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# EDITORIAL

Dear readers,

In the current world of wars, terrorist threats, aggression, and dissatisfaction at all levels, but also in the period of Christmas holidays and the welcoming of the year 2024, we offer you this year's last edition of the magazine Review. It brings you several interesting interviews with important representatives of the state administration and industry, thereby fulfilling the main mission of the magazine, which is to facilitate better communication between the state and industry in the field of the defence and security community.

Just like last year, I must honestly say that the Publishing House MS Line and the editors of the Review greatly appreciate the fact that a significant part of Czech Defence and Security Industry companies used the magazine REVIEW for the Defence and Security Industry as well as our other media IDET NEWS and Security and Defence Technologies Catalogue of the Czech Republic for the presentation of their activities. The DSIA CR member base includes approximately 160 companies, 75 % of the companies, three quarters of the members, used the magazine Review for their presentation. It is an extraordinary event for us and I appreciate it very much.

The editors also participated in the sessions of the newly elected Presidium of the DSIA of the Czech Republic and organized an extraordinary meeting of the REVIEW Editorial Board to comment on the proposed publishing plan 2024 in the premises of the Air Service of the Police of the Czech Republic in Ruzyně.

On this occasion, I would like to especially thank the Representative Editorial Board, the Ministry of Foreign Affairs of the Czech Republic, the Ministry of Defence of the Czech Republic, the Ministry of the Interior of the Czech Republic, and their executive units - the Czech Armed Forces, the Police of the Czech Republic and the FRS of the Czech Republic, but also the Customs Administration of the Czech Republic, the Prison Service of the Czech Republic and the Administration of State Material Reserves of the Czech Republic for supporting our work and for active participation in the creation of the magazine. It is a unique community that is outstanding in its own way and original in the Czech Republic. Of course, big thanks go to the Presidium of the DSIA CR, the Brno Trade Fairs, the management of the FFF and NATO Days, as well as many others for the great cooperation in 2023.

We are honoured that even our Publishing House and editors could, at least to a small extent, contribute to the success of the Czech Defence and Security Industry in the form of more than twenty-five years of support and promotion at home and abroad. If you give us the opportunity in this direction, we will always be at your side.

I wish you sound health in the year 2024.



**Dipl. Eng. Miloš Soukup**  
editor in chief



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# Interview with an Ambassador at the Embassy in the USA

We published the last interview with Miloslav Stašek during his tenure as State Secretary of the Ministry of Foreign Affairs of the Czech Republic. From September 2022, he has represented the Czech Republic as an Ambassador at the Embassy in the USA. Considering that he is also a member of the Representative Editorial Board of the Review for the Defence and Security Industry, and this issue is prepared on the occasion of the Annual Meeting of the Editorial Board, we appreciate all the more that he has provided us with information related primarily to American-Czech cooperation.



**In cooperation with the Ministry of Defense of the Czech Republic, is the Czech Embassy preparing a mission, e.g. days of industrial cooperation or an open house? How would you rate those that have already been carried out? What results have you noticed within Czech-American collaboration?**

I mentioned the acquisition of the F-35, which is linked to the industrial cooperation between the United States and the Czech Republic. Czech companies have the opportunity to engage in unique programs, where they will have to expend maximum efforts to succeed in the company Lockheed Martin's projects. It is my belief that this is an exceptional opportunity to move the

Czech defense industry forward. Nowadays, we see the trend that companies from the defense industry are actually technology giants, which invest large amounts of money into software and technological development. For the Czech Republic, this collaboration presents the chance to rank alongside the best and thus to increase its competitive capability in the world. It is the ideal



time for Czech companies to rely more on investments into development and to shift the technological parameters of their products in the direction of current threats. This is related to sufficient preparedness in the framework of cyber-attacks and reckoning with the development of quantum computers and their hook up to countries' security structures. It will be important to prepare for the imminent pivotal role of artificial intelligence, not only in the defense industry, but practically in all sectors. Industrial Cooperation Days are excellent opportunities for Czech and American representatives from the defense industry to meet and discuss the current trends described above.

**What tools of possible support can the Czech defense and security industry expect from you? What has thus far been realized in terms of support for the involvement of the Czech defense and security industry in the United States?**

The Czech Embassy in Washington DC, just like other Czech embassies in the world, has the tools of economic diplomacy at its disposal. Among these tools, for example, we include projects for the support of economic diplomacy, the so called PROPED. The projects can take on different forms, such as workshops, matchmaking seminars, thematic forums, or participations at fairs. Thanks to the projects, Czech companies from the defense industry can gain valuable contacts and present their products to American partners.

Our diplomacy of course spreads the good name of the Czech Republic in many other ways. This happens, for example, when meeting with representatives of American businesses or representatives of federal and state institutions. It is important to get into the field of view for American partners and to continue to improve the overall good branding of the Czech Republic.

Recently, there have been several significant investments by the Czech defense industry in America. Among them, we can include the recent acquisition by the Czechoslovak Group, which bought ammunition production in Minnesota. Moreover, perhaps the acquisition of CZ Colt (before Česká Zbrojovka), which gained a traditional American manufacturer of handguns in the US state of Connecticut.

**What are the most frequent requests that you and your team receive from Czech industry representatives? What is**



**and what is not realistic? How would you evaluate the cooperation between the Czech American defense and security industries?**

In addition to the fore mentioned projects to support economic diplomacy, we are trying to find or facilitate meetings for Czech companies with American partners during their travels to the United States and give them information about the latest trends or upcoming projects in the defense industry. For example, in the US defense budget for the year 2023, over \$140 billion is allocated to research and development. In cooperation with American partners, Czech companies then have a chance to be involved in such projects.

**If you would like, would you like to add something for our readers?**

Since the time of the Cold War, the US defense industry has considerably transformed. Today, we are talking about a very closed community. In the 50s in the last century, there were more than 50 significant manufacturers of defense systems in the US. Currently, the defense industry in the United States is practically divided among six giant armament companies. However,

the term armament is not entirely accurate. For the most part, these are major technological companies that invest billions of US dollars into research and innovation. Recent world conflicts demonstrate that "iron" technology such as tanks and armored personnel carriers still play a key role. There is also a second part to this and those are the most modern technology. Modern armies increasingly rely on smaller defensive sets. The collection of relevant data, effective communication, and the navigation and use of drones have become an integral part of warfare in the 21st century. For Czech companies, it may be still be harder to keep up with the first category, which entails costly production and investment into production processes. However, in the second category, Czech companies can measure up to the best in the world. The defense industry in the Czech Republic should follow the model of the American one to collaborate more with universities and focus on investment in the field of research, which will have overlap into other sectors of the economy and have wide usage not only in wars but also primarily in time of peace.

