



A biweekly newsletter on AI and autonomy developments in Russia

CNA Russia Studies Program

HIGHLIGHTS OF ISSUE 40

- Russian government considers two bills: one to expand user data privacy and another to enable users to turn off recommender algorithms.
- Military AI will be used to monitor the Black Sea and drones against NATO.
- A variety of new initiatives and experimental AI-based products are leaving development stages and entering into the Russian cultural and entertainment market.
- Novosibirsk State University (NSU) and Sitronics Group (a microelectronics company within AFK Sistema) have signed a wide-ranging tech cooperation agreement.
- Russian leadership continues to prioritize options for import substitutions amidst a prolonged sanction environment.

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GOVERNANCE AND LEGISLATION

PUTIN AND PESKOV MAKE DEMANDS FROM RUSSIAN AGENCIES

Over the past few weeks Putin and his press secretary, Dmitry Peskov, have made numerous public statements regarding Russian business development and replacement capacity.

In a plenary session of the Eurasian Economic Forum, Putin assured attendees that Russia's production continues to grow and will not be hindered by the West's attempts to isolate Russia. Peskov further supported this narrative when he stated that not only is Russia incapable of being isolated, but the "aggressive revisionist course of the West requires a radical revision of Russia's relations with unfriendly states."

President Putin also called on businesses and the government to de-bureaucratize supervisory activity to enhance entrepreneurial activities and to enhance the protection of personal data. He commented that this capability, lacking in Russian industry, is a vital priority to create a state system and protective environment for further development.

Sources: "Putin said that Russian business will occupy the niches of departed Western companies" [Путин заявил, что российский бизнес займет ниши ушедших западных компаний], RIA.ru, May 26, 2022, <https://ria.ru/20220526/putin-1790843798.html>; "Putin called on government agencies to not interfere with business" [Путин призвал государственные органы не мешать бизнесу], RIA.ru, May 26, 2022, <https://ria.ru/20220526/biznes-1790852269.html>; "Putin demanded to strengthen the defense of the domestic digital space" [Путин потребовал укрепить оборону отечественного цифрового пространства], RIA.ru, May 20, 2022, <https://ria.ru/20220520/oborona-1789759727.html>; "The Kremlin pointed to Russia's ability to cope with the current difficulties" [В Кремле указали на способность России справиться с нынешними трудностями], Iz.ru, May 17, 2022, https://iz.ru/1335520/2022-05-17/v-kremle-ukazali-na-sposobnost-rossii-spravitsia-s-nyneshnimi-trudnostiami_

NEW LAW TO ENHANCE DATA PRIVACY

On May 26, the Ministry of Digital Transformation held a meeting to discuss different ideas to enhance personal data privacy and security and to heighten the standards of responsibility for companies and individuals. They agreed on a bill that will increase the responsibility of companies for the leakage of customer's personal data. The law introduces a blanket turnover penalty of 1 percent, and a 3 percent penalty for companies that fail to report the leakage to Roskomnadzor within 24 hours. The development of the initiative was fast tracked due to the exposure of the data of users of Yandex.Food Delivery Club and clients of the Gemotest laboratory.

There are issues concerning the law's implementation due to the gap in regulation and the absence of an official definition of "personal data leak." Despite this gap, the bill is in its final stages and was scheduled to be submitted the week of May 30. The measures proposed in the

bill are overall very similar to those in the General Data Protection Regulation (GDPR), which are in force throughout Europe and require turnover fines for data leakage. There are strong hopes that this bill will provide strong enough motivators to greatly enhance personal data privacy throughout Russia.

Source: "Leaks will take over" [Утечки возьмут в оборот], *Kommersant.ru*, May 30, 2022, <https://www.kommersant.ru/doc/5379590>.

ONLINE PLATFORMS REJECT ANTI-RECOMMENDER-ALGORITHM LAW

In the end of May, VK and Yandex publicly opposed the norm of a draft law, developed by the State Duma Committee on Information Policy, on recommender algorithms. If approved, the law would make it possible for users to turn off recommender algorithms on online platforms. The requirement can also be extended to any social networks, news and search aggregators, and audiovisual services, such as video hosting. VK and Yandex are confident that this feature would be utilized by about one-third of their user base and significantly decrease the amount of time users spend on these interfaces.

The bill was drafted due to concerns that autonomic recommendations create "abnormal interest in goods and influence public opinion," which is of particular concern due to the "outbreak of hostilities in Ukraine." The bill is slated to be adopted in the first reading before the end of the session.

Source: "Content has proven itself" [Контент себя зарекомендовал], *Kommersant.ru*, May 27, 2022, <https://www.kommersant.ru/doc/5369347>.

MILITARY AND SECURITY

MILITARY AI FOR MONITORING THE BLACK SEA

The Russian MOD's Scientific Research Institute for Long-Distance Radio Communications (NIIDAR, part of the RTI Systems Group) announced that it is developing an information system utilizing artificial intelligence to monitor the Black Sea. NIIDAR and RTI director general Yury Anoshko noted that along with the need to detect hostile vessels and aircraft in the area, there is now a need for extensive general monitoring of the entire Black Sea region, given the ongoing war with Ukraine and heightened tensions in the region.

Anoshko stated that the system will monitor the maritime environment in real time, receiving data from multiple open and classified sources, with automated processing and analysis of a designated area within the Black Sea. Specifically, this system is envisioned to spot "deviations from normalcy," detect and track potentially dangerous objects, and automatically issue relevant notifications to the military with the help of machine-learning algorithms and elements of artificial intelligence. There is no information on when this NIIDAR system will be fielded. CNA wrote earlier about the Russian military's plans to use artificial intelligence for data collection and analysis to

augment decision-making capabilities, one of the key MOD goals for developing and using AI. We have no information on how the system will be trained to recognize non-normal events.

Source: "Russia developing system with AI elements to monitor Black Sea zone — developer," Tass.com, May 25, 2022, <https://tass.com/defense/1455399>; Jeffrey Edmonds, Samuel Bendett, Anya Fink, et al., *Artificial Intelligence and Autonomy in Russia*, CNA.org, May 2021, <https://www.cna.org/reports/2021/05/ai-and-autonomy-in-russia>.

