants, railways, and chemical plants on Russia Day.
- Tomsk Polytechnic University is offering three summer school programs for college and graduate school students across Russia: one on IT, one on digital technologies in health engineering, and one on robotics and automation. Each program runs for five days in an online format, and admission is free. The first program begins June 20. This is the second iteration of the TPU AI/IT summer school program.
- Scientists from Tomsk Polytechnic University also recently helped design the 2022 "Big Break" competition, along with scientists from Rosgeologia (Russia's largest geological state holding company). There are four topics in this olympiad, which is designed for students grades 8-10: the field of the use of unmanned aerial vehicles (UAVs), artificial intelligence in geology, the rational use of groundwater, and new technologies for testing gold deposits. According to the article, this is the largest competition for children in Russia; in 2021 there were purportedly more than 2 million participants.
- The first regional hackathon of the "Digital Breakthrough" series began June 10. (As a reminder, this series plans to hold 116 hackathons and 85 science lectures on artificial intelligence by the end of 2024, including 25 regional, 8 district, and 3 national hackathons in 2022.) According to an article, students 14 years and older can participate in these regional championships, which are held online. Each will run for at least 25 days, and this year's regional events are expected to draw at least 2,500 participants. Meanwhile, the second district hackathon took place in Nizhny Novgorod. At this competition, participants were tasked with developing an AI prototype to predict the workload of ambulances based on a number of factors, including data trends and weather. According to the article, 744 participants registered for this hackathon.

Sources: "Excursions for schoolchildren to scientific institutes and enterprises will be held in honor of the Day of Russia" [В честь Дня России пройдут экскурсии для школьников в научные институты и предприятия], TASS, June 9, 2022, https://tass.ru/obschestvo/14868055; "TPU launches the second season of free summer schools in robotics and IT for Russian students" [ТПУ запускает второй сезон бесплатных летних школ по робототехнике и ИТ для российских студентов], CNews, June 6, 2022, https://www.cnews.ru/news/line/2022-06-06_tpu_zapuskaet_vtoroj_sezon; "Cases on artificial intelligence

and drones in geology were developed by TPU and Rosgeo for the All-Russian competition "Big Break"" [Кейсы по искусственному интеллекту и беспилотникам в геологии разработали ТПУ и Росгеология для всероссийского конкурса «Большая перемена»], National Oil and Gas Service Association, June 3, 2022, https://news.tpu.ru/news/2022/06/03/40733/; "Students from all over Russia will be able to find IT solutions for the regions" [Студенты со всей России смогут найти IT-решения для регионов], Ministry of Science and Higher Education, June 1, 2022, https://minobrnauki.gov.ru/press-center/news/?ELEMENT_ID=52087; "Ulyanovsk became one of the winners of the district hackathon on artificial intelligence" [Ульяновец вошел в число победителей окружного хакатона по искусственному интеллекту], Media 73, June 6, 2022, https://media73.ru/2022/ulyanovets-voshel-v-chislo-pobediteley-okruzhnogo-khakatona-po-iskusstvennomu-intellektu.

NUST MISIS DEVELOPS QUANTUM NETWORK NODE

According to a June 9 CNews article, scientists from the National University of Science and Technology (NUST MISiS) recently demonstrated a newly developed quantum network node. The node was developed by scientists from the NTI Center for Quantum Communications. According to the article, the node will be used to make quantum computers for solving educational and scientific problems using optics. It will also be used to prototype quantum internet devices which connect remotely to quantum computers to create a shared network.

Source: "Создан узел российской квантовой сети для интернета будущего" [Russian Quantum Network Node for the Internet of the Future Created], CNews, June 9, 2022, https://www.cnews.ru/news/line/2022-06-09_sozdan_uzel_rossijskoj_kvantovoj.

