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LIETUVOS RESPUBLIKOS SEIMO KANCELIARIJOS
INFORMACIJOS IR KOMUNIKACIJOS DEPARTAMENTO
RYŠIŲ SU VISUOMENE SKYRIUS

Gedimino pr. 53, 01109 Vilnius Tel. (8 5) 239 6666
El. p.: rsv@lrs.lt; ikd@lrs.lt www.lrs.lt

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Lithuania ushers in a new era of defence with artificial intelligence integration

On 18 September 2024, the high-level conference on using Artificial Intelligence (AI) solutions in defence now and in the future was held at Mykolas Romeris University. It was a significant milestone in shaping Lithuania's future defence strategy. Organised by the Working Group on Artificial Intelligence (AI) of the Committee for the Future of the Seimas of the Republic of Lithuania, the Ministry of National Defence of the Republic of Lithuania, the INFOBALT Association, Mykolas Romeris University and the Artificial Intelligence Association of Lithuania, the event brought together influential representatives of science, business, politics and defence sector to discuss how advanced technologies can transform our country's defence sector.

In the opening speech of the conference, **Rasa Petrauskienė**, Chair of the Working Group on Artificial Intelligence (WG AI) of the Committee for the Future of the Seimas, underlined that, for the first time since the end of the cold war, security issues were once again at the centre of European and Lithuanian politics. 'Russia's invasion of Ukraine has starkly reminded us of the dangers posed by geopolitical instability and the real threats that can undermine peace and security, not only for individual nations but for entire regions,' Ms Petrauskienė said. She also highlighted the instability in the Middle East and the upcoming U.S. presidential election as critical factors that could significantly influence the global security landscape.

During the conference, practitioners and experts discussed how AI could fundamentally transform defence systems, enabling faster and more accurate threat identification and more efficient use of available resources. AI technologies enable the real-time analysis of vast data flows, facilitating more accurate risk prediction and enhancing the efficiency of military operations planning. **Rima Malakauskienė**, Chief Specialist at the National Security Group of the President of the Republic of Lithuania, conveyed congratulatory remarks by President Gitanas Nausėda. She stressed that AI could significantly strengthen the country's defence capabilities, especially when it came to finding solutions against a much stronger opponent, but also warned of the need for responsible assessment of the capabilities and limits of this technology. She stressed that the President of Lithuania welcomed the debate on the use of AI technologies in defence, considering that the development of intelligence-based products was the way forward for Lithuania. She also said that the President urged for making a careful analysis not only of the benefits, but also of the potential risks related to security and ethical issues, while at the same time keeping in mind the ultimate goal of safeguarding the nation.

Vincas Jurgutis, Chief Advisor of the Lithuanian Defence and Security Industries Association, noted that AI allowed saving human resources by analysing data and making the necessary decisions faster and more accurately. 'In addition to its applications in drones and automatic target recognition, AI is crucial for efficient logistics. This is a key factor in determining the success of the war, where AI can

help optimise supply chains and ensure their uninterrupted operation even in the most difficult conditions,' **Mr Jurgutis** said.

Alfredas Gudauskas, expert in geospatial technologies in defence at Hnit-Baltic and Major (Ret.) of the Lithuanian Armed Forces, stressed the importance of spatial data management in modern defence systems. According to him, geographic information systems (GIS) allow not only for accurate analysis of territories, but also for carrying out near-real-time monitoring of the battlefield and coordination of military operations. 'Spatial data allows producing faster and more accurate responses to changing threats, optimising the allocation of military resources and improving decision-making,' **Major (Ret.) Gudauskas** said. In his opinion, investment in these technologies can provide a strategic advantage not only for the defence sector, but also for crisis management.

Darius Antanaitis, military expert and Major (Ret.) of the Lithuanian Armed Forces stressed that the new generation autonomous systems have a huge potential to transform the defence sector. Their integration into defence systems can not only significantly increase the efficiency of operations, but also reduce human error, which is often decisive in complex and rapidly changing situations. **Maj. (Ret.) Antanaitis** pointed out that autonomous systems can operate independently of human intervention, which is especially important in missions where there is a high risk to the lives of soldiers. 'Autonomous technologies allow dangerous tasks to be performed remotely, thus saving lives and allowing the military to use its capabilities more efficiently,' **Maj. (Ret.) Antanaitis** said.

Given the growing role of digital technologies, the threat of cyberattacks is on the rise, which is why the conference placed particular emphasis on cybersecurity. **Daiva Tamulionienė**, Head of the Infrastructure Administration Division of the IT Department of the National Cyber Security Centre, emphasised that AI can play an essential role in strengthening cyber defence. She highlighted the potential of AI not only for the rapid detection of threats, but also for the development of preventive measures to protect against future risks. 'We need to fundamentally change our approach to cybersecurity and adopt proactive approaches that not only respond to threats, but also prevent them from occurring,' **Ms Tamulionienė** said.

