



A biweekly newsletter on AI and autonomy developments in Russia

CNA Russia Studies Program

HIGHLIGHTS OF ISSUE 42

- *Kommersant* reported on June 20 that Russia's Ministry of Emergency Situations (abbreviated as MChS) has requested to deploy the Safe City systems to several Russian regions bordering Ukraine, where the Russian government has noted an increased risk of terrorist attacks.
- Russian military commentators are discussing the war in Ukraine on Telegram apps, and the Russian defense-industrial enterprises are working on unmanned ground and underwater vehicles.
- Yandex has released its latest language AI algorithm for public access. The natural language processing system, "YaLM," which is trained on 100 billion parameters, is the world's largest GPT-like neural network freely available to researchers and the wider public in English.
- Sberbank and Far Eastern Federal University are working together to establish "The Far Eastern Center for the Study of Legal and Ethical Aspects of AI and Digital Technologies" to analyze and monitor regulation of ethics in AI in the Asia-Pacific.
- Skoltech rector Alexander Kuleshov recently took part in a panel on "Artificial Intelligence: Human Resources, Technologies, Prospects." In discussing further development of the field, Kuleshov noted that there are no areas of knowledge in which artificial intelligence could not lead to serious results.

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GOVERNANCE AND LEGISLATION

EMERGENCY MINISTRY ASKS TO DEPLOY SAFE CITY TO REGIONS BORDERING UKRAINE

Kommersant reported on June 20 that Russia's Ministry of Emergency Situations (abbreviated as MChS) has requested to deploy the Safe City systems to several Russian regions bordering Ukraine, where the Russian government has noted an increased risk of terrorist attacks. Safe City programs involve AI-enabled systems harnessing data from cameras and various other sensors for monitoring and response. But, as discussed in past issues of *AI in Russia*, the Russian government recently balked at the growing cost of the program in Russia's regions. MChS has sought to justify this recent request by claiming that the system will reduce "the threat of diversionary attacks" and improve response time. Reporting suggests that, despite Western restrictions on technology exports to Russia, analysts do not expect a shortage of components if the deployments eventually proceed.

Source: Tatiana Isakova, Timofey Kornev, Nikita Korolev, "Cameras will be standing on guard" [Камеры поставят в караул], *Kommersant*, June 20, 2022, <https://www.kommersant.ru/doc/5421920>.

PERSONAL DATA LEGISLATION TO EASE CROSS-BORDER DATA EXPORT

As the Russian Duma debates the law "on personal data," Russian businesses have expressed concerns about provisions restricting cross-border export of personal data. Revisions to the bill seek to simplify the process of seeking permission from the Federal Service for Supervision of Communications, Information Technology and Mass Media (abbreviated as Roskomnadzor) for such exports, allowing export of data to countries listed by the agency as adequately protecting the rights of the data subjects or countries that support the General Data Protection Regulation. Roskomnadzor has indicated that it lists China in the former category, which means that cross-border export of data to China would be simplified.

Source: Anastasiya Gavriyuk, "Data exports to be eased" [Данным облегчат экспорт], *Kommersant*, June 25, 2022, <https://www.kommersant.ru/doc/5433641>.

SBER TO USE AI TO IMPROVE GOVERNMENT SERVICES

Russia's Ministry of Economic Development reportedly concluded an agreement with Sber to carry out a pilot project to improve the provision of government services to the public. Using AI-enabled technologies, the project will seek to systematize and provide analytics to over 250,000 state and municipal services.

Source: "An agreement is signed between Ministry of Economic Development and Sber on the improvement of state services using AI" [Подписано соглашение между Минэкономразвития и Сбером о совершенствовании предоставления госуслуг с помощью ИИ], *D-Russia*, June 24, 2022, <https://d->

russia.ru/podpisano-soglashenie-mezhdu-minjekonomrazvitija-i-sberom-o-sovershenstvovanii-predostavlenija-gosuslug-s-pomoshju-ii.html.

MILITARY AND SECURITY

RUSSIAN MILITARY TECHNOLOGY DEVELOPMENT IS DISCUSSED ON TELEGRAM

Since February 2022, Russian-language Telegram channels have quickly become go-to sources for up-to-date information on the war in Ukraine. With many channels having millions of subscribers, many Russia-based defense experts are taking their discussion to this platform. Viktor Murakhovsky, the chief editor of the *Arsenal Otechestva* (Fatherland's Arsenal) magazine and one of Russia's top military experts, is one of them. We have profiled his earlier analysis of military technology developments, particularly his discussion of ground forces and unmanned and autonomous systems.

In June 2022, Murakhovsky used his Telegram channel to discuss future tank development in light of the Russian performance in Ukraine. Highlighting that tanks are effective only when integrated into combined arms formations with infantry, artillery, mobile air defense, army aviation, reconnaissance, sappers, and technical and logistics support, he noted that a tank is capable of destroying any target on the battlefield within line of sight. At the same time, a single tank's limitation is timely identification of targets and threats. Murakhovsky concludes that the main development thrust for improving tanks for future combat is significantly improving their situational awareness and command and control. He proposes equipping each tank with micro-drones that will operate within a line-of-sight range (up to 4-5 km) in order to look around the corner, over the top of the hill, and over the edge of the forest. Such micro-drones will be as expendable as tank shells, for greater effect. Murakhovsky also noted the gradual automation and robotization of combat processes inside the tank and the reduction of the crew as another prospective development for tank warfare. Murakhovsky thinks that in the near future, mixed formations made up of crewed tanks and unmanned vehicles will take to the battlefield. In this scenario, remotely controlled robotic tanks can be the front offensive echelon to conduct reconnaissance, provide security, and perform other tasks in place of today's manned tanks.