*Your Excellency, thank you for the interview, Šárka Cook  
Photo: Embassy in USA*

# Interview with the Extraordinary and Plenipotentiary Ambassador of the Czech Republic in Serbia, Dipl. Eng. Tomáš Kuchta

Our first meeting with Dipl. Eng. Tomáš Kuchta took place at the Ministry of Foreign Affairs of the Czech Republic a few years ago. He gave us the first interview as the Deputy Minister of Defence, and now we approached Tomáš Kuchta in the position of the Ambassador Extraordinary and Plenipotentiary to Serbia.



**Your Excellency, could you inform our readers about your job description, and what do you consider to be the most exhausting, what is long-term and complicated task?**

The ambassador's task is to represent his country in the host country on the authority of the President and the Government, that is, in my case, to protect the interests of the Czech Republic during negotiations with the representatives of Serbia. This is a very general definition that covers many everyday activities. In addition to discussing bilateral and multilateral issues in the diplomatic field, the Ambassador should ensure the professional operation of the Embassy, which, in addition to consular agendas, also promotes the country in the fields of culture, trade, education, sports, support of the Czech

minority and many others. Considering the focus of your magazine, I can mention that during my tenure we organized many business missions, seminars, and business meetings for Czech companies, either on the occasion of visits by the President, the Prime Minister, or Ministers of the Czech Republic or as part of PROPED projects and other initiatives. I have always liked to be actively involved in the organization of projects to support economic diplomacy because I have been dealing with the issue practically my entire professional life. It is great to work in Belgrade in this respect because the word by the Embassy or the Ambassador still has its weight even in the business world. This is doubly true for the defence industry, here too the Embassy is already proving its services with positive results, we will return to this later in the interview. My

long-term task is to maintain the relations between the two countries at the best possible level, but this does not mean that we must always uncritically accept everything that happens here. For example, when it comes to the integration process, we try to convince our partners that with an open approach, we will help Serbia on its way to the EU more than if we only praise it. One of the long-term complicated tasks is also the problem with the Czech House. If this renovated five-story building with a theatre hall can be taken over in all respects from the Serbian government to the property of the Czech Republic by the time I leave, I will feel that I have contributed to a really concrete and tangible success during my time in Belgrade.

**In cooperation with the Ministry of Defence of the Czech Republic, does your Embassy prepare any missions, e.g. Industrial Cooperation Days? How do you evaluate those that have already been implemented, what results have you noticed in the framework of Czech-Serbian cooperation?**

Our goal for 2024 is to organize a presentation of Czech companies from the field of defence and security technologies in Belgrade during the second half of April this year. For this purpose, we submitted an application within the projects for the support of economic diplomacy (PROPED). We believe it will be accepted at the beginning of December 2023 at the latest, and we encourage Czech companies not to hesitate to contact the Commercial Department of



the Embassy if they are interested in an event of this nature.

The mentioned event is closely coordinated with the Ministry of Defence of the Czech Republic and the DSIA - both institutions have promised us their support and readiness to participate in the event. The Commercial Department of the Embassy is participating in the project together with the Department of the Defence Attaché. Of course, we are also working to ensure that the event is supported on a political level on both sides. By presenting companies in this field, we would follow up on a similar activity from 2019.

**What instruments of possible support can the Czech defence and security industry expect from you? What has been achieved so far regarding the involvement of the Czech defence and security industry in Serbia?**

The support options for the Czech defence and security industry are based on the standard support options established for Czech business entities. The first option is the participation of companies that are part of the Czech defence and security industry in diplomatic missions to Serbia. The second option is the implementation of Projects to support economic diplomacy, the so-called PROPED, focused on the Czech defence and security industry as a whole. As I mentioned, we are currently preparing such an activity for 2024 with the aim of comprehensive support for our defence and security industry. During its implementation, we will follow up on the previous event from 2019. Last but not least, this is the possibility of ad hoc support for Czech companies in the advanced stages of negotiations at the Ministry of Defence of Serbia. In such a case, within the Embassy, the Commercial Department cooperates closely with the Department of the Defence Attaché in order to participate and accompany representatives from the ranks of diplomats at these meetings.

As the war in Ukraine has shown, a well-functioning defence and security industry is a prerequisite for ensuring the security of any sovereign state. In this context, Serbia offers several possibilities for cooperation between companies from this sector, equally, as an

opportunity for a possible acquisition. Given the number of ongoing modernization projects in the Serbian Armed Forces, it may be interesting for Czech companies to participate not only in direct supplies but also in sub-supplies for Serbian producers. There is certainly room for the sale of final production in Serbia, but it is necessary to mention that the preferences of the Serbian side are mainly directed towards the domestic industry or the implementation of larger projects in the form of Joint Ventures. At the same time, Serbs are relatively tough negotiators, which is a reality we need to be prepared for in local conditions.

From the point of view of the results achieved so far, we are still rather at the beginning of the journey. This year, the area of military-technical cooperation, under which the support of the defence and security industry falls, was among the priorities of mutual bilateral cooperation between the Ministry of Defence of the Czech Republic and the Ministry of Defence of Serbia. At the same time, follow-up negotiations are planned, which should define the nature of such cooperation more closely. The above clearly proves that both parties see considerable scope for further development of this area and its deepening. On a concrete level, the acquisition of the company 14. Oktobar in Kruševac by the holding company Czechoslovak Group and the ongoing training of Serbian pilots at the Aviation Training Centre in Pardubice are currently tangible results. However, due to the prevailing interest of the Serbian side in deepening mutual cooperation, I believe that it is possible to implement other successful projects.

**What are the most frequent requests that Czech industry representatives make to you and the Embassy? What is and what is not actually real? How would you evaluate the cooperation between the Czech and Serbian defence and security industries?**

The most frequently asked questions are mostly of a very practical nature. They concern, on the one hand, the area of work contacts in the relevant Serbian companies, or the geopolitical level, which could hinder possible contacts

between Czech and Serbian companies. In the first area, i.e. the area of work contacts in Serbian companies, the Embassy is ready to help potential applicants and often does so. This category also includes possible accompaniment to negotiations with Serbian partners. State support in this area is irreplaceable and we are aware of that.

Czech companies have a lot of experience with territories where it is not possible to obtain the necessary licenses for the export of so-called "dual-use" goods. Looking at Serbia, many people wonder whether similar restrictions cannot apply to this country as well. In this area, it is necessary to monitor current geopolitical developments and be prepared to respond flexibly. The Embassy here is also willing to continue to assist Czech companies and provide the necessary consultations.

Czech and Serbian defence industry companies compete in many areas, but there are also many cases where they cooperate very well. This includes, for example, the purchase of components and cooperation on third-party markets. Some business cases are also under discussion, but for obvious reasons, I would not like to specify them in more detail. In any case, it can be stated that the potential for cooperation is great, there are many products on both sides that could be very interesting for the partner country.