DISHWASHERS AND COMBAT

In May 2022, Russia's online newspaper *Gazeta* published counterarguments to the claims made by the Biden Administration that the Russian military is using commercial microchips taken from dishwashers, washing machines, and refrigerators. The Russian retort addressed a growing perception that Russian defense manufacturers were running out of key microchip and semiconductor components, forcing the extraction of strictly civilian microelectronics products for use in different weapons systems. The paper claimed that there are five reasons why such civilian-to-military technology transfer is not possible on short notice. First, specific equipment is required for such a transfer, which is not available in the field and during combat. Second, extracting microchips from household appliances is a difficult task to begin with. Third, it is essential that the chip extracted be exactly the right model to fit military requirements. Fourth, an experienced programmer is needed for such a task, since the chip present in consumer products like washing machines is programmed accordingly and needs to be "reflashed" to work in a combat vehicle. Finally, the paper claimed that if the microchip must be put into the armored vehicle, it cannot damage other microelectronic components at all stages of the process, which is an "impossible" task.

At the same time, the *Gazeta* article quoted sources saying that main microelectronics modules for military equipment are produced in Russia, while the military technology design centers have been under sanctions for a long time and did not stop manufacturing required products, including microchips. The Russian military's ability to survive Western sanctions that limit access to microchips and semiconductors is a subject of debate, with mounting evidence pointing to large-scale presence of imported electronics in Russian military systems. The Russian Ministry of Defense continues to deny any dependence on foreign electronics, claiming that Russia has the ability to produce necessary products at its enterprises and industries.

We wrote earlier about the impact of global sanctions on the Russian high-tech and AI developments, noting that the domestic economy would have to deal with significant fall-out after many international companies and organizations left the Russian Federation in the wake of February 2022 invasion of Ukraine.

Source: Roman Kildyushkin, "Is it possible to fix a tank with a chip from the refrigerator" [Можно ли починить танк с помощью чипа из холодильника], *Gazeta.ru*, May 19, 2022, <https://www.gazeta.ru/tech/2022/05/19/14870042.shtml> ; Jeanne Whalen, "Sanctions forcing Russian to use appliance parts in military gear, U.S. says," *Washington Post*, May 11, 2022, <https://www.washingtonpost.com/technology/2022/05/11/russia-sanctions-effect-military/>; Dmitry Gorenburg et al., *A Technological Divorce*:

The impact of sanctions and the end of cooperation on Russia's technology and AI sector, CNA.org, Apr. 2022, <https://www.cna.org/reports/2022/04/a-technological-divorce>; Jack Watling and Nick Reynolds, *Operation Z: The Death Throes of an Imperial Delusion*, RUSI.org, Apr. 22, 2022, <https://static.rusi.org/special-report-202204-operation-z-web.pdf>.

STRATEGIC DRONES WILL ADDRESS NATO CHALLENGES IN THE NEAR FUTURE

In May 2022, Russian defense minister Sergey Shoigu noted that the military threat is growing near the country's western borders due to the decision of Sweden and Finland to join NATO, prompting the formation of additional units and additional unmanned platforms. As a response, Russian MOD will form 12 military units and divisions in the Western Military District to address new challenges. Moreover, Shoigu noted that the MOD plans to equip the Aerospace Forces and the Navy with medium- and long-range unmanned aerial vehicles by 2030. According to the defense minister, the use of such drones will ease the pressure on flight personnel and reduce the costs of reconnaissance and strike operations, as well as lessen the consumption of ammunition and the aircraft's wear rate.

Shoigu also noted that over the past decade, the frequency of UAV flights across the Russian military has gone up seven-fold, while the combined annual flight time has increased 23 times. He specifically stated that since the beginning of the Russian military operation in Syria, more than 58,000 UAV sorties have been carried out, with the total flight time exceeding 377,000 hours. It is likely that these statistics include Russia's mass-scale UAV use in Ukraine for aerial surveillance and target guidance.

Finally, Shoigu stated that new military drones are entering service, without specifically naming the UAV types, although he may have referred to the additional Orion medium-altitude, long-endurance drones that are already being used by the Russian forces. This announcement prompted Russian military analysts to speculate that Altius long-range combat UAV is finally fielded and potentially could be used in Ukraine. If true, Altius could add significant long-range ISR and strike capabilities to the Russian military, although there are presently only several Altius airframes that were publicly acknowledged by the MOD in earlier statements and press releases.

CNA wrote earlier about the Russian military's plans to develop multiple combat unmanned aerial vehicles (UCAVs), such as Okhotnik and Altius that are currently undergoing testing and evaluation. Additional UCAV concepts such as Sirius and Helios are supposed to augment Russian forces with combat, intelligence, surveillance, reconnaissance, and electronic warfare capabilities for attacking adversary aerial and ground targets. While the Russian military is still working on such concepts, their actual fielding date is unclear, given the impact of Western sanctions on the Russian high-tech industry, and the ongoing war in Ukraine, which demands considerable share of Russian military and industrial resources.

Source: "Russian army to have strategic drones soon — defense minister," Tass.com, May 20, 2022, <https://tass.com/defense/1453839>; "Military expert Orlov: the latest 'Altair' UAV can be used in a special operation in Ukraine" [Военный эксперт Орлов: новейший БПЛА «Альтаир» может быть задействован

в спецоперации на Украине], Politros.com, May 21, 2022, https://politros.com/23449855-voennii_ekspert_orlov_noveishii_bpla_al_tair_mozhet_bit_zadeistvovan_v_spetsoperatsii_na_ukraine; Edmonds, Bendett, Fink, et al., *Artificial Intelligence and Autonomy in Russia*, CNA.org, May 2021. <https://www.cna.org/reports/2021/05/ai-and-autonomy-in-russia>.

MARKETS AND PRIVATE SECTOR

NEW DIGITAL PLATFORM FOR TRANSPORTATION IDEAS LAUNCHED IN MOSCOW

The Moscow Transport Innovations Foundation has launched a new ‘sandbox’ style digital platform, which is designed to provide a central hub where experts can evaluate and select high-quality IT solutions for transportation. The platform accepts submissions on a rolling basis, requiring only an application through the foundation’s website. According to Maxim Liksutov, the head of the Moscow Department of Transportation, “Infrastructure for electric vehicles, artificial intelligence to collect information about the situation on the roads, smart algorithms that redirect car flows online and help avoid traffic congestion are being tested or launched in the capital with the support of the fund. This is how we can support interesting ideas and develop the Russian transport industry.”