Viktor Murakhovsky's ideas are no doubt influenced by a high loss ratio for many Russian and Ukrainian tanks in the ongoing war and form the basis of the general direction for the Russian ground force vehicle development from manned, to optionally manned, to eventual autonomy, working together with other unmanned ground and aerial vehicles. These and similar ideas from Russia-based military experts and defense research institutions were profiled in our 2021 *AI and Autonomy in Russia* report and in our newsletters. Murakhovsky also wrote his Telegram post a few weeks before Russian volunteers tested a commercial DJI Mavic drone from a tank for situational awareness, something that no doubt will be discussed by the Russian military, and potentially tested with other military platforms.

Sources: "Murakhovsky on tanks today and tomorrow," Telegram channel, June 2w5, 2022, https://t.me/Viktor_Murakhovskiy/288; Edmonds et al., *AI and Autonomy in Russia*, CNA.org, May 2021, <https://www.cna.org/reports/2021/05/ai-and-autonomy-in-russia>; DJI 911 Channel, July 5, 2022, <https://t.me/dji911mod/1159?single>.

RUSSIAN MILITARY DRILLS FOR MANEUVER WARFARE

As the Russian military continues to fight in Ukraine, it seeks to incorporate lessons learned so far from this and from previous campaigns. In June 2022, the Russian MOD announced that training camps in the Eastern Military District will study new methods for conducting highly maneuverable combat. The MOD notes that its Syrian operation played an important role in the introduction of new methods for conducting highly maneuverable combat. According to Russia-based military experts, the use of such methods helps the Russian armed forces in their ongoing invasion of Ukraine; training is focused on conducting dynamic combat operations, with priority given to the speed of troop movement and the speed of reconnaissance and decision-making. The MOD also notes that the Syrian campaign demonstrated the need for widespread use of aerial drones, electronic reconnaissance, and electronic warfare tactics.

Today, the Russian military is operating numerous aerial drones (UAVs) over Ukraine, and evidence suggests widespread use of electronic warfare against the Ukrainian military. Specifically, Russia-based military experts note the adaptation of Zala reconnaissance drones to the ongoing war. The Zala series have a well-encrypted communication channel, making it more difficult for Ukrainian electronic warfare to interfere with its operation. Another Zala adaptation involves two types of guidance systems: the drone can be controlled both via a radio channel and can apparently operate autonomously. The operator can switch between manual and automated control, thus masking the UAV signal from Ukrainian countermeasures.

Sources: Aleksei Zakvasin, Elizaveta Komarova, "'More fire and maneuvers': what modern combat tactics combat are mastered by the Russian army" [«Больше огня и манёвров»: какие тактические приёмы современного боя осваивает российская армия], Russian.rt.com, June 22, 2022, <https://russian.rt.com/russia/article/1017002-taktika-rossiya-armiya-manyovry>; Viktor Sokirko, "Zala UAV is impervious to Ukrainian EW: they simply don't see it" [Беспилотник Zala неуязвим для украинских РЭБ. Они его не видят], *Gazeta.ru*, June 23, 2022, <https://www.gazeta.ru/army/2022/06/23/15030422.shtml>.

RUSSIAN MILITARY CONTINUES USING AND REFINING UGV TACTICS AND CONCEPTS

Russian sappers are using new technology in their ongoing efforts to clear Donetsk and Luhansk regions from mines and unexploded ordnance. In June 2022, Russian MOD published footage of its forces using small Kobra ground robotic systems to conduct a survey of a given area, and to detect unexploded mines, missile fragments, and improvised explosive devices. Kobra was also used to inspect industrial and residential buildings before human sappers entered for clearing operations. While Kobra UGV use in Ukraine is relatively new, we wrote earlier about

Russian military's growing use of its Uran-6 demining vehicle to clear large areas from unexploded ordnance across Donbas and southern Ukraine.

At the same time, Russia's Rosgvardiya (National Guard), a new paramilitary force stood up in 2018 to deal with internal threats, has formulated technical requirements for the development of the Marker UGV serial version to patrol critical facilities, and to intercept and counter aerial drones. We wrote earlier about the Marker flagship MOD project, which allows for modular architecture and use of different weapon systems. Marker utilizes autonomy via modular multispectral vision system and data processing carried out by neural network algorithms. The Advanced Research Foundation, Marker's main developer, has also carried out several trials to test Marker's patrolling capabilities, and initiated counter-drone trials as a critical feature for military UGVs.