**You can tell our readers anything if you want.**

I would like to express my thanks to the MS Line company and the editors of the Review for the Defence and Security Industry for providing objective and up-to-date information that contributes to the development of the Czech defence industry, whose importance for the security of our country is rising steeply. I greatly appreciate the fact that I can be a member of the Editorial Board of this magazine, the importance of which will certainly increase in the future.

*Your Excellency, thank you for the interview, Šárka Cook  
Photo: Embassy in Belgrade*

# The Military Office of the President of the Czech Republic has a new Chief Officer

With the new President of the Czech Republic, Petr Pavel, there comes a new Chief of his Military Office, Maj. Gen. Radek Hasala. In a short interview, he will present his career and professional growth, and important milestones in his career, and he will also very briefly mention the main tasks of the Military Office and the Castle Guard subordinate to it.



**Dear Mr. General, could you give our readers a brief overview of your career and professional growth?**

Yes, in 1992 I finished my studies at the Military Academy in Brno, and then I worked in the basic positions of the Czech Air Force, in the years 2004-2008 as the Commander of the Air Force Training Centre. After that, I was briefly the Deputy Commander of the Military Academy in Vyškov. Since 2009, I have held staff positions at the Support Forces Command, where I ended up as the Chief of Staff in 2012. Until 2018, I worked as the Head of the office of the NATO Military Committee Chairman in Brussels, who at that time was Army General Petr Pavel. After returning from a foreign workplace, I held the positions of the Commander of the Training Command - Military Academy, the Deputy Chief of the General Staff of the Czech Armed Forces - Inspector. During my service career, I was deployed in foreign operations as the Commander of the Czech Armed Forces Task Group in Afghanistan and as the Commander of the European EUTM mission in Mali. I supplemented my further professional education by attending

various professional and career courses, for example, the School of Squadron Officers at the American Maxwell Air Force Base, or the General Staff Course at the University of Defence.

**How would you summarize the most important milestones of your career?**

If I were to emphasize some milestones in my career, it would be especially my time in Brussels as the Head of the CMC Office and my deployment in Mali in the European Union mission. Working in Brussels brought me a lot of experience working in an international environment when I participated in various meetings at the highest level, such as the Military Committee meetings at the level of the Chiefs of the General Staff of the Alliance member states. Our office processed documents for the CMC for these meetings and ensured their organization. Another very valuable experience of mine was the EUTM mission. It was the second time that the Czech Republic commanded this mission, at a time when relations between the EU and Mali were not exactly the best and the security situation continued to deteriorate. As the Commander, I faced communication problems with the Malian side and complications in reorganizing the mission.

**Mr. General, and now briefly to the main tasks of the Military Office of the President of the Republic (MOPR).**

So I will answer very briefly, hopefully, there will be an opportunity to discuss this issue in more detail. MOPR fulfils two main roles – supporting the President of the Republic as the Commander-in-Chief of the Armed Forces and providing analytical and informational support to the President of the Republic in the area of securing the defence of the Czech Republic. In addition, the MOPR ensures the management and command of the Castle Guard.

**And speaking of the Castle Guard, what are its main tasks?**

The units of the Castle Guard are intended for the external guarding of the premises of Prague Castle, the grounds of the Lány Castle, and other buildings that are the temporary residences of the President of the Republic and his guests, to ensure their defence in crisis situations. Furthermore, they are intended to secure representative and protocol events. The Castle Guard consists of two guard battalions and other units such as the Castle Guard Band or the Escort and Protection Service Group, which ensures the motorcycle escorts of the President of the Czech Republic and the highest representatives of foreign states during official visits to the Czech Republic.

**Thank you, Mr. General, and in conclusion, I would like to ask, how are the official relations to the Ministry of Defence of the Czech Republic and the Czech Armed Forces?**

Again, Mr. Editor-in-Chief, a brief answer is sufficient. The MOPR acts as a liaison element of the President of the Republic with the leadership of the Ministry of Defence and the Command of the Czech Armed Forces. Various coordination meetings and the participation of MOPR members in regular sessions and meetings with these entities are used for this.

Mr. General, thank you for your helpfulness and for accepting the offer to become a new member of the Representative Editorial Board of our magazine.

In this position, the new Chief of the MOPR replaced Maj. Gen. Jan Kaše, who was a long-time member of the Representative Editorial Board of REVIEW.

*Thank you for the Interview, Miloš Soukup  
Photo: MOPR*



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# Detection of Chemical Toxic Substances and Chemical Warfare Agents

In the last issue, we informed you about our new device called GTD-S, which is in the standard production program and has been successfully installed in critical infrastructure facilities in Prague and the warehouse of chemical warfare agents in the new site of the Defense University in Hradec Králové. We have already received several contracts in the most demanding territories, f.e. United Arab Emirates and Saudi Arabia. Furthermore, current projects for the design and installation in buildings for the government offices in the Baltic countries continue.



Today's situation in the world is not flattering from the point of view of current ongoing conflicts, which indirectly support the growth and necessary readiness of the defence industry not only in the Czech Republic, but worldwide. Therefore, we are now actively negotiating with the army of the Federal Republic of Germany and the Swiss army, where there is interest in our unique product for the detection of liquid chemical warfare agents under the export name CALID-3. It is ease of use, reliability, reaction speed and its evaluation based on a colorimetric reaction, i.e. "coloring", are the attributes of this product, which, even thanks to its low price, has no competition compared to competing electronic detectors. We can also view this product as a benchmark for

another electronic detector, so that the determination of the detected substance is clear and intended for management. Thanks to our flexibility, we are able and willing to modify the design, size and possibly packaging to the customer's wishes according to their local technical needs and specifications. Other attributes are simplicity and reliability of using this product in combat conditions.

An integral part in the correct use of products is training or training with them, preferably in an environment that simulates a possible threat. This year, through the Population Protection Institute Lázně Bohdaneč, we organized repeated training for firefighters in Uganda, which was sponsored by the OPCW organization. Other important online training

sessions took place with the help of our local representative for units of Ukrainian soldiers who use our detectors (detector tubes, paper and strips) to use them correctly.

The news we have been preparing can be seen and consulted in person when we meet at the planned WDS trade fair in Riyadh in 2024, where we will be participating. A secondary option is to meet at the local Future Forces Forum in Prague or the nearby MSPO Kielce fair in Poland.