Inga Beiliūnienė, Member of the Board of ILTE UAB, Head of the Operational Development Division and representative of the NATO Innovation Fund (NIF) to Lithuania, covered the financial opportunities for defence innovation. 'There are various tools for developing and integrating innovative defence technologies that Lithuania both can and must use,' **Ms Beiliūnienė** noted. She also highlighted the role of the NATO Innovation Fund in providing funding for new technologies and projects that can strengthen defence and ensure the country's security. **Ms Beiliūnienė** emphasised that it was necessary to actively participate in international initiatives and cooperate with allies in order to keep up with technological change. 'The financial opportunities are immense, but capitalising on them relies on our ability to effectively seize these opportunities,' she added.

Oleksandr Bornyakov, Deputy Minister of Digital Transformation of Ukraine on IT industry development, stressed that Ukraine was a living DI WAR Lab, testing weapons in real time and putting the latest AI solutions in defence into practice. 'Our experience shows that AI not only helps to organise defence more efficiently, but also opens up completely new opportunities for fighting,' he highlighted. He also noted that Ukraine, faced with the war, had a unique opportunity to test and improve AI technologies directly on the battlefield. This provided an opportunity to rapidly implement innovations and develop solutions that are tested in extreme conditions, namely, warfare.

Mr Bornyakov pointed out that Ukraine's example demonstrated how AI could not only respond to traditional threats, but also anticipate future challenges and help develop smarter defence strategies.

Prof. Dr Paulius Pakutinskas, Head of the Legal Tech Centre, Institute of Private Law of the School of Law under Mykolas Romeris University, emphasised the importance of international law regulation and the challenges related to the use of AI technologies in defence. He drew attention of the audience to the second **Summit on [Responsible AI in the Military Domain \(REAIM\)](#)** in Seoul. According to him, the Summit resulted in the publication of a blueprint for action for responsible use of AI in the military. Although this plan provided more practical guidance on the application of AI in military action, **Prof. Pakutinskas** noted that the document was not legally binding. 'International law still has a long way to go before legally binding norms regulating the use of AI in defence are in place,' he said, underlining the need to further improve the regulatory framework on AI in defence on a global scale.

In addition to discussing technological options, the participants also raised important ethical issues, such as how to balance the use of AI in defence with the protection of human rights. This aspect is becoming particularly relevant as AI technologies are increasingly integrated into military solutions and operations and their potential goes beyond efficiency gains, with risks of misuse or unethical use. **Peter Bilyk**, Head of the Technology and Investment, AI at *Juscutum* and Member of the Committee on the Development of Artificial Intelligence under the Ministry of Digital Transformation of Ukraine, stressed the need to find a balance between the use of AI in defence and the protection of fundamental human rights. According to him, it is important to ensure that AI deployment meets the highest safety standards and to concurrently assess the potential threats to human rights and freedoms. This is particularly significant because, despite the advantages of technology, its careless use can lead to serious consequences, including privacy breaches or even loss of life.

One of the most intriguing topics at the conference was the promise of quantum technologies in the defence sector. Regarded as a groundbreaking innovation, quantum technologies have the potential not only to revolutionize a wide range of industries but also to fundamentally transform the defence sector. **Prof. Dr Egidijus Anisimovas**, professor at the Faculty of Physics of Vilnius University and Member of the Board of the Lithuanian Quantum Technologies Association, pointed out that quantum technologies, like AI, were not a single discovery or solution, but rather a set of innovative methods and tools. These technologies have the potential not only to evolve our understanding of computational power, but also to expand opportunities in areas such as quantum sensing, computation, and communication. Quantum sensors can provide unparalleled accuracy in detecting various signals and objects, providing new opportunities for military action and intelligence.

Mantas Skaržinskas, Innovation Manager at the Innovation and Technology Office of the Center for Physical Sciences and Technology, emphasised in his speech that while AI opened huge opportunities, especially in the field of defence, the human factor remained critical in making final decisions. While AI technologies allow for automation and acceleration of decision-making processes, only humans are able to assess the importance of the decisions made, take note of ethical considerations and make sense of unexpected situations that may be misinterpreted by AI. **Mr Skaržinskas** stressed that as 'exchange of information changes form', the issue of trust and allocation of responsibilities between humans and AI becomes more and more pressing. This means that while AI can provide highly accurate predictions and recommendations for decisions, there is always a risk that algorithms may commit mistakes or make decisions based on insufficient data.

During the panel discussion, experts from various sectors explored the future of AI technologies and the challenges facing the defence sector, deliberating on the necessary steps for Lithuania to achieve a breakthrough in this area by 2040. A key issue was raised: what steps are still needed and what needs to be done to position the country as a leader in AI for defence technology? Participants in the discussion identified a number of key challenges holding back progress, ranging from insufficient funding and technological resources to a shortage of professionals, and stressed the need to update the legislation and the regulatory framework.