Sources: Konstantin Isaev, Alisa Crauze, "Joint work for humans and robots: how Russian sappers are demining Donbas" [Совместный труд человека и робота: как саперы РФ разминируют земли Донбасса], TVZvezda.ru, June 22, 2022, <https://tvzvezda.ru/news/2022622315-C5Ik3.html>; "In 2022, Rosgvardiya will form technical requirements for the Marker UGV" [Источник: Росгвардия в 2022 году сформулирует техзадание для "Маркера"], Ria.Ru, June 20, 2022, <https://ria.ru/20220620/marker-1796640925.html>; Ilya Vedmedenko, "New Marker robot was tested as a counter-drone system" [Новый робот «Маркер» испытали как средство борьбы с БПЛА], Naked-Science.ru, Feb. 12, 2022, <https://naked-science.ru/article/tech/novogo-robota-marker-ispytali>; *Artificial Intelligence in Russia*, issue 11, Sept. 25, 2022, <https://www.cna.org/our-media/newsletters/ai-and-autonomy-in-russia>.

MARKETS AND PRIVATE SECTOR

ADVANCES IN AI ASSISTANCE FOR PERSONNEL MANAGEMENT

A new personnel document processing program has been employed by the "Peton" technology and engineering company. Peton, which focuses on fuel and energy issues, has taken on a pilot platform—the Beorg (Biorg) Smart Vision platform—which is set to use AI technology in the processing of personnel documents. Beorg is a Russian AI developer and Skolkovo resident, with a focus on new computer vision and machine learning tools for document recognition, processing, and dataset markups. The program is expected to streamline hiring for the firm, and will act as a proof of market application for Beorg's software.

According to representatives from Peton, "When a new employee is hired, the HR specialist simply sends documents to the recognition circuit. The employee card in the personnel program is filled in automatically, without human intervention. Beorg's solution provides recognition of printed and handwritten information contained in 14 types of documents, including those of foreign countries. The quality of recognized data exceeds 99%. Based on the platform, the relevance and authenticity of the documents provided are also automatically checked. It is important to note that with the implementation of the solution, it became possible to process documents for new employees in parallel, i.e., AI simultaneously recognizes the documents of different employees."

Source: "Peton Holding has automated the process of mass employment of employees using domestic AI" [Холдинг «Петон» автоматизировал процесс массового трудоустройства сотрудников с помощью отечественного ИИ], CNews, June 24, 2022, https://www.cnews.ru/news/line/2022-06-24_holding_peton_avtomatiziroval.

AI LANGUAGE MODEL OPENED FOR PUBLIC ACCESS

Yandex has released its latest language AI algorithm for public access. The natural language processing system, "YaLM," which is trained on 100 billion parameters, is the world's largest GPT-like neural network freely available to researchers and the wider public in English. The system is published on GitHub, an open repository. According to Yandex, the goal of releasing it for public usage is to make sure that interest in the research and development community remains high and avoids being siloed due to the high cost of building such libraries and programs in the first place. As most companies cannot afford to train such systems themselves, Yandex is offering its version as a means to spur further innovation in the open market. This is the same approach taken recently by the US-based Meta, which is planning on releasing its own NLP model trained on an even higher number of parameters.

Source: "Russia's Yandex opens public access to AI large language model," Reuters, June 23, 2022, <https://www.reuters.com/technology/russias-yandex-opens-public-access-ai-large-language-model-2022-06-23/>.

FIRST NEUROMORPHIC CHIP UNDER DEVELOPMENT BY KASPERSKY LAB

Kaspersky Lab and Motiv NT have announced a new "neuromorphic" computer chip, designed to increase the efficiency of neural networks and decrease energy costs per chip.

The two companies have worked together since 2019, and Kaspersky now holds a 15 percent stake in the latter. They had previously worked together to design Russia's first neuromorphic processor ("Altai") designed for hardware system acceleration. The general director of Motiv NT, Alexey Romanov, describes the system as "hardware acceleration of the new generation of artificial intelligence systems based on the training of impulse neural networks. This approach is more biologically similar: neurons do not exchange numbers, as in artificial neural networks (ANN), but impulses—spikes, like biological neurons. This approach opens up the possibility of creating extremely energy efficient solutions." He expects that there will be considerable demand in the Internet of Things (IoT) space, as well as robotics, unmanned vehicles, security systems, and other applications.

According to Andrey Dukhvalov, the director of Advanced Technologies at Kaspersky Lab, "Over two and a half years of joint work on the creation of the Altai neuromorphic processor, we have made significant progress and see the great potential of this project in Russia and on the global arena. According to various estimates, by 2025 the global market for neuromorphic chips may exceed \$7.5 billion. Investment and becoming a shareholder of Motiv is an important step that confirms the visionary ambitions of Kaspersky Lab and the desire to find prospects in various

technological areas, including beyond traditional cybersecurity. This is the first round of investments, and we intend to continue increasing our share in the coming years.”

Source: “Kaspersky Lab invested in the creation of the first neuromorphic chip in Russia” [«Лаборатория Касперского» инвестировала в создание первого нейроморфного чипа в России], Plusworld.ru, June 20, 2022, <https://plusworld.ru/daily/tehnologii/laboratoriya-kasperskogo-investirovala-v-sozdanie-pervogo-nejromorfno-go-chipa-v-rossii/>.