*Author: Aleš Orel*

*Photo: ORITEST*







# Interview with Tomáš Kopečný, Governmental Envoy for the Reconstruction of Ukraine



**Mr. Governmental Envoy, since the beginning of the year, you have identified the supply of critical energy infrastructure elements as the main priority for support to Ukraine. How is the situation developing?**

At the beginning of this year, i.e. in the winter period, it was indeed necessary to secure mainly supplies of various equipment in the energy sector, such as transformers and generators. This was, of course, a result of the targeted Russian attacks, which were only intended to break Ukraine's resolve to continue fighting. Through joint efforts, through international coordination and also through the immeasurable efforts of the Ukrainians, the Ukrainian energy sector was saved from collapse. After the last winter, some may have perceived the energy situation in Ukraine as not so pressing any longer. Nevertheless, Ukraine was intensively preparing with only one goal: to prevent last winter scenario and to ensure energy security. This winter is not yet over and Russian attacks are ongoing, but as of today we may honestly say, that this effort

has been successful. Presently, we identify that we are much better prepared for this winter than for the last one. However, the threat of targeted Russian attacks is now more than likely again. That is why, for example, the attention of the international community is turning once again to securing, for the most part, the security of the energy network and facilities.

**How do you assess the Czech Republic's activities in the area of reconstruction in Ukraine so far?**

We are still in the so-called fast recovery phase, so we are trying to implement projects that lead to the provision of basic human needs. Within the framework of the Czech programme for Ukraine, we are supplying Ukraine with equipment generating electricity and heat, water purifiers, various medical supplies or mobile shelters for refugees. At the same time, our doctors undertake missions to Ukrainian hospitals within the framework of The Ministry of the Interior's humanitarian programme MEDEVAC. In this way, they treat more patients than is the number of wounded Ukrainians which we can transport to the Czech Republic. Of course, we don't forget supporting the business sector. Although, this is linked to the planned full-scale reconstruction, which can be only facilitated after the fighting ends. I led several business missions to Ukraine in 2023, when we conducted business forums in Lviv, Kyiv and Dnipro. We were the first ever to venture to the east of the country with a business delegation. Also, our colleagues from the Ministry of Industry and Trade concentrate on creating an environment that will make it easier for Czech companies to enter the Ukrainian market. Last year, they themselves organised business missions and also, at

the Brno International Engineering Fair, they hosted the largest Ukrainian business delegation visiting a foreign country. Moreover, the mission was organized during the duration of the full-scale invasion..

**You mentioned the business mission to Ukraine in July. Have there been any other missions since then, or are there any other trips planned for the future?**

Of course, we consider the organisation of business missions to Ukraine to connect Czech companies with Ukrainian partners and create new business opportunities, to be very important. In 2023, I participated in 4 missions to Ukraine. Besides the business ones, there was the trip of President Petr Pavel and the mission of the National Security Advisor Tomas Pojar. Each of the business missions is always sector-focused allowing entrepreneurs to meet their Ukrainian counterparts and establish new cooperation in specific areas that are most important for Ukraine. The next business mission takes place in February 2024. Registration of attendees will be traditionally held in cooperation with the Confederation of Industry and Transport and the Czech Chamber of Commerce.

**What other support does the Czech Republic offer to the business sector?**

For the second half of 2023, we have focused our activities on the possibilities of financing projects of Czech companies in Ukraine through international financial institutions such as the World Bank, the European Investment Bank and the European Bank for Reconstruction and Development. We aim to provide representatives of Czech companies with specific information about the instruments





and current projects of the above-mentioned financial institutions so that Czech companies can apply for the announced international tenders and thus obtain financing for their projects. In September 2023, in cooperation with colleagues from the Ministry of Finance of the Czech Republic, we organised the first educational seminar with representatives of the World Bank. We are very pleased with the enormous interest from Czech companies. The first educational seminar was attended by over 100 business representatives, who had the opportunity to learn about the programmes and instruments of the World Bank and International Finance Corporation. The second seminar was held in November 2023, this time with representatives of the European Bank for Reconstruction and Development. The third seminar with representatives of the European Investment Bank took place in December 2023. Based on the feedback we received from all participants, I believe that the so-called first round of seminars has met everyone's expectations. In the future, we plan to repeat the seminars with the above-mentioned institutions and to focus on specific requirements and questions of representatives

of Czech companies to increase the success of Czech companies in international tenders.

**The issue of export insurance to Ukraine is often highlighted, what is the current situation?**

As far as financial support from the Czech Republic is concerned, I am very pleased that we have managed to allocate 340 million CZK to the Ukraine Fund within EGAP, which is meant for insuring exports to Ukraine. For the time being, this is a short-term insurance with a maturity of 6-12 months with a maximum amount of CZK 75 million per project. This amount is valid for 2023. If the allocation successfully draws down, the amount for 2024 will be increased to meet the demand of as many Czech companies as possible. At the same time, negotiations are underway with foreign state insurance companies that would be able to provide insurance in larger financial volumes for more fiscally demanding projects in cooperation with EGAP. We are talking here in particular about projects in the energy sector and larger investment

units, which require a longer implementation period and associate higher costs.

**If you could highlight one thing that has really been successful this year, what would it be?**

The Czech Republic is still, and we must not forget this, one of the main supporters of Ukraine in the military field. I must definitely mention the success we have achieved in negotiations with our partners in Denmark and the Netherlands, who have decided to implement their own military assistance in cooperation with the Czech Republic. The contracts that the partners have brought to the Czech Republic for Czech armourers not only represent essential assistance for the Ukrainian armed forces, but also bring foreign capital to the Czech Republic, increase employment and bring additional funds to the budget. This is a shining example of an international cooperation that is mutually beneficial for all parties involved.

*Author: Zbyněk Pepřený*

# Secure Your Digital Journey with Comprehensive end-to-end Cyber Security Offerings



The rapid development and application of Big Data, Internet of Things, Industrial Internet, Cloud Computing, Artificial Intelligence, and other new technologies are driving advancements in businesses' digital services, leading to a prosperous digital economy.

On the other hand, digital economies face an increasing number of cyber threats. According to the Threat Landscape 2023 report by the European Union Agency for Cybersecurity (Enisa), there are eight prime threat groups:

1. Ransomware: hackers seize control of someone's data and demand a ransom to restore access
2. Malware: software that harms a system
3. Social engineering threats: exploiting human error to gain access to informa-

tion or services

4. Threats against data: targeting sources of data to get unauthorized access and disclosure
5. Threats against availability - Denial of Service: attacks preventing users from accessing data or services
6. Threats against availability: threats to the availability of the internet
7. Information manipulation and interference
8. Supply-chain attacks: targeting the relationship between organizations and suppliers

In the context of these frequent cybersecurity incidents, businesses are increasingly aware of cybersecurity strategies. We are ready to build these strategies. OptoNet Communication, Member of

OPTOKON Group, offers a comprehensive information and cyber security solution for business partners, both on the partner's infrastructure and on its own solution called OptoNet Secure Cloud in our own data center, which meets Tier3 certification.