Source: “The Moscow Transport Innovations Foundation has launched a digital platform for startups” [Фонд “Транспортные инновации Москвы” запустил цифровую площадку для стартапов], TASS, May 25, 2022, <https://tass.ru/ekonomika/14720101>.

NEW BIG DATA SERVICE FOR CULTURAL AND ENTERTAINMENT EVENTS LAUNCHED BY MTS

A geoanalytics-based service has been launched by MTS, designed to provide automated suggestions for venue organizers based on inputs about infrastructure, audience, demographic characteristics, and size. The service is designed for organizers of cultural and other entertainment events in large, open-air spaces, including festivals, concerts, and sport competitions. The product is integrated with MTS Live shows and other concerts sponsored by the company. The first customer is the regional government of Samara province, whose Department of Tourism used it for their Volgafest Embankment Festival, the Shostakovich XX Century International Art Festival, and the interactive open-air museum “The Road to History is Our Victory.”

Source: “MTS launched a Big Data service to analyze the attendance of cultural events” [“МТС запустила сервис” Big Data для анализа посещаемости культурно-массовых мероприятий], CNews, May 30, 2022, https://www.cnews.ru/news/line/2022-05-30_mts_zapustila_servis_big_data.

DISPUTE BETWEEN TECH GIANTS AND GOVERNMENT

An upcoming bill on regulating recommender services for online platforms has been openly opposed by major Russian tech companies Yandex and VK. The bill is still working its way through parliament but foresees new regulations that will require users of social media and search platforms to be notified about the use of recommender algorithms, as well as provided with the ability to turn them off. The companies argue that this will impinge on their business models as well as unnecessarily hinder platform growth, given that recommender algorithms are already regulated by the Russian government in a separate legal framework.

Source: “Yandex and VK rebel against state regulation of recommender algorithms in social networks” [«Яндекс» и VK бунтуют против госрегулирования рекомендательных алгоритмов в соцсетях], CNews, May 27, 2022, https://www.cnews.ru/news/top/2022-05-27_yandeks_i_vk_buntuyut_protiv.

NEW MANUFACTURING DEVELOPMENT CENTER OPENED

Promobot, a major manufacturer of service robots, has announced a new center for the development of robotic solutions. According to reports, the center will partner with market leaders to “carry out activities in the field of creating scalable solutions in the field of mechatronics, artificial intelligence, machine learning, and other areas of robotics.” This center is also part of Promobot’s efforts to reorganize how it interacts with third-party vendors and R&D outfits. This is in alignment with Promobot’s new opening of a production line for robotic manipulator arms and other components for industrial robots using the Robo-C tilt-and-turn unit.

Sources: “Promobot opened a center for the development of robotic solutions” [«Промобот» открыла центр разработки роботизированных решений], CNews, May 27, 2022, https://www.cnews.ru/news/line/2022-05-27_promobot_otkryla_tsentr; “Promobot begins to produce manipulator arms” [«Промобот» начала выпускать руки-манипуляторы], CNews, May 19, 2022, https://www.cnews.ru/news/line/2022-05-19_promobot_nachala_vyuskat.

AI-BASED CULTURAL PRODUCTS COME TO MARKET

A variety of new initiatives and experimental AI-based products are leaving development stages and entering into the Russian cultural and entertainment market. These different products all use AI in creative and unusual ways to produce artwork, aid in translation, or otherwise provide cultural and entertainment services. Several examples of note have been brought forward in the last month. First, the Russian publishing house Individuum has published the first collection of short stories “co-authored with a neural network.” The stories, entitled “Trying to Wake Up,” are co-written by the writer Pavel Peppershtein and the ruGPT-3 neural network, which was trained on Peppershtein’s stories and interviews.

Another advancement in the Russian publishing world was announced by the social media network Odnoklassniki, which introduced the “Lightning” [“Molniya”] interface, which uses a neural network algorithm to allow for beginning authors to quickly identify and access social media groups that would likely be interested in their work. The tool is targeted to aid writers who

have not been able to gain more than 300 subscribers to their page and will help them until their reach begins to grow organically. Another text-based application created by Sber has been announced that will “shorten or rewrite any text in Russian without losing its meaning.” This summary and grammar-simplification service was developed by SberDevices and also uses the ruGPT-3 collection of algorithms.

Other cultural uses of AI have also been announced recently. A neural network developed by Platforma was trained on city images and music by local artists to create musical compositions based on five cities (Moscow, Saint-Petersburg, Nizhny Novgorod, Arkhangelsk, and Kazan). The company sees this as necessary for the tourist industry seeking to attract visitors to each city. Another effort at AI-generated cultural products comes from the STS television channel, which is preparing to film a new show, “Sidorovy.” The show’s scenes and scripts will be written by a neural network, “AI TV Script Generator,” developed by data scientists at the Skillbox digital platform company, which is trained on scripts from different mass-audience TV comedies.

Sources: “The world’s first collection of short stories co-authored with a neural network has been released in Russia” [В России выпущен первый в мире сборник рассказов, написанный в соавторстве с нейросетью], IXBT.com, May 24, 2022, <https://www.ixbt.com/news/2022/05/24/v-rossii-vypushen-pervyj-v-mire-sbornik-rasskazov-napisannyj-v-soavtorstve-s-nejrosetju.html>; “Odnoklassniki launched the Lightning algorithm to support new authors” [«Одноклассники» запустили алгоритм поддержки новых авторов «Молния»]. CNews, May 19, 2022, https://www.cnews.ru/news/line/2022-05-19_odnoklassniki_zapustili; “A neural network wrote music based on data on major Russian cities” [Нейросеть написала музыку на основе данных о крупных городах России], *Izvestiya*, May 24, 2022, <https://iz.ru/1338763/2022-05-24/neiroset-napisala-muzyku-na-osnove-dannykh-o-kрупnykh-gorodakh-rossii>; “Sber has created neural network services that allow you to shorten or rewrite any text in Russian without losing its meaning” [«Сбер» создал нейросетевые сервисы, позволяющие сократить или переписать любой текст на русском языке без потери смысла], CNews, May 19, 2022, https://www.cnews.ru/news/line/2022-05-19_sber_sozdal_nejrosetevye; “In Russia, they will shoot a series based on the script of the neural network” [В России снимут Сериал По Сценарию Нейросети], Telesputnik, May 16, 2022, <https://telesputnik.ru/materials/tech/news/v-rossii-snimut-serial-po-stsenariyu-nejroseti/>.