SEVERAL NEW PARTNERSHIPS ANNOUNCED IN THE AI SPACE

Several new partnerships were announced in recent weeks in the AI space with regard to private market issues as well as public-private partnerships. These include the following:

- A cooperation agreement between MegaFon and Rosseti Lenenergo on testing Internet of Things (IoT) technologies in the power industry. The goal is to ensure that the Russian energy system is domestically resilient and efficient, complies with import-substitution requirements, and is safeguarded against security concerns.
- An agreement between Rosatom and the Roscongress Fund to jointly develop a quantum computing program. The agreement, signed at the Saint-Petersburg International Economic Forum, aligns Roscongress Fund interests in quantum computing with Rosatom’s “Quantum Technologies” (QT) affiliate. According to Ruslan Yunusov, the project office head for QT, “The result we are striving for is not only the development of quantum processor prototypes and specialized software, but the creation of an entire industry from scratch. Rosatom brings together universities, technology companies, foundations, development teams with one goal—to find potential points of interaction and achieve synergy in order to quickly reach the solution of applied business problems and the launch of pilot quantum projects.”
- An agreement between two IT firms, Inftech and Spetstech, to jointly integrate and promote their respective IT products that work to aid in predictive maintenance in industrial production. The firms produce the iPredicta software package and the Trim EAM system—both of which function together as a conjoint predictive analytic tool within a functional asset management system. The goal is to use these technologies in tandem to increase maintenance efficiencies, decrease equipment downtime, and increase total output. The joint system relies on collecting large amounts of data from process control systems and technical diagnostic systems, while also simultaneously performing diagnostics and running a predictive algorithm as data accumulate.
- An agreement for cooperation between the Ministry of Industry and Trade and Russian Railways focused on developing domestic AI technologies in medicine and healthcare. The cooperative arrangement will be coordinated through the Federal Resource Center for Universal Design and Rehabilitation Technologies, which is the ministry’s primary scientific organizational vehicle for technology development in these spheres.

Sources: “MegaFon and Rosseti Lenenergo will test IoT technologies in the electric power industry” [«Мегафон» и «Россети Ленэнерго» протестируют технологии интернета вещей в электроэнергетике], CNews, June 15, 2022, https://www.cnews.ru/news/line/2022-06-15_megafon_i_rosseti_lenenergo; “Rosatom and the Roscongress Foundation will jointly develop quantum computing” [“Росатом” и Фонд Росконгресс будут совместно развивать квантовые вычисления], TASS, June 15, 2022, <https://tass.ru/ekonomika/14919179>; “Inftech and Spetstech will jointly implement solutions in the field of predictive analytics” [«Инфтех» и «Спецтек» будут совместно внедрять решения в сфере предиктивной аналитики], CNews, June 14, 2022, https://www.cnews.ru/news/line/2022-06-14_infteh_i_spetstek_budut; “An agreement was signed on the development of artificial intelligence in medicine” [Подписано соглашение в сфере развития искусственного интеллекта в медицине], IKS Media, June 24, 2022, <https://www.iksmedia.ru/news/5893011-Podpisano-soglashenie-v-sfere-razvi.html>.

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:

- Yandex is hosting its annual programming “Russia AI Cup” on July 7–31. The format of the competition is “battle royale” and requires the dueling of AI robots; the last survivor wins. Around 2,000 participants are anticipated.
- The National Technical Olympiad (NTO) has launched a competition to find proposals for new competitions and scenarios for the Olympiad in the 2022–2023 academic year. These applications would be provided later to schoolchildren in grades 8–11 to foster their creation of and interest in AI. Those who participate and win in the Olympiads throughout the year are assisted with Unified State Exam points and other university application benefits.
- The third regional hackathon of the “Digital Breakthrough” series ran from June 24 to June 26 in Yekaterinberg. (As a reminder, this series plans to hold 116 hackathons and 85 science lectures on artificial intelligence by the end of 2024, including 35 regional, 8 district, and 3 national hackathons in 2022.) For more details about the “Digital Breakthrough” series, please refer to issues 40 and 41 of *AI and Autonomy in Russia*. According to the articles, the most recent regional hackathon required participants to solve three cases with AI solutions. These tasks include the following: develop an algorithm that can automatically analyze the emotional state of students in educational institutions based on streaming video from surveillance cameras; develop a system for describing the archive and search for photo and video files of various quality and volume for the Lizavert search and rescue team; and develop a web-based detection system based on artificial intelligence methods to determine “sick teeth” in children.

- Another AI hackathon under the umbrella of the “Digital Breakthrough” series began June 22 in Izhesk. The participants in this competition will solve the problems of a space startup over the course of a month.
- On June 26, the first all-Russian championship under the “Digital Breakthrough” series began in Moscow. Over the month-long competition, participants will solve three tasks related to the needs of JSC NIIAS (JSC Russian Railways), RBC, and the Moscow Institute of Physics and Technology (MIPT). These participants are competing for the prize of 3 million rubles. (This is the first of three “All-Russia” championships to be launched throughout Russia to encourage tech professionals to work together to solve one of three tasks using automation technologies.) At the start of this first championship, 1,000 people were already registered and the numbers are expected to continue rising.
- An online hackathon recently concluded, and its winners were school children from Tyumen School of Young Neuroengineers. The task had been to create a neural network to solve applied tasks in retail. All team members won 75,000 rubles.