Within the activities of our highly physically secured VYSOCINA DATA CENTER, our company – OptoNet Communication – offers to companies a comprehensive supply chain vulnerability management during a product's life cycle. This is the important means of reducing risk in live networks and ensuring service continuity. We see cybersecurity as a never-ending process. Continuous education of employees can significantly reduce the possibilities of an attack. We offer our partners education in the field of cybersecurity and current threats.

Cybersecurity is comprehensive process that includes risk analysis, design of appropriate solutions covering user behavior, design of appropriate security for end stations, servers and networks, backup, and risk prevention. All of our solutions are designed for the partner to be ISO 27001 compliant.

Sources:

<https://www.enisa.europa.eu/publications/enisa-threat-landscape-2023>

*Mr. Antonín Přibyl*  
IT security analyst  
DATOVÉ CENTRUM VYSOČINA

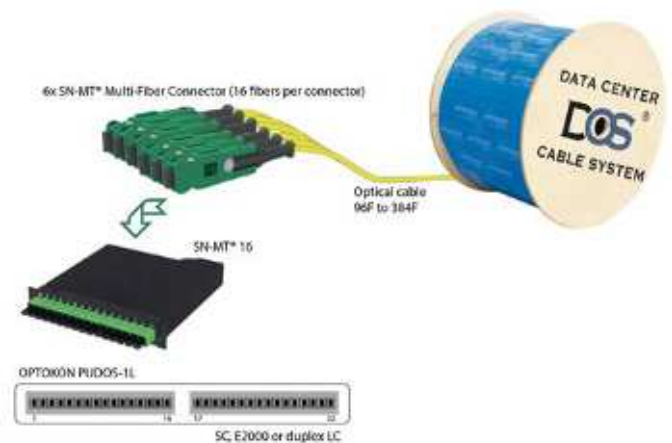
# Smart Security of Every Facility is Essential, Including Critical Infrastructure Cable Systems DOS – SN-MT16

Due to the ever-growing amount of data in global networks, Data Centres are becoming more and more important and their construction is progressing rapidly. This puts greater demands on the optical infrastructure. Optical cabling is essential for reliable linking of data centre devices like servers, switches, data stores, individual data centre nodes, the global data network and customers and users of data centre services. All of this must be achieved while maintaining cost-efficiency during both installation and operation of the data centre.

These requirements are addressed by the modular OPTOKON DOS cabling system. This system relies on factory-made modules, pre-terminated cables, and fan-out cassettes, which significantly reduce the amount of installation work required during construction and simplify troubleshooting during operation.

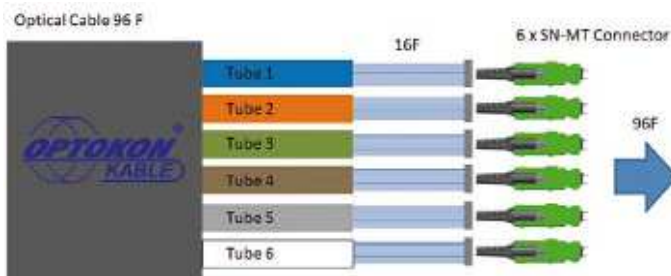
The DOS - SN-MT16 cabling system utilizes multi-fiber connector technology. The newly developed multi-fiber connectors SN-MT16 are specifically designed to terminate 16-fiber cables. Using trunk cables with these connectors eliminates the need for splicing in optical cabinets, expedites the installation process, and ensures system modularity. In essence, a cable design with 96 fibers was chosen, with 16 fibers housed in each of the 6 tubes. The cable meets the requirements for fire resistance according to the CPR EN13501-6 standard and maintains its functionality during a fire according to EN60331 and EN60332.

The use of multi-fiber connectors allows for a significant increase in the capacity of ODF (Optical Distribution Frame), such as more than 1500 optical fibers in a 1 RU (Rack Unit) ODF when utilizing SN-MT16 technology.



The universal PUDOS ODF (Optical Distribution Frame) is designed for terminating preterminated SN-MT cables. This can be done in two ways: either by direct termination of the multifiber SN-MT to the front panel of the ODF. In this case, fanout cables are used to connect active devices, branching out the multi-fiber SN-MT connector into the respective single or duplex connectors, primarily of the LC type.

The second option is to use fanout cassettes (CAPL). SN-MT is connected to the rear panel of this cassette, and the internal fan-out then splits the multifiber into single or duplex connectors on the front panel of the cassette. The modular PUDOS ODF system thus allows for configuration according to the operator's requirements.



*Dipl. Eng. Pavel Pospíchal  
Technical Director  
OPTOKON, a.s.*



# Will PBS Velka Bites be a Global Leader in the Production of Small Turbojet Engines?

The year 2023 was for the Czech company PBS Velka Bites, which deals with the development and production of turbine engines and auxiliary power units, a significant year in the field of expanding applications in the Defence Sector. In 2023, the company entered into strategic partnerships with the American giants Lockheed Martin and Pratt & Whitney. It also focused on the development of its turbojet engines, which until now have been used mainly in specific types of unmanned aerial vehicles. However, the demand for reliable turbojet engines for one-time defence applications has grown enormously in the last year, and PBS was ready to take advantage of this opportunity.





The success of PBS brand turbojet engines on the world markets is due to several factors. One of them is proven quality, which is based on the company's 50 years of experience in the production of aircraft turbines, of which 20 years directly in the development and production of turbojet engines. The investment in research and development pays off, especially concerning the current expanding portfolio of the engine production, which is not offered by any other world manufacturer in this performance category.

PBS supplies the world markets with four basic performance ranges of turbojet engines, covering thrust categories from 400 to 1,500 Newton. In 2024, the company plans to expand the offer by two more engines with a thrust of 2,300 and 3,500 Newton. In addition, individual types of engines are offered in a wide range of modifications, which allows customers to choose an engine exactly according to their needs.

The newest modification of the currently most powerful turbojet engine PBS TJ150 with a thrust of 1,500 Newton is the possibility of starting in flight. This modification significantly expands the possibility of use in a wide range of

applications, including unmanned aerial vehicles launched from the undercarriage of another aircraft. The engine is now able to start up to a speed of Mach 0.6, which is very demanding, especially in terms of air pressure. In addition, the start-up must take place within 7 seconds, which is made possible by the newly developed pyro-ignition system. The engine is capable of reaching the speed of up to Mach 0.9, which is just below the speed of sound. However, the speed is limited by the design and overall parameters of the given application.

In mid-2024, at the Farnborough Airshow, PBS plans to officially launch a new turbojet engine called PBS TJ200 to the world market. PBS TJ200 will have a completely new design, which will make it possible to achieve a thrust of 2,300 Newton. This is 35 % more than the current top-performing model PBS TJ150. At the same time, the diameter of the new engine will be 10 % smaller, which will enable the installation of these engines in narrower and thus more aerodynamically efficient fuselages.