GEOTECHNICAL MONITORING OF NATURAL RESOURCE RESEVOIRS IMPLEMENTED

A new automated monitoring system for oil tanks is being piloted by Rostelecom, in conjunction with Tatneft, a major Russian oil company. The system uses predictive analytics to prevent manmade accidents at oil storage reservoir infrastructure. According to the project curator, Ruslan Abdulmanov, “The main goal of the project is the implementation of predictive analytics of the state of the reservoir for automated detection at an early stage of foundation settlement and deviation from the vertical of the tank walls, and control of changes in the stress-strain state. This is necessary for timely informing the personnel working with the facility about a critical change in state parameters, before the parameter values exceed the maximum permissible values.” The system uses wireless tilt sensors connected to an information collection and

transmission subsystem, which in turn is related to a processing software located in an automated operator workstation. The project is “import-independent,” relying only on Russian software, algorithms, and connectivity technologies.

Source: “Rostelecom and Tatneft are implementing a pilot project for geotechnical monitoring of reservoirs” [«Ростелеком» и «Татнефть» реализуют пилотный проект по геотехническому мониторингу резервуаров], CNews, May 23, 2022, https://www.cnews.ru/news/line/2022-05-23_rostelekom_i_tatneft.

SPERBANK SELLS SEVERAL DIGITAL ASSETS UNDER SANCTIONS PRESSURE

Sberbank has withdrawn its capital from a number of digital asset investments, including the Speech Technology Center, Evotor, the Okko Internet Cinema, the Zvooq music platform, and SberCloud. According to reports, this is due in part to efforts to evade sanctions against the products for foreign markets. All assets were part of the growing ecosystem of Sber-owned digital products, with the presumption that they would be further integrated in the future.

Source: “Sberbank quietly and urgently sold its famous ‘digital’ assets” [Сбербанк тихо и срочно распродал свои знаменитые «цифровые» активы], CNews, May 20, 2022, https://www.cnews.ru/news/top/2022-05-20_sberbank_tiho_i_srochno_rasprodal.

RUSSIAN ACADEMY OF SCIENCES ANNOUNCES ANCIENT MANUSCRIPT PROJECT

The president of the Russian Academy of Sciences, Aleksandr Sergeev, has announced an expansion of a project using AI to decipher ancient manuscripts. The project will focus on the manuscript library at the Institute of Mongolian Studies, Buddhology, and Tibetology in Ulan-Ude. This library contains 100,000 books, which represents the largest collection of ancient oriental manuscripts in the world. Speaking at the ‘New Horizons’ event hosted by the Russian Knowledge Society, Sergeev announced that AI-based decryption and analysis has already been performed on a subset of ancient Mongolian texts, but that the expanded project will include all ancient languages in collaboration with academic institutions in the Middle East and elsewhere. The current generation of decryption algorithms can reach 94 percent accuracy in detecting and recognizing individual characters in ancient texts, and is set to improve further as it is trained on the larger corpus of manuscript data.

Source: “Head of the Russian Academy of Sciences: the experiment on deciphering ancient manuscripts using AI will be expanded” [Глава РАН: эксперимент по расшифровке древних рукописей с помощью ИИ будет расширен], TASS, May 18, 2022, <https://tass.ru/ekonomika/14660897>.

IMPORT-SUBSTITUTION ADVANCES FOR SMART HOME DEVICES

The Russian Ministry of Digital Development is planning to ensure that all smart home devices will solely use Russian technologies by July 2023. Such devices are increasingly popular among Russian consumers, and, as a result, the government is keen to ensure that their

production will not be further disrupted by reliance on foreign parts or software. Prioritization of domestic-built devices is also “[for] their safety, because such devices cannot be remotely disabled by the manufacturer. In addition, the risk of data leakage of participants in the process, namely citizens, resource-supplying organizations, [and] emergency services, to third parties becomes minimal,” according to a representative from the Ministry of Industry and Trade.

Source: “We got into line: smart homes will be transferred to Russian technologies in 2023” [Встали в колонку: умные дома переведут на российские технологии в 2023 году], *Izvestiya*, May 18, 2022, <https://iz.ru/1335032/ivan-chernousov/vstali-v-kolonku-umnye-doma-perevedut-na-rossiiskie-tekhnologii-v-2023-godu>.

NEW VENTURE CAPITAL FUND ANNOUNCED

A new “Artificial Intelligence Venture Fund” has been announced by Nikolai Storonsky, a graduate of MIPT and founder of the UK-based fintech startup Revolut. Storonsky is prepared to invest up to \$200 million in the fund alongside other partners, which will be called Quantum Light Capital. The VC plans to use machine learning to identify series B and C startups rather than relying on “personal relationships,” according to Storonsky. He was quoted as saying that his motivation was the following: “Based on my own experience as an entrepreneur over the past eight years, I became disillusioned with venture capital” and that this was due to experiences which showed him “that venture investments are quite volatile and there is a certain mob mentality.” The hope is that a more algorithmic process for startup funding will avoid this problem.

Source: “Revolut Founder Nikolai Storonsky to Launch Artificial Intelligence Venture Fund” [Основатель Revolut Николай Сторонский запустит венчурный фонд с искусственным интеллектом], *INC Russia*, May 17, 2022, <https://incrossia.ru/news/ai-led-venture-capital-fund/>.

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:

- According to an RBC article, Rosneft held a digital hackathon on May 12-14, where participants designed AI tools to assist in the field of geology. Resulting AI tools included programs that could analyze data from wells, and software that could analyze seismic data. More than 400 students from 31 Russian cities participated.
- The first district hackathon as part of the “Digital Breakthrough” series was held in Khabarovsk on May 27-29 at Pacific State University. Participants designed AI tools to preserve aquatic bioresources for the Federal Agency for Fisheries.