NEW ADVANCED AEROSPACE SCHOOL

According to a May 31 TASS article, the Samara National Research University is planning to open an advanced aerospace school with industrial partners Progress Rocket and Space Center (part of Roscosmos) and UEC-Kuznetsov of the Rostec United Engine Corporation. The school will offer instruction on a range of topics such as space engineering, aircraft engine building, and information technology, citing an "urgent need" for capable tech experts. By 2030, the school would produce more than 1,500 graduates employed at aerospace enterprises. The school would also create two new research and development tracks: a cyber-physical testing ground for designing and manufacturing satellites, and the experimental production of small gas turbine engines. According to the article, each would include research related to artificial intelligence, the internet of things, and predictive technologies.

Sources: "Samara National Research University. The Queen prepared a project for an advanced engineering aerospace school" [Самарский НИУ им. Королева подготовил проект передовой инженерной аэрокосмической школы], TASS, May 31, 2022, https://tass.ru/obschestvo/14775755.

WORKING GROUP MEETING FOR SIX AI RESEARCH CENTERS

According to a D-Russia article, at the end of May, Deputy Prime Minister of Russia Dmitry Chernyshenko held a meeting of the working group with Russia's six AI centers. The purpose

of the meeting was to discuss the work accomplished in the previous year and project plans for the upcoming year. As reported in earlier issues of *AI in Russia*, in October 2021, six Russian AI research centers were selected as part of the federal project "Artificial Intelligence" of the national program "Digital Economy": Skolkovo Institute of Science and Technology, Moscow Institute of Physics and Technology, the Ivannikov Institute of System Programming at the Russian Academy of Sciences, Innopolis University, St. Petersburg's ITMO University, and Moscow's Higher School of Economics. These six centers will receive an estimated 5.4 billion rubles from the federal government, as well as an additional 2.5 billion from the project partners until 2024.

The main task of the centers is to find breakthrough solutions in AI and help the country take a leading position in the global AI market. Additionally, each of the universities is implementing bachelor's and master's programs developed under the federal project in priority areas of AI. In his speech at the working group meeting, Chernyshenko stated that the work of the six AI centers was already showing "concrete results." He estimated that by 2024, Russia will have 9,000 people enrolled in master's and bachelor's programs in AI.

Chernyshenko toured an exposition where the centers presented the most promising pilot developments using artificial intelligence technologies. Examples given were "a device for diagnosing dyslexia in children, a drone with a system for identifying harmful crops for agriculture, a hardware and software system based on 3D technologies for medical operations, and a hybrid drone with video cameras, lidar sensors, cargo delivery capsules, and more." In terms of the AI centers' future research, a *Vzglyad* article noted that "ITMO University will develop an AI system for planning the integrated development of oil and gas fields, Skoltech will launch a software package based on AI algorithms for operational ice exploration in the Arctic, ISP RAS will develop a system for identifying and countering threats specific to AI, and MIPT will present a sample of an unmanned robotic vehicle, including the first prototype of the all-round optical view system for controlling unmanned vehicles."

Sources: "The results of the work of 6 research centers in the field of AI are presented—for which 900 million rubles were spent" [Представлены результаты работы 6 исследовательских центров в сфере ИИ – на что потрачены 900 млн рублей], D-Russia, May 31, 2022, https://d-russia.ru/predstavleny-rezultaty-raboty-6-issledovatelskih-centrov-v-sfere-ii-na-chto-potracheny-900-mln-rublej.html; "Dmitry Chernyshenko: It is necessary to strengthen the implementation of applied solutions for artificial intelligence in the real sector of the economy" [Дмитрий Чернышенко: Необходимо усилить внедрение прикладных решений по искусственному интеллекту в реальный сектор экономики], Government.Ru, May 31, 2022, http://government.ru/news/45572/; "Russia outlined directions for creating AI" [В России обозначили направления для создания ИИ], *Vzglyad,* May 31, 2022, https://vz.ru/news/2022/5/31/1160980.html.