PBS registers a growing demand from allied partners, now also from Ukraine.

Moreover, cooperation with Ukrainian entities is a two-way cooperation. In 2023, the top managers of PBS signed a memorandum of cooperation with the management of the Ukrainian company Ivchenko Progress. The two companies agreed to cooperate in the production and distribution of a newly developed turbojet engine with a thrust of 3,400 Newton. If everything goes well, the two companies should start joint production and subsequent distribution already in 2024. For PBS, this means to double the performance spectrum of its turbojet engines during 2024, which will significantly increase the competitiveness of the Czech exporter on the world markets. PBS thus expects a significant increase in production in this segment.

Milan Macholán, CEO of the company, emphasizes: "We fully understand the current strong demand of the free democratic world for security and defence solutions. We are also adapting our production to this, which will double in the near future. This will significantly strengthen our presence, especially on our key markets, which are the United States and Europe. Engines from our production are also used in deliveries to Ukraine."



However, the company also expects to grow in other segments of its production, especially in the area of development and production of auxiliary power units (APU) for aircraft, helicopters, and unmanned aerial vehicles, where PBS is one of only four companies in the world with civil certification by the European Aviation Safety Agency - EASA.

In 2023, the development of a new auxiliary power unit called PBS APU SPARK40 was successfully completed. This APU was officially presented for the first time at the Paris Air Show 2023. The launch ceremony was attended by the Minister of Industry and Trade of the Czech Republic, Mr. Jozef Síkela, and the Director General of the Industrial Cooperation Section of the Ministry of Defence of the Czech Republic, Mrs. Radka Konderlová.

The new APU brings a significant improvement in technical parameters compared to the previous range of auxiliary power units, mainly in doubling the electrical power and further expanding the flight envelope. SPARK40 has already succeeded in a challenging tender in a new medium helicopter development project for one of the NATO member countries.

For PBS, 2023 was also a year to establish strategic partnerships with key American manufacturers. By signing a Memorandum of Cooperation with Lockheed Martin, PBS took the first step on the path of production cooperation within the project of supplying

F-35 aircraft to the Czech Air Force. The details of this prestigious collaboration are currently being fine-tuned. With Pratt & Whitney, with whom the company also signed a Memorandum of Cooperation, the primary goal of the project is to use the unique capabilities and expertise of both companies to identify new trends in the development of auxiliary power units and define the architecture of the next generation of APUs. "It confirms that we really belong among the world leaders in the aviation industry; otherwise, companies with such well-known names would not discuss cooperation with us," says Milan Macholán, CEO of PBS Velka Bites. Despite the ongoing successes in the Defence Sector, they also remain de-

icated to civilian programs at PBS Velka Bites. One of the latest projects is the application of PBS TS100 turboshaft engines for the Swedish Thunder Wasp large firefighting drone project. Currently, the development of a single-engine version, which will have a load capacity of approx. 300 kg, is being completed. However, the plan also includes a two-engine variant that should transport up to 1,000 kg, which is truly globally unique in the given category of transport UAVs.

Many countries have already shown interest in this drone, and PBS should participate in its distribution. Another successful civilian project is the Italian two-seat helicopter Zephyr, which is also powered by a "made in PBS" turboshaft engine. In this case, it was possible to combine an exceptional Italian design, an unusual turbine engine for this category, which significantly exceeds the usual piston engines in terms of performance, and a rescue parachute system.

For PBS Velka Bites, the start of cooperation with key players in the production of aerospace and defence technologies and the success of its own development programs are fundamental recognition of its unique capabilities and knowledge in the field of turbine units. These achievements represent a ticket to the top league of world aerospace and defence production and a significant strengthening of the position of the PBS brand on the world market.





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CONTACT PERSON: Ing. Miroslav Joch, MBA company owner and representative  
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# Pair of Light Armoured Vehicles



## S-LOV-CBRN and LOV-CBRN II



S-LOV-CBRN and LOV-CBRN II – pairs of light armoured vehicles for CBRN reconnaissance teams

**The S-LOV-CBRN kit consists of the S-LOV-CBRN light armoured vehicle and the P-LOV-CBRN trailer. It is intended to fulfil the tasks of radiation, chemical, and biological reconnaissance units, especially in the area of:**

- Mobile CBRN reconnaissance
- Reconnaissance of contaminated areas
- Long-term monitoring of the CBRN situation at the observatory

It can perform tasks independently or in cooperation with the LOV-CBRN II paired vehicle. Through the field command and control system, the vehicle can be controlled from the command post, or the computing and analysis facility (VAP) site, with which it can also share current information about the combat situation, the current CBRN situation, and warning messages, or signals.

### Designation and basic data

- Conducting CBRN reconnaissance and monitoring, including sampling and transport of samples in the operations of the Czech Armed Forces abroad and in the Czech Republic, e.g. for the benefit of the Integrated Rescue System of the Czech Republic, through an automa-

ted CBRN superstructure with integrated CBRN situation detection systems

- Compatibility with applied software of the land forces command and control system (APV IS VŘ PozS AČR) in field command and control networks
- Vehicles designed on IVECO LMV M65E19 VM 4x4 chassis
- The crew of each vehicle consists of 2 members of the radiation and chemical reconnaissance unit

### S-LOV-CBRN vehicle

- Designed to perform tasks independently or in cooperation with the LOV-CBRN II vehicle

- Equipped with detection means for automated reconnaissance and monitoring of CBRN situation
- Integrated a subsystem for the detection of chemical toxic substances, a subsystem for monitoring radiation situations, and a detector of biological aerosols
- Contains a reconnaissance robotic subsystem with a robot for remote CBRN as well as visual and acoustic reconnaissance of the immediate surroundings, with a control station, without the need for the crew to get out of the vehicle
- Integrated an on-board demarcation device with a control unit and demarcation heads for demarcation of contaminated areas by signal (demarcation) flags
- Contains a device for warning of the near surrounding with a control unit and a signal flare exchanger
- Enables the automatic collection of CBRN information from the on-board detection means of the chemical superstructure into the on-board information system (PIS)
- The P-LOV-CBRN trailer contains a mobile autonomous monitoring module for CBRN monitoring of a remote location, a mobile meteorological station, a mobile manual demarcation kit, and other means to support the operation of the military unit
- The trailer ensures the vehicle's power supply to the observatory point from



S-LOV-CBRN vehicle with P-LOV-CBRN trailer





LOV-CBRN II vehicle - interior equipment

the power station or the 230 V electrical network; alternatively, it ensures the operation of the autonomous mobile monitoring module without the S-LOV-CBRN vehicle