- A new international hackathon, “Games of the Future” will be held in Russia in 2024. According to a May 19 Tass article, the games will test participants in a combination of digital and classic skills and will include about 15 categories. The games will run for nine days, and the location of the games will be announced on June 25, 2022.
- According to a May 26 article, Moscow University of the Ministry of Internal Affairs of the Russian Federation recently held a conference on “Artificial Intelligence in the Service of the Police.” Participants discussed relevant developments in AI, including speech recognition systems, video surveillance, vehicle recognition, search and analysis of illegal content, robots and robotic systems, biometric systems and unmanned aerial vehicles.
- According to a press release, the Digital Economy organization, the Ministry of Education, the Ministry of Digital Development of Communications, and some Russian technology companies (including Yandex, Kaspersky Lab, 1C Firm, Rosatom State Corporation, and VK) are jointly launching a children’s IT “summer camp.” This one-day camp contains several components, including a quest and quiz, and is designed to provide an opportunity for kids to get acquainted with popular IT professions and relevant information technologies in a playful way.
- The “New Horizons” educational event, which is hosted by the Russian Knowledge Society, was held on May 17-19 and involved more than 200 guest speakers. One portion of the event was focused on Russia’s IT field, including sessions on new sanctions, personnel shortages, and the future of Russian information technology and AI.

Sources: “Rosneft held the first competition of the country’s main IT marathon” [«Роснефть» провела первое соревнование главного IT-марафона страны], RBC, May 16, 2022, https://ufa.plus.rbc.ru/pressrelease/6282267b7a8aa95e09bacfff?from=regional_newsfeed; “District hackathon on artificial intelligence has started in Khabarovsk in order to preserve aquatic bioresources” [В Хабаровске стартовал окружной хакатон по искусственному интеллекту в целях сохранения водных биоресурсов], Federal Agency for Fisheries, May 27, 2022, <https://fish.gov.ru/news/2022/05/27/v-habarovske-startoval-okruzhnoj-hakaton-po-iskusstvennomu-intellektu-v-czelyah-sohraneniya-vodnyh-bioresursov/>; ““Games of the Future” in 2024 will be held in about 15 disciplines” [“Игры будущего” в 2024 году пройдут примерно в 15 дисциплинах], Tass, May 19, 2022, <https://tass.ru/sport/14676243>; “Vyatka State University presented its developments at the Interdepartmental Conference “Artificial Intelligence in the Service of the Police”” [ВятГУ представил свои разработки на Межведомственной конференции «Искусственный интеллект на службе полиции»], Newsler.Ru, May 26, 2022, <https://www.newsler.ru/society/2022/05/26/vyatgu-predstavil-svoi-razrabotki-na-mezhvedomstvennoj-konferencii-iskusstvennyj-intellekt-na-sluzhbe-policii>; “ANO “Digital Economy” announces the start of the summer educational project “Digital Day”” [АНО «Цифровая экономика» объявляет о старте летнего общеобразовательного проекта «День цифры»], Digital Economy News, <https://data-economy.ru/news/tpost/ld9gb4m621-ano-tsifrovaya-ekonomika-obyavlyaet-o-st>; “New Horizons: Federal Education Marathon” [Новые Горизонты: Федеральный Просветительский марафон], Russian Knowledge Society, <https://marathon.znanierussia.ru/#schedule?city=prosvetitelskij-marafon-novyehorizonty-informacionnye-tehnologi-407>.

NSU AND SITRONICS SIGN COOPERATION AGREEMENT

According to a May 27 CNews article, Novosibirsk State University (NSU) and Sitronics Group (a microelectronics company within AFK Sistema) have signed a wide-ranging tech cooperation agreement. The primary area of cooperation will be related to development of the Sitronics' Elbrus-8SV processor, including its potential use in a supercomputer center. The cooperation also allows for Sitronics to train NSU students, including internships and educational excursions to the production facilities.

Source: "NSU develops cooperation with Sitronics Group" [НГУ развивает сотрудничество с Sitronics Group], CNews, May 27, 2022, https://www.cnews.ru/news/line/2022-05-27_ngu_razvivaet_sotrudnichestvo.

INCREASE IN NUMBER OF COMPUTER SCIENCE STUDENTS TAKING UNIFIED STATE EXAM

A May 26 Vedomosti article announced that there has been a rapid increase in the number of Russian children interested in computer science, according to Unified State Exam data. According to the article, the number of students who selected computer science as an elective on the Unified State Exam in 2022 increased by more than 30,000, totaling 128,044. In 2021, there were 95,198 students; in 2020, there were 83,610. One exam official stated that computer science could soon surpass the most popular subjects— social studies and biology.

Source: "Rosobrnadzor announced an increase in the interest of schoolchildren in passing the exam in computer science" [Рособрнадзор сообщил о росте интереса школьников к сдаче ЕГЭ по информатике], *Vedomosti*, May 26, 2022, <https://www.vedomosti.ru/society/articles/2022/05/25/923663-interesa-shkolnikov-ege-informatike>.

AI TECHNOLOGY ENABLES USE SURVEILLANCE

As in previous years, students taking this year's Unified State Exam (USE) will be monitored via Rostelecom video surveillance. According to a May 24 article, this process has been significantly improved; the software has been hardened against hackers and viruses and now utilizes artificial neural network algorithms to identify rule violations among test takers. According to Rostelecom, in 2022, the number of students that the neural network can track at the same time has significantly increased. About 2,500 cameras operating on secure optical communication channels will provide surveillance at 85 USE examination points.

Source: "Objective exam with video surveillance of Rostelecom and artificial intelligence" [Объективный ЕГЭ с видеонаблюдением «Ростелекома» и искусственным интеллектом], Ural Press, May 24, 2022, <https://uralpress.ru/news/obshchestvo/obektivnyy-ege-s-videonablyudeniem-rostelecoma-i-iskusstvennym-intellektom>.