INTERNATIONAL COLLABORATION

MEDVEDEV HIGHLIGHTS THREATS POSED BY SCIENTIFIC BLOCKADE OF RUSSIA

On Wednesday, May 25, Dmitry Medvedev, deputy chairman of the Russian Security Council, said that Russia is facing not only an economic blockade, but also a scientific blockade that restricts access to technologies and contacts with Russian researchers. He was speaking at a meeting of the presidium of the Presidential Council for Science and Education. Medvedev said that the country is facing serious challenges related to building its technological sovereignty and creating the basis for its independence from imports. "Our country is under the strongest sanctions pressure," he said. "We have been declared a blockade both in economy and, unfortunately, even science, including the restriction of access to foreign technologies and the cessation of contacts with domestic scientists."

He proposed the development and approval of a new forecast for Russia's scientific and technological development. The previous document, he said, was adopted a long time ago, and the situation has changed drastically since then. The new forecast, Medvedev continued, should become a tool for setting and adjusting the priorities of scientific and technological development as part of various plans and programs. While preparing it, it is necessary to take into account scientific possibilities, the proposals that are generated in this environment, and the demands of the economy and the social sector.

Source: "Medvedev says Russia faces not only economic, but also scientific blockade" [Медведев заявил, что России грозит не только экономическая, но и научная блокада], Tass.ru, May 25, 2022, https://tass.com/science/1455615.

DEUTSCHE BANK RELOCATES RUSSIAN IT SPECIALISTS ABROAD

According to the *Financial Times,* since the start of the Ukraine war Deutsche Bank has quietly relocated hundreds of its highly qualified software developers from its technical centers located in Moscow and St. Petersburg. About a quarter of all IT specialists of the bank worked in Russia— approximately 1,500 people. Of these, about half agreed to move to Berlin.

To organize the move, a team of about 50 people was formed, which included personnel officers, lawyers, and IT specialists. The bank carried out all the necessary bureaucratic procedures on the German side in advance, so that the process, although it turned out to be difficult, went smoothly on the whole—the employees got the opportunity to work immediately upon arrival in Berlin.

The move was organized in compliance with the migration laws of both countries. All candidates underwent a special background check, as Deutsche Bank feared that there might be spies among them. In addition, all software sources created in Russia were checked. In total, about 2,000 people were transported, including spouses and children. Deutsche Bank did not disclose the fate of the

employees who remained in the Russian Federation, but one of the managers said that the company continues to explore various options for further action.

Deutsche Bank opened its first technology center in Russia 20 years ago. The software solutions created here for the trading platform and internal corporate systems are very important for the company, which is why such a quick and massive relocation was started. Deutsche Bank specifically stressed that no important data were stored or processed in Russia.

Source: "Deutsche Bank quietly moved hundreds of programmers and their families from Russia to Germany" [Deutsche Bank по-тихому перевёз из России в Германию сотни программистов и их семьи], Servernews.ru, June 7, 2022, https://servernews.ru/1067465/?utm_source=nova&utm_medium=twitter&utm_campaign=sn.

CHINESE-RUSSIAN IT COOPERATION CONTINUES TO DEVELOP

China's special representative for Eurasian affairs, Li Hui, speaking via video link at the VII International Conference "Russia and China: Cooperation in a New Era," said that China and Russia should strengthen cooperation not only in traditional areas but also in the development of new areas, such as the fifth generation of 5G communications, artificial intelligence, and the green economy. He also pointed out that "the stable economic development of China and Russia and the expansion of cooperation will support the stability of global production chains and supply chains, and will certainly contribute to the development of the global economy."

Russia and China intend to support at least 10 joint scientific research projects during 2023-2025. This was announced on Thursday on the website of the Russian Ministry of Education and Science following a meeting of the working group on high technologies and innovations of the Russian-Chinese commission for the preparation of regular meetings of heads of government.