**LOV-CBRN II vehicle**

- Complements the capabilities of the S-LOV-CBRN vehicle
- Enables, among others, mobile and pedestrian CBRN reconnaissance through a combined automated detection subsystem and reporting to the PIS
- It includes a kit for collection, short-term storage, and transport of liquid and solid samples containing radioactive substances, militarily significant chemical and biological substances
- It is equipped with decontamination means for the benefit of the vehicle crews
- Allows the integration of a tactical jammer to protect against the detonation of booby-trap systems

**Reconnaissance robotic subsystem**

- Designed for remote CBRN, visual and acoustic reconnaissance of the immediate surroundings, it is controlled from the vehicle from the vehicle commander's position and recharged when stored in its transport space
- The reconnaissance robot carries a beta and gamma radiation detector, an automatic chemical detector, an oxygen sensor, and an atmosphere sampling device
- The robot is equipped with three cameras (with the possibility of illumination using one of them) and a thermal imaging camera, GPS, and a system for acoustic monitoring of the surroundings near the robot

**Crew protection and safety features**

- Comprehensive protection of the crews of both vehicles against the effects of firerearms, mines, and booby-trap explosive

systems consists of crew ballistic protection at level 2 and mine protection at level 2a (according to STANAG 4569)

- The combined subsystem of protection against the effects of toxic and radioactive substances includes a pressurized cabin with a filter-ventilation device enabling operation in the vehicle without wearing protective masks and an emergency clean air supply system in case of internal contamination of the crew cabin
- The fire protection of each vehicle is provided by a remote-controlled digital combined weapon station with a control unit, a commander's control desk, and its own weapon station
- The camera subsystem enables checking the space behind the vehicle and facilitates the handling of the reconnaissance robot
- Vehicle camouflage in the vegetation season is provided by a mobile camouflage kit, including camouflage of the mobile monitoring module and internal darkening of the cabin windows

- The coating system complies with ČOS 801001 (Coating systems for ground military equipment with climatic and corrosion resistance) and the relevant ČSN standards for individual colour shades

**Crew support**

- On-board information system with application software supports all crew activities, receives information from on-board detection systems and subsystems, and thus provides a detailed overview of the current tactical and CBRN situation
- The navigation orientation subsystem is integrated
- The vehicles are equipped with a vehicle radio station for phonic and data communication, an internal speech device with a headset, personal radio stations, and a communication server
- In the S-LOV-CBRN vehicle, the internal intercom is connected to the reconnaissance robot subsystem control unit to transmit sound from the reconnaissance robot
- The on-board meteorological station with a control unit and a meteorological sensor enables the measurement of basic meteorological parameters of the ground layer of the atmosphere (wind speed and direction, air humidity, air pressure, air temperature) without the need for the crew to get out of the vehicle.

The largest order in the company's history The Military Research Institute, s.e. recently successfully completed the implementation of this largest contract in the company's history. It delivered 40 pairs of S-LOV-CBRN and LOV-CBRN II light ar-



Robotic system for CBRN reconnaissance



Photo from the handover of the last pair of S-LOV-CBRN and LOV-CBRN II vehicles in Štěpánov

moured vehicles to chemical specialists and selected units of the Czech Armed Forces.

Several subcontractors from the Czech Republic and abroad participated in the actual implementation of the contract. The largest share in this successful contract belongs to the following companies: Military Technical Institute, s.e., Praga-Export, s.r.o., Smiths Detection Inc., LTR, s.r.o., Interlink CS, s.r.o., Bruker Daltronik

GmbH, B.O.I.S. Filtry, s.r.o., NIDES, s.r.o., PROENGIN, URC Systems, s.r.o., MESIT Aerospace, s.r.o., NUVA, a.s., DRAGER CZ, s.r.o., Delinfo, s.r.o., Cristanini, SpA, Alhborn CZ, s.r.o.

On July 25<sup>th</sup> 2023, the state-owned company VVÚ Brno handed over the last few vehicles to the Czech Armed Forces.

The handover took place in Štěpánov - the Technical Services Material Security

Centre, which provides logistical support for military facilities and departments of the Ministry of Defence and from where this technology is further distributed to users.

*Author: Dipl. Eng. Petr Navrátil, and Dipl. Eng. Josef Hrnčířik  
Photo: VVÚ*

## Gypsum Board Partitions with Enhanced Mechanical Resistance

Since 2021, STRIX Chomutov, a.s. has been collaborating with KNAUF Praha, a.s., PREFA Kompozity, a.s., and the Faculty of Civil Engineering at the Czech Technical University in Prague on the project TA ČR Trend No. FW03010271 "Drywalls with high resistance to mechanical damage." The project incorporates ballistic high-strength glass laminate composite boards, KNAUF Praha systems, and steel structures from STRIX Chomutov, allowing for the anchoring of partitions and their further fortification, e.g., through coupling or the use of steel meshes employed in rock remediation, slope stabilization, etc.

The partitions are designed to withstand extreme mechanical stresses during normal operation, as well as events such as pressure vessel explosions, gunfire, im-



proved explosive systems, etc. Within the project, three partition systems have been developed: a lightweight variant, a medium 2D variant, and a heavy 3D variant. These systems meet general technical parameters and additional parameters of resistance ranging from RC3 to RC4 against intrusion according to ČSN EN 1627 and ČSN EN 1630+A1, as well

as ballistic resistance classes FB4 to FB7 according to ČSN EN 1522/1523.

The design of each variant drew upon the collective experiences of involved parties, including collaboration with the Fire Rescue Service of the Czech Republic. Initial static calculations and partial tests were conducted to propose an optimal variant, subsequently tested at full scale according to relevant standards or sug-

gested experimental methods. Multiple tests, both indoors and outdoors, were conducted based on proposed scenarios to predict behavior under extreme mechanical loads. All experiments were monitored using cameras and cameras and subsequently evaluated.

*Pavel Tesárek, Jan Pohůnek, Zdeněk Prošek*



# NCS College 23 Trained on AURA Codification Software

Already the 6<sup>th</sup> edition of the international codification courses, organised by the University of Defence (UNOB) and the National Codification Bureau (NCB) of the Czech Republic, with the all-round support of the Brno-based company AURA, took place in August and September 2023 in Brno. This time under the name "NCS College together 23", expressing the joint effort of students, lecturers, moderators, program and IT managers and others who participated in the preparation of logisticians and codifiers involved in national and international codification processes within the NATO Codification System.

## From Europe, Asia and America

For three weeks, the University of Defence in Brno became the "home" for students and lecturers from eleven countries in Europe, Asia and America. After successful completion of the Course for Managers and Logisticians and the Course for Codifiers, the graduates of NCS College together 23 received their certified diplomas from the Rector of UNOB – Brigadier General Prof. Zuzana Kročová. For the first time, representatives of the Czech Ministry of Defence, Property Section and Logistics Section, participated in the course and significantly contributed to the quality of topics from the position of students.