DIGITAL DEPARTMENTS CREATED AT 115 RUSSIAN UNIVERSITIES

According to a May 19 press release from the Russian government, new "digital departments" have been created at 115 Russian universities. These departments will introduce

additional training and requirements in the field of IT. Instruction will begin in September 2022. Eighty thousand students are expected to be trained in these digital departments per year, and by the end of 2025, more than 385,000 students are expected to graduate with these additional qualifications. By 2030, 1,135,000 graduates are expected. These departments were launched as part of the federal project “Development of the human resources potential of the IT industry” under the national program “Digital Economy.” According to a Russia article, the idea of creating digital departments came from the director of IC, Boris Nuraliev, who thought it was necessary to create an environment analogous to the military departments that existed in Soviet universities for training reserve officers.

Sources: “Dmitry Chernyshenko: “Digital Departments” Created at 115 Russian Universities” [Дмитрий Чернышенко: В 115 российских университетах созданы «цифровые кафедры»], Government of Russia, May 19, 2022, <http://government.ru/news/45450/>; ““Digital departments” created in 115 universities of the Russian Federation—government” [В 115 университетах РФ созданы «цифровые кафедры»—правительство], D-Russia, May 20, 2022, <https://d-russia.ru/v-115-universitetah-rf-sozdany-cifrovye-kafedry-pravitelstvo.html>.

INTERNATIONAL COLLABORATION

RUSSIAN LEADERSHIP EMPHASIZING SOFTWARE IMPORT SUBSTITUTION

Speaking at a meeting of the Security Council on May 20, 2022, Russian president Vladimir Putin called for strengthening measures to ensure the country’s information security and instructed the government to improve the mechanisms for ensuring the security of critical information structure and increasing the security of state information systems by switching to domestic equipment, technologies, programs, and products. In addition, he proposed to create a state system of information protection.

The president noted that the number of cyber-attacks on Russian information infrastructure is constantly growing, especially since the start of the Ukraine war. Putin emphasized that “it is necessary to strengthen the defense of the domestic digital space—there should be no weak points here. It is of fundamental importance to nullify the risks of leaks of confidential information and personal data of citizens, including through stricter control of the rules for the use of official equipment and communications.”

To strengthen the information security and technological sovereignty of the country, Vladimir Putin formulated three important tasks. The first is to improve the mechanisms for ensuring the security of critical information infrastructure (CII) in Russia. The second is to increase the security of state information systems. The third is to transition to domestic equipment, technologies, programs, and products.

He noted that as of March 31, 2022, it is forbidden in Russia to buy foreign software for CII facilities of the country and starting in 2025 the use of foreign means of information protection will be prohibited. CII objects included in this order include critical networks and information systems of

state organizations, transport, telecommunications, banking, nuclear energy, fuel and energy complex, healthcare, science, metallurgy, defense, rocket and space and chemical industries, and other key sectors.

Despite the superficially straightforward nature of this order, the situation with imported software today is actually quite complicated. Although there is a lot of talk about limits on Western software products in Russia and the end of foreign software support for Russian users, the actual situation is less scary, according to one Russian IT company's CEO.

Dmitry Zavalishin, the head of DZ Systems, argues that Russian domestic software today is at a very high level of development and that Russia has alternative replacement solutions for most imported software. India and China, which both have strong IT industries, can also provide replacements for Western software on the Russian market.

Sources: "Putin ordered the creation of a state information security system in Russia and named three main tasks for information security" [Путин распорядился создать госсистему защиты информации России и назвал три главные задачи по ИБ], CNews, May 20, 2022, https://www.cnews.ru/news/top/2022-05-20_vladimir_putin_predlozhit; Dmitry Zavalishin, "West is West and East is East" [Запад есть Запад, Восток есть Восток], D-Russia, May 24, 2022, <https://d-russia.ru/zapad-est-zapad-vostok-est-vostok.html>.

IMPORT SUBSTITUTION PLANS IN ELECTRONICS PROGRESS

NPP Digital Solutions JSC plans to launch a marketplace in September, where Russian design centers will publish data on the electronic components they have developed and their compatibility with various semiconductor industries. This is intended to simplify cooperation between design centers and electronics developers, for whom deliveries from abroad have become seriously complicated or completely impossible. The Ministry of Industry and Trade supports the project, but market participants doubt its relevance and effectiveness.

Alexander Rutkevich, general director of NPP Digital Solutions JSC (a manufacturer of telecommunications equipment), said on May 25, during the summit of electronics design centers, that the company plans to create a marketplace for IP blocks, which are modules that are used in the design of processors and other microelectronics. The launch of the platform is planned for September. The project involves the creation of a single database into which Russian developers of microelectronics and components will upload information about their IP blocks. This will simplify cooperation between electronics manufacturers who require IP blocks and their developers.

The Ministry of Industry and Trade told *Kommersant* that they support the initiative: "It will allow building effective interaction between domestic design centers." The ministry itself plans to create a "Modular Multiservice Industrial Platform," on which Russian manufacturers will be able to buy domestically developed computer-aided design (CAD) systems. However, *Kommersant's* interlocutors in the industry note that the marketplace will not solve the problem of access to foreign IP blocks: "Russian chipmakers, as a rule, purchased them from foreign companies: Synopsis, Cadence and others. But now this is difficult." A *Kommersant* source in the government

is also skeptical about the project, calling it useless: "There are not so many structures in Russia that develop and sell IP blocks to arrange a whole marketplace, there are no more than a dozen of them. Companies already know each other and cooperate." He hopes that budgetary funds will not be spent on supporting the operation of the IP blocks marketplace. It would be more productive to create a closed platform where Russian microelectronics developers will post technical documents on projects that they completed under the state order: "Other Russian companies could use these developments as part of their own projects."

Source: Nikita Korolev, "Design centers to be showcased" [Дизайн-центры выставляют на витрину], *Kommersant*, May 27, 2022, <https://www.kommersant.ru/doc/5369334>.

RUSSIAN IT SPECIALISTS RETURNING FROM ABROAD

According to Valentin Makarov, the head of Russoft, the Russian association of IT companies, Russian IT specialists have begun to return from abroad. In April, about 25,000 to 30,000 IT specialists left Russia; in May the departure continued at a much slower pace, but the number of those who left the country and returned to Russia equalized. Within nine months, Makarov expects the return of up to half of those who left in March-April. "According to the results of our annual survey, of the employees of Russian IT companies operating in the Russian market, the number who departed does not exceed 1-1.5%." He further said that according to the Ministry of Digital Development, "About 80% of SIM cards that have left since February 24 have returned to the country. "IT people" make up a significant part of this audience."