Sources: “The All-Russian Artificial Intelligence Championship has started in Moscow” [В Москве стартовал всероссийский чемпионат по искусственному интеллекту], *Business Views Newspaper*, June 26, 2022, <https://vz.ru/news/2022/6/26/1164901.html>; ““Digital breakthrough. Season: artificial intelligence”: who will get 3 million rubles?” [«Цифровой прорыв. Сезон: искусственный интеллект»: кому достанется 3 млн рублей?], *Vesti Podmoskovye*, June 23, 2022, https://vmo24.ru/news/uchastniki_vserossiyskogo_chempionata_konkursa_cifrovoy_proryv_sezon_iskusstvennyy_intellekt_poboryutsya_za_tri_milliona_rublej; “The National Technological Olympiad has opened a competition for new profiles” [Национальная технологическая олимпиада открыла конкурс новых профилей], *Tass.ru*, June 22, 2022, <https://tass.ru/obschestvo/14992431>; “An artificial intelligence programming tournament will be held in July” [В июле пройдёт турнир по программированию искусственного интеллекта], *Igromania.ru*, June 21, 2022, https://www.igromania.ru/news/117176/V_iyule_proydyot_turnir_po_programirovaniyu_iskusstvennogo_intellekta.html; “The championship on the use of artificial intelligence has started in Izhevsk” [В Ижевске стартовал чемпионат по использованию искусственного интеллекта], *news.ru*, June 23, 2022, <https://news.ru/technology/v-izhevske-startoval-chempionat-po-ispolzovaniyu-iskusstvennogo-intellekta/>; “Programmers from all over the country participate in the Yaroslavl stage of the project “Digital Breakthrough. Season: Artificial Intelligence”” [Программисты со всей страны участвуют в ярославском этапе проекта «Цифровой прорыв. Сезон: искусственный интеллект»], *Yaroslavsky region*, June 15, 2022, <https://yarreg.ru/articles/programmisty-so-vsey-strany-uchastvuyut-v-yaroslavskom-etape-proekta-cifrovoy-proryv-sezon-iskusstvennyy-intellekt/>; “District hackathon of the project “Digital Breakthrough. Season: Artificial Intelligence” will be held in the Ural Federal District” [Окружной хакатон проекта “Цифровой прорыв. Сезон: искусственный интеллект” пройдет в Уральском федеральном округ], *Comnews.ru*, June 26, 2022, <https://www.comnews.ru/content/220852/2022-06-22/2022-w25/okruzhnoy-khakaton-proekta-cifrovoy-proryv-sezon-iskusstvennyy-intellekt-proydet-uralskom-federalnom-okruge>; “The best neural network was created by Tyumen schoolchildren” [Лучшую нейросеть создали тюменские школьники], *MK in Tyumen*, June 26, 2022, <https://tumen.mk.ru/economics/2022/06/22/luchshuyu-neyroset-sozdali-tyumenskie-shkolniki.html>.

AI-INTEGRATED SPORTS EVENT IN RUSSIA

“Games of the Future,” a competition involving the “use of the latest developments in the field of e-sports, robotics, augmented and virtual reality, information technology and artificial intelligence,” will take place in Kazan in 2024. According to the article, it will be livestreamed from major sports venues in Kazan, and will occur in different cities every two years. The minister of sports of Tatarstan recently released a statement, explaining that the first program and calendar of events has been scheduled; he anticipates over 150 million viewers on streaming.

Source: “Leonov: “Games of the future” can attract more than 150 million viewers on streaming” [Леонов: “Игры будущего” могут привлечь более 150 млн зрителей на стримингах], Tass.ru, June 21, 2022, <https://tass.ru/sport/14983441>.

NEW CENTER STUDYING ETHICAL ASPECTS OF AI IN EASTERN RUSSIA AND THE ASIA-PACIFIC

Sperbank and Far Eastern Federal University are working together to establish “The Far Eastern Center for the Study of Legal and Ethical Aspects of AI and Digital Technologies.”

According to the article, the joint research and analytical center will be completed before the end of the year, and will fall under FEFU’s Institute of Mathematics and Computer Technologies. Its larger purpose will be to analyze and monitor regulation of AI in the Asia-Pacific countries. As AI usage expands globally, this center will ideally serve as an authority on the intersection between ethics and AI in the Asia-Pacific region.

Source: “The Sperbank and FEFU will begin to study the ethical aspects of AI” [Изучать этические аспекты ИИ начнут Сбер и ДВФУ], Eastrussia.ru, June 17, 2022, <https://www.eastrussia.ru/news/izuchat-eticheskie-aspekty-ii-nachnut-sber-i-dvfu-/>.

INTERNATIONAL COLLABORATION

ARTIFICIAL INTELLIGENCE MAY HELP CIS PROSECUTORS IN THEIR WORK

Vladimir Zimin, the executive secretary of the Coordinating Council of Prosecutors General (CCGP) of the CIS, speaking at the 32nd meeting of the Coordinating Council in Minsk, proposed that scientific research on the activities of the prosecutor’s office and the problems of artificial intelligence be carried out in the CIS. Zimin believes that the potential of joint scientific research on issues that are of interest to prosecutors is not fully used. He noted that since prosecutor offices in CIS member states are being actively digitized, “sooner or later we will come to the need of using artificial intelligence in our activities.” According to him, there are two sides of the coin: “The first is how artificial intelligence can be used in the activities of the prosecutor’s office itself. And the second is that if we supervise the activities of state bodies, then

we must be in control of this situation. Therefore, I think it would be interesting to start a long-term joint study.”