According to the statement, "In 2021, following the results of the competition, six research projects received support from the Ministry of Education and Science of Russia and the Ministry of Science of China. The average amount of budget funding for three years of project implementation from the Russian side amounted to 30 million rubles. As part of the meeting, the parties agreed to continue organizing competitive selections and, during the next competition in 2022-2023, to support at least 10 projects with an implementation period of 2023-2025." According to the ministry, the main topics of the meeting were the development of scientific and technical cooperation, the holding of congress and exhibition events, and the competition of joint Russian-Chinese projects.

The Chinese delegation were particularly interested in taking part in the work of the Snezhinka international Arctic station. The Snezhinka station should become a fully autonomous complex operating on the basis of renewable energy sources and hydrogen (without diesel fuel). The goal is research in the field of environmentally friendly life support technologies, telecommunications, biotechnology, aquaculture, new materials, and artificial intelligence solutions. At the Snezhinka

station, researchers will carry out joint work on environmental problems, climate change, and environmental pollution.

Sources: "The Ministry of Education and Science of Russia and the Ministry of Science of China will finance about 10 joint scientific projects" [Минобрнауки России и Миннауки Китая профинансируют около 10 совместных научных проектов], Tass.ru, June 6, 2022, https://nauka.tass.ru/nauka/14870511?utm_source=tass.ru&utm_medium=referral&utm_campaign=tass.ru&utm_referrer=tass.ru; "China called on Russia to develop cooperation in new directions" [Китай призвал Россию развивать сотрудничество в новых направлениях], Tass.ru, June 1, 2022, https://tass.ru/mezhdunarodnaya-panorama/14789217.

PROMOBOT EXPANDS BRAZIL CLIENT BASE

The Promobot mechanical consultant has started working with a new client in Brazil, in the non-state pension fund of the company Quanta Previdencia. The robot will communicate with visitors to the pension fund and answer their questions about the company. Also, promotional materials of the institution will be broadcast on the screen of the robot. The Promobot v.4 model has movable arms which it can move and use to point to any object. Thermal and photo printers are also built into the structure, and can help visitors can print various materials. Promobot speaks nine languages, including Spanish and Portuguese. Especially for the project of the Brazilian Quanta Previdencia Foundation, the developers of Promobot created a map of the Quanta Previdencia office for autonomous movement of the robot consultant. In addition, a database about the activities of the organization was developed in Portuguese.

Promobots now work in 43 countries around the world. This is not the first Promobot robot to operate in Brazil. Previously, the company began supplying mechanized consultants to shops in Rio de Janeiro and Patio Paulista shopping centers on the main street of São Paulo.

Source: "Brazilian Pension Fund Launches Russian Robot Consultant" [В Бразильском пенсионном фонде заработал российский робот-консультант], Cnews.ru, June 8, 2022, https://www.cnews.ru/news/line/2022-06-08_v_brazilskom_pensionnom.

"TECH EXPORT TO INDIA" ACCELERATOR PROGRAM CONTINUES TO DEVELOP

According to Deputy Mayor of Moscow Natalya Sergunina, the second stream of the Tech Export to India accelerator has begun in the capital. This is a program for entrepreneurs who want to bring technology products to the Indian market. The accelerator will help them determine the demand for their solutions and adapt their business to work abroad. The Moscow Export Center (MEC) co-finances 90 percent of the cost of participation in the project. According to Sergunina, "Companies from the fields of IT, retail, energy, and transport can join the program. Entrepreneurs will explore the cultural characteristics of building business relationships and doing business in India. Participants will meet with potential investors and receive individual expert advice. They are also waiting for classes on making presentations for foreign partners and networking sessions."

Alexey Fursin, head of the Moscow Department of Entrepreneurship and Innovative Development, specified that the export accelerator is designed for 15 weeks. The main requirements for candidates are that the team must have a legal entity in Moscow registered at least six months ago, and either demonstrate stable sales in the Russian market or have a minimum viable product in the international market. Last year, 30 companies passed the program.