Makarov further noted that it is not IT specialists in general who are leaving, but those who speak foreign languages and represent one of the three segments of the IT industry: First are employees of offices of foreign IT companies in Russia that have decided to close their offices in Russia. Thirty percent of the number of office employees have left, while 70 percent have been picked up by large Russian IT companies. Second are employees of exporting companies who had problems with clients refusing to work with Russia due to "secondary sanctions" and with the transfer of payment for work from banks in unfriendly countries to Russian banks. Third are freelancers.

Makarov concluded by speculating that IT specialists are returning for two reasons: there is no mass military mobilization in Russia, and living conditions in the countries of mass relocation have turned out to be worse than they seemed from Russia. In addition, in European countries, IT specialists met with hostile attitudes from the local population, and sometimes also aggression from Ukrainian migrants.

Source: "Head of RUSSOFT: in May, the number of IT specialists who left and returned to Russia equalized," [(Глава РУССОФТ: в мае число выехавших и возвратившихся в Россию IT-специалистов сравнялось)], D-Russia, May 25, 2022, <https://d-russia.ru/glava-russoft-v-mae-chislo-vyehavshih-i-vozvrativshih-sja-v-rossiju-it-specialistov-sravnjalos.html>.

SBERBANK SPINS OFF KEY PARTS OF ITS ECOSYSTEM

Sberbank has sold assets that formed its ecosystem (SberZvuk, Okko, Okko Sport, SberCloud, and STC) to the little-known New Opportunities JSC, which was created after Sber became subject to Western sanctions. According to SPARK-Interfax, New Opportunities JSC was established on March 24, 2022, with an authorized capital of 10,000 rubles. The company is headed by Irina Rebrova and all of its shares belong to Tatyana Portnykh, both relatively unknown individuals.

After the outbreak of hostilities in Ukraine, a number of large Russian banks came under US sanctions. Sberbank ended up on the sanctions list on April 6. The sanctions include freezing assets in the United States, as well as a ban on interaction with American persons. Blacklisted companies and banks often sell their stakes in assets that value Western partners or technology. For example, VTB sold its stake in T1 integrator.

The Sberbank ecosystem previously included about 40 companies, including services for the purchase and delivery of products, entertainment and multimedia, carsharing, taxis, cloud services, and virtual assistants. Experts believe that the goal of the deal is to protect these assets and that the ecosystem will remain virtually unchanged. "The deal is probably needed solely to circumvent sanctions, because the company to which the assets are being sold is an incomprehensible new structure with a small authorized capital," said Denis Kuskov, CEO of Telecom Daily. In his opinion, the assets may return to the bank in the future. The exit of Sberbank will allow Okko and "Sound" to buy licensed content from foreign studios. However, major film studios have announced that they will no longer be screened in Russia, regardless of whether the partners are under sanctions. So have many singers and musicians.

According to Sergey Glandin, the head of the CA sanctions law and compliance practice Pen & Paper, the new owner of the companies will monitor changes in data about them in compliance databases, such as World-Check: "As soon as they report that they are not listed as Sber, it will be possible to tell counterparties that the risks decreased." Sanction risks for New Opportunities LLC itself as a result of the transaction may arise only if information about the relationship of this LLC with Sberbank appears in the US press and is noticed by the Office for Foreign Assets Control (OFAC).

Source: Nikita Korolev et al., "Sber found New Opportunities" [«Сбер» нашел «Новые возможности»], *Kommersant*, May 20, 2022, <https://www.kommersant.ru/doc/5357576>.

RUSSIAN GREETING ROBOT COMPANY EXPANDS TO KUWAIT

The Perm-based service robot company Promobot is working with the Open Arab University of Kuwait in the city of El-Ardia. The robot is designed to meet and greet employees, students, and applicants, communicating in English and Arabic. According to the developers, the droid is the only service robot in the world that speaks Arabic. In addition to the listed functions, Promobot can also maintain a dialogue, answer questions, and inform employees, students, and applicants about anti-Covid measures and innovations of the organization. The robot moves between the

objects of the university hall with the help of special sensors: they allow the robot to sense and avoid any obstacles in its path. According to Oleg Kivokurtsev, Promobot's development director, the university chose Promobot because its robot "speaks Arabic well, can integrate with third-party systems and services, and has the highest speech recognition rate." It is also more affordable than its competitors, "since the entire production cycle is concentrated in Russia, and not in different countries."

In order for the robot to perform its duties effectively, the creators of the robot, together with the local integrator Kiran Smart, developed a special linguistic database that contains several thousand questions and answers, as well as a face recognition system. This allows the robot to give correct recommendations, tell the latest corporate news, and greet executives by name. The Promobot company was founded in 2015 in Perm and is now based in Skolkovo. More than 35 Promobot robots are already working in the Middle East—specifically, in the UAE, Saudi Arabia, Kuwait, and Oman. Promobots work in a total of 43 countries of the world as administrators, promoters, consultants, guides, and concierges, replacing or supplementing live employees.

Source: "Russian robot has started working at Kuwait university" [Российский робот приступил к работе в университете Кувейта], CNews, May 30, 2022, https://www.cnews.ru/news/line/2022-05-30_rossijskij_robot_pristupil.

INTERNATIONAL IT FORUM BEING HELD IN KHANTY-MANSIYSK REGION

The XIII International IT Forum with the participation of the BRICS and SCO countries will be held in the city of Yugra in Khanty-Mansiysk Autonomous Okrug from June 7 to 9, 2022.

According to the organizers of the event, the IT-Forum-2022 venue will bring together more than 40 events in a mixed format. Particular attention is being paid to the topics of digital transformation, artificial intelligence and security in the digital environment. Representatives of governments and leading global companies are planning to discuss innovations in key industries, the role of digital technologies in modern conditions, as well as digital sovereignty and prospects for international cooperation.