Vladimir Zimin noted that he had collected materials on this topic in relation to the law enforcement sphere and the justice system. However, it is also required to translate materials from foreign languages. A number of international organizations are actively involved in this problem. For example, there is a group in the Council of Europe that investigates the problems of criminal liability related to artificial intelligence. It was decided that the protocol following the meeting of the Coordinating Council will reflect the need to intensify scientific research. Specific proposals on topics will be presented later.

Source: “The prosecutor's office and artificial intelligence: CIS proposes a topic for scientific research” [Прокуратура и искусственный интеллект: в СНГ предложили тему для научного исследования], Belta, June 24, 2022, <https://www.belta.by/society/view/prokuratura-i-iskusstvennyj-intellekt-v-sng-predlozhili-temu-dlja-nauchnogo-issledovaniya-509919-2022>.

AUTONOMOUS ARCTIC STATION SNEZHINKA TO CONTINUE WITHOUT FOREIGN PARTICIPATION

The member countries of the Arctic Council have for now suspended their participation in the Snezhinka (Snowflake) project. However, according to Nikolay Korchunov, chairman of the Committee of Senior Officials of the Arctic Council, it will be implemented as planned by the Russian Federation, regardless of whether other countries will participate. Speaking on the sidelines of the St. Petersburg International Economic Forum on June 15, Korchunov made clear that the concept of the project and its content are the result of Russia’s intellectual contribution and that it will continue the work on its own.

According to Valery Falkov, Russia’s minister of education and science, the Snezhinka International Arctic Station (IAS) will begin in the Yamalo-Nenets Autonomous Okrug (YaNAO) in 2023. Speaking at a meeting of the State Commission for the Development of the Arctic, Falkov said, “We expect that this project will become a kind of analogue of the ISS [International Space Station] in the Arctic. The study of the Arctic climate and the environment remains an important strategic task, the solution of which requires large-scale cooperation. Russia, a significant part of which is located at high latitudes, is interested in conducting breakthrough research in the Arctic, and the Snezhinka station will certainly contribute to the study of this climatic zone.”

Snezhinka is planned to become the world's first carbon-free autonomous scientific and educational complex. The station will be located in the Jade Valley of the YaNAO and will be the world's first scientific and educational complex that operates on hydrogen energy. The year-round station will consist of several domed buildings connected by walkways. From above, the buildings resemble a snowflake, which is how the project got its name.

The station was originally intended for international cooperation of researchers and engineers in order to test environmentally friendly technologies in the fields of energy, heat and water supply, construction, telecommunications, and medicine. Russian scientists will be able to conduct

research here in a wide range of areas, including hydrogen energy, thermal stabilization of permafrost soils, carbon footprint reduction technologies, arctic medicine, telecommunications in high latitudes, aero and hydroponics, and robotic platforms with artificial intelligence.

For the rest of this year, plans are to develop design estimates for the creation of the station and obtain a positive conclusion from the state examination. Construction is planned to start next year. The start of test operation of the project is scheduled for 2024. The main work on the creation of "Snowflake" is carried out by the Russian Ministry of Education and Science and the Moscow Institute of Physics and Technology. Technologies that will later be used at Snezhinka are already being tested at the MIPT test site.

Sources: Anna Cherkesova, "Russia will continue the Arctic project "Snowflake" even without the participation of other countries" [Россия продолжит арктический проект "Снежинка" даже без участия других стран], Profil, June 15, 2022, <https://profile.ru/news/scitech/rossiya-prodolzhit-arkticheskij-proekt-snezhinka-dazhe-bez-uchastiya-drugih-stran-1102280/>; "Falkov believes that the Snezhinka station in the YaNAO should become an analogue of the ISS in the Arctic" [Фальков считает, что станция "Снежинка" в ЯНАО должна стать аналогом МКС в Арктике], TASS, June 23, 2022, <https://nauka.tass.ru/nauka/15017065>.

RUSSIA SEEKS TO ATTRACT FOREIGN TECH WORKERS

Russia is facing a serious shortage of tech workers, exacerbated by the departure of Russian IT specialists in the aftermath of Russia's invasion of Ukraine. Some Russian officials are calling for measures to attract tech workers from abroad to come work in Russia. According to Deputy Interior Minister Igor Zubov, after the departure of a large number of professionals from the country due to sanctions, Russia needs about 170,000 IT specialists. In total, according to him, about a million people are now employed in the industry.

Sergey Plugotarenko, head of the Russian Association for Electronic Communications (RAEC), described the situation as follows: "The state and business—large, small and medium—need IT specialists, but there was such a need even before the imposition of sanctions. According to expert estimates, already in 2021 Russia lacked about a million IT specialists. Today we are faced with the relocation of IT employees abroad, however, there has also been a reduction in vacancies—both due to the curtailment of a number of projects, and due to a reduction in hiring. Therefore, in general, the situation remained at the level of 2021."