Erna Suslavičiūtė, Chair of the Board of the National Defence Industry Association (NDIA), stressed the need for Lithuania to further strengthen its cooperation with international defence organisations and industry representatives in order to ensure innovation and faster technological development. She also emphasised the necessity of encouraging domestic companies to engage more actively in international value chains, thereby potentially creating greater financing and technological opportunities.

Sigutė Stankevičiūtė, Head of Division at the ManuFuture Lab of the Innovation Agency and Head of the NATO DIANA Tech to Market Group, stressed the importance of integrating Lithuanian companies into international value chains. She suggested that closer cooperation and the creation of platforms to connect businesses could speed up the development of AI solutions in the country. **Ms Stankevičiūtė** also stressed the need to create sandboxes as dedicated environments for testing new technologies in real-world conditions in order to quickly and safely assess the feasibility and efficiency of their application in practice.

Romualdas Petkevičius, Chief Adviser of the Defence Resources Agency under the Ministry of National Defence, pointed out that despite its huge potential, AI was still not widely used in the defence sector logistics. One of the main obstacles, according to **Mr Petkevičius**, was the lack of information about the existing technological opportunities, an issue characteristic of both the public and private sectors, hampering wider adoption of AI solutions. He stressed that optimising logistics through AI could significantly improve defence efficiency, improving everything from resource allocation to the accuracy of operational management. In addition, AI could help predict potential supply chain problems and respond to them faster, which is crucial for military operations. According to **Mr Petkevičius**, achieving this goal requires more proactive communication with market participants regarding the available opportunities and greater cooperation between defence institutions and technology developers in order to maximize the potential of AI.

Col. Raimondas Simuntis, Director of the Military Institute of the Training and Doctrine Command of the Lithuanian Armed Forces, highlighted the problem of reliability when developing and proposing AI solutions for the defence sector. He pointed out that democracies operating under international rules risk confronting adversaries who disregard these rules altogether, leading to significant imbalances. **Col. Simuntis** also called for improving legal regulation in the field of public procurement in order to protect the national industry, reduce bureaucratic obstacles, and facilitate innovation in the defence sector. He also highlighted the issue of brain drain from the military, which posed a significant threat to the long-term sustainability of defence capabilities and the advancement of technological potential.

Raimondas Martinavičius, Advisor of the Innovation Policy Group at the Ministry of Economy and Innovation, stressed the need to take stock of Lithuania's existing know-how and potential improvements in the defence sector. In his words, without adequate digitalisation and access to big

data, Lithuania risked falling significantly behind countries like the US and China, potentially becoming a digital colony. **Mr Martinavičius** emphasised that access to big data was an essential element in the development and application of AI solutions. Therefore, Lithuania must strengthen these areas to remain competitive on the global stage.

In his closing speech at the conference, **Vidmantas Janulevičius**, President of the Lithuanian Confederation of Industrialists, highlighted the issue of the lack of funding, which hinders the development of innovation in Lithuania. He pointed out that the country had no adequate access to capital, and without sufficient investment, the development of technology and innovation was impossible. According to **Mr Janulevičius**, a long-term strategy is an imperative both in the defence sector and in other strategic areas to ensure sustainable support of innovation for decades to come. ‘Innovation does not work without investment,’ he stressed, emphasising that mere development of technological solutions without consistent funding would not produce the desired results. He urged public authorities and businesses to collaborate in ensuring a stable, long-term flow of investment aimed at sustainable development of innovation in defence, rather than prioritising short-term gains. Moreover, **Mr Janulevičius** noted that close cooperation with representatives of the defence industry was needed for both strengthening the country’s defence capabilities and for promoting overall economic growth and technological progress.

As a follow-up to the insights of the conference, the AI Working Group of the Seimas Committee for the Future is planning to initiate legislative amendments regarding the use of AI in the defence sector. ‘Our goal is to ensure that Lithuania takes the lead in deploying state-of-the-art AI solutions in defence, thus strengthening our national security and competitiveness on the international stage,’ said **Rasa Petrauskienė**, Head of the Working Group.

The conference was indicative of Lithuania’s determination to adapt actively to the changing geopolitical environment by investing in innovation and strengthening defence capabilities. There are plans to continue discussions and hold similar events in order to constantly update and develop Lithuania’s defence strategy, in view of the latest technological advancements. The event was an exemplary result of the close cooperation between the domains of science, business, politics and defence, promoting innovation and strengthening national security. The conference is expected to serve as a stimulus for further discussions and specific steps to integrate AI solutions into the national defence system and ensure the country’s preparedness for future challenges.

For more information, please contact:

Rasa Petrauskienė, Member of the Seimas Committee for the Future, Head of the Working Group on Artificial Intelligence, e-mail rasa.petrauskiene@lrs.lt

Miglė Paulauskė, Office of the Committee for the Future, tel. (+370 5 209 6894, e-mail migle.paulauske@lrs.lt