The Moscow Export Center was established to provide financial and nonfinancial support to the city's entrepreneurs in promoting their products and services to foreign markets. One key task of the WEC is to increase the number of Moscow exporters and implement projects for the effective development of their foreign economic activity.

Source: "Moscow to host Tech Export to India business program" [В Москве пройдет бизнес-программа Tech Export to India], Cnews.ru, June 6, 2022, https://www.cnews.ru/news/line/2022-06-06_v_moskve_projdet_biznes-programma.

KamAZ LOOKING TO SELL UNMANNED MINING TRUCKS TO BRICS AND CIS COUNTRIES

In a recent statement, automaker KamAZ said that it plans to enter the export markets of the BRICS and CIS countries with its new product—unmanned mining dump trucks. The company noted that KamAZ and Tsifra Group entered into a cooperation agreement within the framework of the CIPR-2022 conference, according to which they plan to supplement robotic mining dump trucks with a domestic dispatch system for autonomous vehicles. This will be the last stage of work before the launch of the first Russian autonomous mining dump trucks at mining enterprises.

The announcement stated, "The companies intend to promote unmanned technologies in the domestic market, as well as enter the markets of the BRICS and CIS countries, which have already shown interest in Russian mining drones. Several enterprises in the coal industry have already expressed their willingness to become a platform for testing and operating heavy mining dump trucks." In addition, the parties agreed to exchange experience to build competencies both in the operation of autonomous vehicles and in production management.

Igor Bogachev, general director of Tsifra Group, added, "By the end of the year, we will have a mining production management system adapted for dump trucks and tested, which will allow us to effectively manage the fleet of autonomous vehicles at the enterprise. After its integration, KamAZ trucks will be deployed in the field conditions of potential customers, where we will test the reliability and efficiency of our technologies."

KamAZ is the largest manufacturer of trucks in Russia. It has assembly plants in Vietnam, Kazakhstan, Pakistan, and India. The main shareholders of the automaker are the state corporation Rostec (47.1%), Avtoinvest (23.54%), and Daimler AG (15%).

Source: "KamAZ wants to sell unmanned mining trucks to the BRICS and CIS countries" ["КамАЗ" хочет продавать беспилотные горные самосвалы в страны БРИКС и СНГ], RIA.ru, June 3, 2022, https://ria.ru/20220603/kamaz-1793017995.html?in=t.

UNIVERSITIES EXPAND TECH COOPERATION

The Ural Economic University and the Kyrgyz Economic University (KEU) are expanding their cooperation. KEU plans to launch training under the "Chess Art" program in 2022, which is being implemented by the Ural University. This was announced at a press conference at the Ural Information Center TASS by the rector of the Kyrgyz Economic University, Almaz Kadyraliev. He said, "The Ural Economic University has a specialty that has interested us very much, and we want to introduce it this year—in the art of chess and computer mathematics, which is headed by Grandmaster Karpov himself." Kadyraliev noted that the university is studying the programs of Russian universities in the business of ecosystems and in the field of IT.

The rector of the Ural Federal University, Viktor Koksharov, said at a press conference, "When we discuss in detail the prospects for cooperation with colleagues from Kyrgyzstan, of course, we will offer our programs. Today we are actively working in the field of artificial intelligence: we have four master's programs prepared, and they are being implemented not only at our university, but in general [at] a number of partner universities in Russia."

Yaroslavl State University (YSU) and the Higher Institute of Applied Sciences and Technology (HIAST), considered the leading engineering institute in Syria, have agreed to cooperate in the fields of mathematics and physics, as well as work on databases. According to the universities' press release, "The heads of the universities agreed on cooperation during the stay of the delegation in the Yaroslavl region. Both sides plan not only to ensure a mutually beneficial exchange of experience and technologies, but also to open access to the results of advanced research in the field of mathematics and physics, as well as to developments and databases data." HIAST representatives were interested in the projects of the Center for Artificial Intelligence and the Institute of Radio Engineering Systems at YSU. Developments in the field of control of unmanned vehicles, telecommunications, and artificial intelligence aroused the greatest interest.