The key events of the IT Forum include the following: the International Conference on Information Security, "Infoforum-Yugra"; the UNESCO International Conference, "Information and Communication in the Digital Age: Explicit and Implicit Impact"; the first "Junior-IT" Forum for Children and Youth; an off-site session of the Council of the Chamber of Commerce and Industry of the Russian Federation for IT Development; the EdCrunch Yugra International Conference for Educators; and a "Digital Technologies for All" exhibition.

This year, the forum will host large delegations from Kazakhstan and Kyrgyzstan, as well as participants from Brazil, India, France, Romania, Italy, South Africa, Belarus, Armenia, Mongolia, Ghana, and other countries. In total, representatives from 45 countries are expected to attend, including a number of diplomatic representatives. IT-Forum-2022 also expects the arrival of a large team of Chief Digital Transformation Officers (CDTOs)—heads of Russian government agencies in charge of digital transformation in various industries. Participation has already been confirmed by CDTOs from the following federal ministries: the Ministry of Digital Development,

the Ministry of Education and Science, the Ministry of Education, the Ministry of Economic Development, the Ministry of Health, the Ministry of Foreign Affairs, and the Ministry of Labor. In addition, speakers from the business community, scientific institutions, and experts from various industries are expected to attend, including Dmitry Gulyaev, Digital Youth Ombudsman of Russia.

Source: "The main topics of the international IT forum in Ugra: digital transformation, AI and security in the digital environment" [Главные темы международного IT-форума в Югре: цифровая трансформация, ИИ и безопасность в цифровой среде], D-Russia, May 26, 2022, <https://d-russia.ru/glavnye-temy-mezhdunarodnogo-it-foruma-v-jugre-cifrovaja-transformacija-ii-i-bezopasnost-v-cifrovoj-srede.html>.

BALTIC FEDERAL UNIVERSITY SIGNS COOPERATION AGREEMENT WITH UZBEK UNIVERSITY

The Baltic Federal University (BFU), based in Kaliningrad, has signed a cooperation agreement with Samarkand State Medical University (SSMU). The agreement will allow BFU to open a representative office in Samarkand, which will serve as a platform for joint research, including in the field of information technology and artificial intelligence for medical purposes, as well as for the promotion of the Russian language and culture. BFU rector Alexander Fedorov and SSMU rector Jasur Rizaev also signed a cooperation agreement, which provides for the creation of new academic mobility programs, the development of joint research work in the field of medicine and healthcare, and the joint participation of universities in international educational and scientific projects.

Source: "BFU delegation visited major Uzbekistan scientific and educational centers" [Делегация БФУ им. И. Канта посетила крупные научно-образовательные центры Узбекистана], TASS, May 25, 2022, <https://tass.ru/novosti-regionov/14719509>.

SPOTLIGHT



Source: "Sukhoi S-70 Okhotnik-B", Wikipedia Commons, https://en.wikipedia.org/wiki/Sukhoi_S-70_Okhotnik-B.

OKHOTNIK UCAV IS GETTING ADDITIONAL WEAPONS AND TESTING

When it was publicly flown with a Su-57 aircraft back in 2019, the Okhotnik long-range heavy combat UAV generated significant buzz from the international military analytical community, prompting discussion of Russian defense-industrial capabilities and new concepts for fielding combat drones. Since then, there has been few news about this UAV, reportedly Russia's largest combat unmanned aerial vehicle. CNA wrote earlier about Russian MOD's plans to use this drone as an adversary air defense penetrator, using artificial intelligence for autonomous flight and operation, as well as flying in manned-unmanned teams with the Su-57 advanced fifth-generation stealth fighter jet.

So far, there have been relatively few announcements about Okhotnik combat readiness. In May 2022, the Russian MOD made several announcements about specific Okhotnik tests. First, this UAV fired at ground targets with guided missiles that are also part of the Su-57 arsenal. According to official Russian sources, the tests were successful. Earlier, the MOD noted that using the same armaments and equipment for both Su-57 and Okhotnik simplifies these aircraft' operations and maintenance. In January 2021, Okhotnik struck ground targets with unguided weapons. Second, Okhotnik underwent frequency tests at the Novosibirsk Aviation Plant named after V. P. Chkalov, the site of its future construction for the Russian armed forces. According to the official press release, such frequency tests are the final stage of aircraft development and are carried out to eliminate the possibility of dangerous aeroelastic resonant oscillations, and to obtain experimental data on the vibration of all airframe elements in order to predict the behavior of the aircraft in

flight. This test included an Okhotnik airframe with all onboard systems. Finally, Rostec, the company manufacturing this drone, announced that Okhotnik serial production will start in 2023.

Okhotnik remains one of Russian military's most ambitious projects, a 20-ton blended wing stealth combat drone designed for long-range missions. This UAV is at the center of the MOD's ambitious plan to begin using unmanned and autonomous military systems in place of manned and crewed aircraft, in line with official concept that such technology is supposed to make military missions more effective. It is important to note that other long-range UAV projects, such as Altius, were delayed by a number of years due to design, manufacturing, and manpower issues, which the MOD pledged to address going forward. With the Russian invasion getting bogged down in Ukraine and draining Russian resources, it is unclear whether Okhotnik can be manufactured in large numbers starting next year, or whether its roll-out will also be delayed.

Source: "Okhotnik drone used Su-57 guided missiles in tests" [Источник: дрон "Охотник" применил на испытаниях управляемые ракеты от Су-57], Ria.ru, May 28, 2022. <https://ria.ru/20220528/okhotnik-1791355512.html>; "Okhotnik frequency tests took place" [Прошли частотные испытания беспилотника "Охотник"], Tass.ru, May 23, 2022, <https://tass.ru/armiya-i-opk/14698327>; "Serial production of Okhotnik heavy combat drones will begin in 2023" [Серийный выпуск тяжелых ударных дронов "Охотник" начнется в 2023 году], Ria.ru, May 18, 2022, <https://ria.ru/20220518/dron-1789229802.html>; Edmonds, Bendett, Fink et al., *Artificial Intelligence and Autonomy in Russia*, CNA.org, May 2021. <https://www.cna.org/reports/2021/05/ai-and-autonomy-in-russia>

This report, the fortieth 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.

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