He noted, "The state has already created quite comfortable conditions for the development of IT business. These support measures are unprecedented in their scope. IT companies and individual IT specialists talk about this. At the same time, due to rather stringent requirements, not all employees, whom we at RAEC refer to as IT specialists, will be able to use them. Therefore, we have repeatedly stressed the need to extend support measures to a greater number of employees, including the self-employed. Measures are [also] needed to attract personnel from abroad to us."

According to Plugotarenko, the state and business are now implementing measures to reduce the shortage in IT workers. "This is not only an increase in enrollment in universities in IT specialties,

but also compensation for the costs of additional online education in this area, online courses, internships, hackathons. For example, the competition 'Digital Breakthrough. Season: Artificial Intelligence' helps develop the AI community and popularize artificial intelligence technologies, including among students and schoolchildren over 14 years old."

He believes that in order to reduce the shortage of personnel in the IT industry, it is necessary to continue the implementation of those measures that were already in place before the February events. These included an increase in the number of state-funded places in universities in IT specialties, compensation for additional training in digital professions, and development of cooperation between universities and leading players in the IT industry. "We need measures to attract personnel from abroad and facilitate their employment in Russian companies," added the head of the RAEC.

Source: "Expert proposes to simplify the employment in Russia of foreign IT-specialists" [Эксперт предложил упростить трудоустройство в России зарубежных IT-специалистов], *Vzgliad*, June 21, 2022, <https://vz.ru/news/2022/6/21/1164094.html>.

HEAD OF SKOLTECH SUGGESTS THAT RUSSIA CANNOT CATCH UP IN MICROELECTRONICS

Skoltech rector Alexander Kuleshov recently took part in a panel named "Artificial Intelligence: Human Resources, Technologies, Prospects" as part of the business program of the 25th St. Petersburg International Economic Forum (SPIEF). The participants of the discussion talked about the development of artificial intelligence, new niches for the introduction of Russian developments, and measures to support the IT industry by the state, as well as attracting the best personnel and creating comfortable conditions for them.

In discussing further development of the field, Kuleshov noted that there are no areas of knowledge in which artificial intelligence could not lead to serious results. According to Kuleshov, "In science, sometimes it happens that first we get experimental data, and only then comes a theory that explains everything. It's the same with artificial intelligence—for a long time it was a mysterious black box, with which someone worked better, someone worse, and now the magical element has gone and AI has begun to turn into an exact science."

He stressed that at present, artificial intelligence is being introduced everywhere. For his institute, the priority is the joint use of the components of the triad: AI, 5G, and MEC (Multi-access Edge Computing). This interaction of related technologies is being implemented in the Skoltech 5G pilot zone. The first platform for testing MEC capabilities in Russia has also been deployed at the institute.

The discussion touched upon the topic of personnel shortages and the quality of employees in the field. "This is definitely a tough problem. We graduate about 140-150 specialists in the field of artificial intelligence a year and train them well. So good that they easily get jobs in Western companies, and salaries there are much higher than our seemingly very high salaries of IT specialists. We at Skoltech believe that young people should be shown perspectives in advance,

given the opportunity to develop their projects so we can stop this outflow of specialists.” Kuleshov noted that at the world's leading AI conferences, only 20 people from Russia publish publications on a regular basis, and these are the same people who should teach students. “We need to try to attract such specialists to Russia. It’s hard, but not impossible.”

Kuleshov also spoke at the SPIEF “New Growth” panel, which was moderated by VEB.RF chairman Igor Shuvalov, where he commented on the opportunities for developing Russian technologies and their export to world markets in the current situation, noting that in import substitution any goal less than 100 percent domestic is inadequate. “For example, if 99% I can do myself, and 1% I have to buy. What's the difference: I still don't have the product.” The rector of Skoltech noted that Russia cannot eliminate the huge gap that has arisen, for example, in microelectronics. The goal should not be to make all microelectronics, but instead to figure out which two or three critical elements cannot be purchased in friendly countries and therefore need to be made domestically. “There is no need to strive to produce everything ourselves—it is impossible,” Kuleshov said. “We need to highlight key areas.”

Shuvalov, for his part, noted that on the basis of Skoltech, first-class, world-class laboratories have been created that offer technologies, patents for industrial production and supply developments to international giants. The chairman of VEB.RF asked the rector of the institute about the prospects for technological developments. In response, Kuleshov emphasized that he hopes that the current conditions will change the state governance paradigm related to technological sovereignty.

Source: “Skoltech president: Russia cannot close huge gap in microelectronics” [Ректор Сколтеха: Россия не может ликвидировать огромное отставание в микроэлектронике], *Vremia Elektroniki*, June 21, 2022, <https://russianelectronics.ru/2022-06-21-skoltech/>.