Finally, Moscow State University (MGU) is ready to provide universities in the Donetsk and Lugansk People's Republics with access to expensive research equipment and databases, as well as to support the implementation of a number of projects in the field of artificial intelligence. This was announced on Friday by the rector of Moscow State University Viktor Sadovnichy during the First Educational Forum of Educational Organizations of Russia, the DPR, and the LPR, which is taking place in Rostov-on-Don.

According to Sadovnichy, "The first is the participation of our colleagues in the 'Artificial Intelligence' program for regional partners, such a program will be created. The second is the access of teachers from the Donetsk and Luhansk republics to the computing resources and databases of Moscow State University. Moscow University has the most powerful supercomputer in the country." In addition, students from the DPR and LPR will be sent to participate in practices at the Faculty of Biology and the Faculty of Psychology of Moscow State University, as well as provide scientific and methodological support in the development of psychological assistance services in the Donbass republics.

Sadovnichy also called on colleagues from the DPR and LPR to make more active use of the possibilities of electronic educational resources—in particular, the remote platform "University Without Borders." The educational forum is held with the aim of integrating the universities of the Donetsk and Lugansk People's Republics into the educational space of the Russian Federation.

Sources: "Kyrgyz university plans to introduce a chess program developed by Ural University" [Вуз Киргизии планирует ввести программу по шахматам, разработанную Уральским университетом], Tass.ru, June 3, 2022, https://tass.ru/obschestvo/14815095; "Moscow State University will provide universities in Donbass with access to its equipment and databases" [МГУ предоставит вузам Донбасса доступ к своему оборудованию и базам данных], Tass.ru, June 3, 2022, https://tass.ru/obschestvo/14815561; "Yaroslavl State University agreed on cooperation with the Engineering Institute of Syria" [Ярославский госуниверситет договорился о сотрудничестве с инженерным институтом Сирии], Tass.ru, May 31, 2022, https://tass.ru/obschestvo/14785189.

SEVERAL INTERNATIONAL IT FORUMS HELD ON RUSSIAN TERRITORY

The 13th international SCO/BRICS IT forum was held recently in Khanty-Mansiysk. The forum is recognized as the world's leading discussion platform for communication between representatives of political and business circles, who also discuss the most relevant trends in the development of the digital economy. Traditionally, representatives of the diplomatic corps of foreign states in Russia, federal and regional government bodies, IT companies, public and scientific organizations, and the expert communities of foreign countries take part in the forum. The TASS News Agency is traditionally the forum's general media partner.

At the forum, Innopolis University in Tatarstan announced that it will cooperate with friendly countries to overcome technological dependence and develop artificial intelligence and robotics. Iskander Bariev, the university's first vice-rector and the head of its department for design and research activities, stated, "We have refocused on friendly countries with which we are trying to build new channels of interaction. There are tasks [to overcome] technological dependence. There are complex tasks with artificial intelligence, robotics and more. We are at the initial stage [of this effort]." Bariev added that about 70 percent of university teachers are foreigners, but many have decided to stay in Russia, as the university helps them implement their projects. Innopolis University specializes in education, research, and development in the field of information technology and robotics. The university operates according to a model that is unique for Russia, combining education, science, and business.

An international forum on "artificial intelligence in medicine" was held in Yugra recently, with participation by the deputy minister of health of the Russian Federation, Pavel Pugachev. He said that this year the government will launch a portal for artificial intelligence developers, which is designed to bring together market participants and startups in the medical field. Speakers at the session spoke about the introduction of artificial intelligence technologies in a medical organization and the prospects in this area.

Sources: "Innopolis University will work with friendly countries to solve the IT challenge" [Университет Иннополис будет работать с дружественными странами для решения IT-зада], Tass.ru, June 7, 2022,

https://tass.ru/obschestvo/14846717; "International IT Forum in Ugra" [Международный IT-Форум в Югре], d-russia.ru, June 9, 2022, https://d-russia.ru/mezhdunarodnyj-it-forum-v-jugre-v-kartinkah-pervye-dva-dnja-meroprijatija.html.