DIGITAL DEVELOPMENT MINISTRY CALLS FOR INCREASING EXPORT OF TECH SOFTWARE TO FRIENDLY COUNTRIES

According to Russia’s Ministry of Digital Development, “It is urgently necessary to increase the export of Russian IT solutions and services to friendly countries to compensate for the loss of the foreign market, and it is impossible to do this without direct state support.” The effort should be organized in areas such as increasing financial support for the export of Russian IT solutions through grants to enter foreign markets, concessional lending to foreign customers for the purchase of Russian solutions, and insurance of receivables. Another area mentioned is the sales infrastructure of Russian IT solutions through the use of the system of trade missions as a point of attraction and support, and the emergence of “digital attachés” in them, attracting graduates of Russian universities and Russian citizens working in priority regions. It is also proposed to build work through the infrastructure of payments for the use of Russian IT solutions and the infrastructure of international interaction and cooperation in the field of open source and cybersecurity. “In order to implement these proposals, it is proposed to urgently intensify work through the Russian Export Center and create a permanent export support working group at the

Ministry of Digital Development,” the Ministry’s statement said. The countries of the Middle East, Southeast Asia, Latin America, and Africa should become priority areas for export development.

Source: “The Ministry of Digital Transformation urged to urgently increase the export of IT solutions to friendly countries” [Минцифры призвало срочно наращивать экспорт IT-решений в дружественные страны], *Izvestiya*, June 18, 2022, <https://iz.ru/1351973/2022-06-18/mintcifry-prizvalo-srochno-narashchivat-eksport-it-reshenii-v-druzhestvennye-strany>.

SMART ENGINES BRINGS DOCUMENT RECOGNITION BUSINESS TO ARMENIA

Smart Engines, the Russian developer of artificial intelligence technologies, has presented in Armenia its solution for using document recognition for customer identification. The system supports fast and high-quality recognition of passports, ID cards, driver’s licenses, and other documents and forms in English, Armenian, Russian, and 99 other languages. It can also recognize bank cards and QR codes. The technology includes security features such as face matching of document photos and selfies. Companies and integrators can use recognition in mobile applications, web solutions, and accounting systems.

Smart Engines technologies are already being used to recognize identity documents of Armenia and Russia in the Russian mobile application “IDpay—Money Transfers.” This application allows for convenient and fast money transfers in rubles from any Russian card to a card from any bank in Armenia. Citizens of Armenia and Russia can register in the IDpay application. To do this, they need to go through remote identification by taking a photo of a Russian passport or an Armenian ID card. The Smart ID Engine is used for document recognition, and the necessary data are then automatically entered into the fields of the registration form filled in the application. The recognition process is performed securely on the user’s mobile device without transferring images to external resources. The time to recognize a Russian passport or an Armenian ID card on a single frame on a smartphone is about 0.15 seconds. After a person has checked and confirmed their personal data in the IDpay application, they can transfer money by entering the data of a Russian bank card. Funds can be sent to IDBank clients by phone number and to clients of other Armenian banks by card number. To enter the data of the bank card from which the transfer is made or to which the transfer is made, recognition based on AI algorithms is also used. The user only needs to show the card to the smartphone camera. The accuracy of card number recognition using Smart Engines technology reaches 99.68 percent, and the operating speed is 0.035 seconds per frame.

Source: “Smart Engines brings AI recognition solutions to the Armenian market” [Smart Engines вывела на рынок Армении ИИ решения для распознавания], *CNews*, June 14, 2022, https://www.cnews.ru/news/line/2022-06-14_smart_engines_vyvela_na_rynok_armenii.

SPOTLIGHT

A NEW UNDERWATER DRONE FOR INSPECTING DANGEROUS SITES WILL BE DEVELOPED IN RUSSIA

In an interview given to Russia's daily *RIA Novosti*, Okeanos Research and Production Enterprise, which is one of Russia's main developers of unmanned and autonomous underwater vehicles, said that in three to four years, the company will launch mass production of an underwater glider drone for surveying radiation-hazardous objects, built for the Ministry of Emergency Situations. According to the developer, the first underwater drone prototypes were already tested during the Ministry of Emergency Situations exercises.

Okeanos notes that this underwater vehicle moves with the help of a wing system. Its torpedo-shaped body fills its ballast tank and is thus submerged in water. The wings prevent it from sinking and convert the vertical movement into a horizontal one. When the vehicle reaches a certain depth, the ballast tank is emptied and it rises—again not vertically, but at an angle. Okeanos can program it so that it makes five to 10 dives, and on one of the dives it can go to the surface to transmit the information. RIA notes that the Ministry of Emergency Situations has monitored potentially dangerous underwater objects for more than a decade, including radiation facilities in the Kara Sea (i.e., flooded reactor compartments and solid radioactive waste), as well as chemical weapons in the Baltic.

Okeanos noted that manned expeditions are usually launched to monitor these objects, but only once or twice a year; they are expensive to organize, and can be done only over a short period of time. In contrast, their underwater robot can stay submerged for at least a month. The glider can also conduct environmental surveys and can be used to search for minerals and hydrocarbons.

Source: "A new underwater drone for inspecting dangerous objects will be developed in Russia" [В России появится подводный беспилотник для обследования опасных объектов], RIA.ru, June 24, 2022, <https://ria.ru/20220624/bespilotnik-1797722040.html>.

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 July 2022: Michael Kofman, Research Program Director
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This work was performed under Federal Government Contract No. N00014-16-D-5003.

DISTRIBUTION STATEMENT A. Cleared for Public Release.

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DNL-2022-U-033039-Final

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