SPOTLIGHT

AI FOR LAW ENFORCEMENT: RUSSIA'S INTERIOR MINISTRY AND POLICE USE NEW TECHNOLOGY

In May 2022, Internal Service Major General Yuri Voinov, head of the Information Technologies, Communications and Information Protection Department at the Russian Ministry of Internal Affairs (MVD), gave an interview about his ministry's adoption of new technologies, including artificial intelligence. Voinov noted that artificial intelligence is one of the priority areas for the Interior Ministry's digital transformation as it transitions from outdated technologies to modern digital solutions. Priority AI projects include identifying signs of serial (interrelated) crimes and determining the individual's external anatomical features by studying the DNA from biological materials seized during crime scenes. Voinov also noted that the Ministry of Internal Affairs is implementing domestic software solutions that use AI technologies and methods.

He also highlighted that AI use helps the ministry with routine and mundane tasks, such as optimizing the departmental and interdepartmental processes and interactions, reducing administrative barriers, avoiding the need for personal departmental visits, and thereby reducing costs and lowering the work burden on personnel. As an example, he discussed the routine process of reviewing and analyzing video recordings by an operator—a process that is replaced by intelligent video analytics, which ultimately makes it possible to respond more quickly to certain incidents. He also highlighted the MVD's use of machine image recognition technologies to identify and recognize wanted individuals suspected of committing crimes, as well as identify stolen or suspicious vehicles. MVD also developed a biometric identification system search through information arrays containing photographic images of unidentified corpses, missing persons, and people in the MVD databases.

Voinov also described the development of a predictive crime detection model based on primary data contained in statistical information and datasets. He mentioned the MVD use of ground and air robotic systems, and counter-UAS technologies. According to Voinov, the MVD pays great attention to the use of unmanned aerial vehicles for aviation support to protect public order, ensure public safety, and combat crime, corruption, extremism, and terrorism. He also discussed internet monitoring, with MVD units using software tools that perform multifactor search, as well as monitoring and analysis of social media and open-source information.

When asked whether AI could actually replace law enforcement personnel, Voinov admitted that artificial intelligence and robotics systems are already actively used in his line of work and can

even replace some human activity. However, he stated that at the current stage of development of science and technology, no intelligent systems can replace a person, including police officers, since such technologies are primarily considered for improving efficiency, and minimizing a number of routine processes and tasks. Voinov stressed that the introduction of artificial intelligence technologies at his ministry is meant to decrease crime levels and to increase the feeling of security among citizens, with the ultimate goal of improving the quality of life.

Going forward, Voinov stressed the following promising AI developments and applications across the MVD and law enforcement:

- Computer vision technologies, and the implementation of accounting and registration actions to protect public order and ensure public safety
- Data mining, speech recognition and synthesis, and natural language processing for detection, suppression, disclosure, and investigation of crimes
- Provision of public services by using technologies that increase the level of satisfaction of citizens with the quality of public services, and that identify unlawful accidental or intentional actions in the provision of such public services

Other MVD priority areas include the development of unmanned vehicles and robotic systems, and the development of systems for forecasting and monitoring the operational situation, decision-making, and incident response. Voinov also stressed that the MVD adheres to the principles of trusted artificial intelligence—the transparency, reliability, and safety of using artificial intelligence technologies—and noted that the balance between the introduction of new technologies and the protection of universal values, rights, and freedoms of citizens is very important.

Source: "AI in police service" [Искусственный интеллект на службе в полиции], official MVD website, May 25, 2022, https://mvdmedia.ru/radiomv/pryamoy-razgovor/iskusstvennyy-intellekt-na-sluzhbe-v-politsii/.

This report, the forty-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 by June 2022: Michael Kofman, Research Program Director
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