## Training on MC CATALOGUE

Participants, especially of the Course for Codifiers, greatly appreciated the opportunity to train on real codification software. Traditionally, this software was MC CATALOGUE, an information system for the support of codification developed by AURA, which is currently the most widely used codification software worldwide, utilised in more than 20 countries across five continents. The NCS College in Brno has one indisputable and irreplaceable advantage. After completing the course, students can codify items of supply like weapons and combat equipment on real codification software. They also know how to create the NATO Stock Number (NSN), which is an irreplaceable identifier for items of codified materiel. One of the main goals of training at NCS College in Brno is that the students acquire knowledge and practical skills in codification processes within the context of a real codification in-

formation system. Since 2012, nearly 200 logisticians and codifiers have completed international codification courses at the Czech University of Defence.

## NCS College is managed and trained by renowned experts

A broad range of students included directors of foreign NCBs, senior officers, including a brigadier general, and representatives of commercial companies. There was an elite representation of lecturers and moderators such as the former Chairman of the Group of National Directors on Codification AC/135, George Bond, the U.S. representative for codification issues at NSPA and AC/135, Steven Arnett (2012–2015), and other former and current NCB directors and teachers from the University of Defence. In addition to AURA, the commercial sector was traditionally represented by the British company Allan Webb.

The training also included guided tours to the Centre for the Provision of Material for Rear Services in Brno and Centre for the Provision of Material for Technical Services in Štěpánov. More than in the past, NCS Co-

lege made use of Publi – a platform for controlled distribution of sensitive documents by the company Code Creator, a close partner of AURA.

## Not just school and training

Participants of the course enjoyed a rich accompanying program, including the opening evening meeting, guided tours of Brno or sports competitions. The visit to the capital city of Prague with an original cruise and refreshments on the Vltava River met with an enthusiastic response. The Codification Quiz, organised by AURA lecturers, received particularly positive feedback and, as we know, found application in foreign NCBs as well.

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A great satisfaction for the high-quality and systematic effort of all participants of the "NCS College together 23", including a number of AURA staff, was the final evaluation from students, which in total almost reached the highest possible rating on a scale of 1-5, specifically 1.15. "Perfect organisation, excellent training and exercises on real software, diverse program and demand for more similar codification courses in Brno" – this was the verbal and written feedback from students during and after NCS College 2023. Many of them, as they said, will recommend the Brno codification courses not only to their colleagues in national codification bureaus, but also to civilian companies involved in codification and their foreign partners.

By Antonín Svěrák





# NATO Codification System and NSN as Item of Supply Identifier

You know what NSN is and what it is good for? You can find the answer in this article where you can also learn some basic information about the NATO Codification System and especially about the benefits it brings to military logistics.

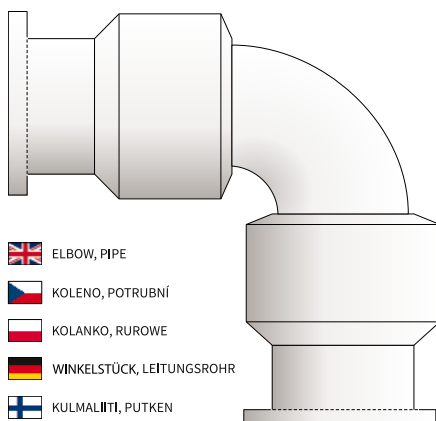
## NATO Codification System

NSN stands for the NATO Stock Number. It is a thirteen-digit number used by countries participating in the NATO Codification System, which uniquely identifies so-called items of supply. The NATO Codification System, abbreviated as NCS, is a comprehensive set of international agreements, standards and procedures that create a single, internationally understandable system (language) for the identification, classification and numbering of items of supply, used by NATO armed forces, but also by some non-NATO countries – users of the NCS.

In the context of NCS, the term "item of supply" refers to an item of material, equipment, ammunition, etc., which is defined by its properties, so called characteristics, relevant to the user of the item, regardless of the manufacturer of the item.

To make the NCS intelligible for its users, the logisticians, each NSN is assigned a comprehensible name. In addition to English, each member country can translate the name into their own language to make it understandable and prevent mistakes. For example, the item with NSN 4730-16-005-6994 with the name "ELBOW, PIPE" is listed as

**NSN 4730-16-005-6994**



"KOLENO, POTRUBNÍ" in the Czech Republic, "WINKELSTUECK, LEITUNGSROHR" in Germany, "KOLANKO, RUROWE" in Poland, and "KULMALIITI, PUTKEN" in Finland. It is clear from the example that it is not a matter of mere translation, but of finding a technical equivalent.

This is one of the reasons why NCS is often referred to as the common language of logistics.

## Benefits of the NATO Codification System and the use of NSN

A significant benefit is interoperability, the use of a common language of logistics. NCS facilitates seamless integration and cooperation in the area of material support for joint operations and coalition missions.

Equally important is the acquisition of data about purchased items of supply from their manufacturers and suppliers. In countries participating in the NCS, the Ministry of Defence always requests this data from their suppliers and attaches it to the corresponding NSN. Thus, an item introduced in the NCS contains not only the NSN but also information relevant to the users of the item and to its purchase. For each NSN, the manufacturer or supplier is specified, and if there are more than one, all of them are listed. This makes it easy for the acquisition department to find out who supplies a particular item, and it is easy to find a replacement for an item that is, for example, no longer available from the original supplier.

## "Principle of national responsibility" and material identification using NSNs

When sharing data between countries participating in the NCS, the "principle of national responsibility" is applied, according to which the country of the manufacturer is responsible for the item codification. All other coun-

tries that register as users of the item receive codification data from the country that performed the codification, including updates that occur during the item's life cycle.

The unambiguous identification of material using NSNs is important for both material inventory and accounting purposes. Codifying items of supply based on their functional characteristics before assigning NSNs ensures that there are no duplications and multiplications in their identification. Therefore, it cannot happen that the same item is labelled with different identifiers in various parts of the organisation, which can lead to unnecessary wastage of money during procurement. Another negative consequence of ambiguous material labelling is unnecessarily high inventories, which also increase costs.

It is clear that the introduction of NCS and the consistent use of NSNs not only increase interoperability but also bring significant reductions in financial and material costs. As logistics in the armed forces consumes a significant part of the budget, substantial savings can be achieved by its more efficient management.

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Not without reason is the NATO Codification System often referred to as the DNA of logistics. Its active use in military logistics yields numerous benefits. This is evidenced, among other things, by the fact that a number of non-NATO member countries, currently 32 states, have decided to voluntarily implement the NCS because they have evaluated it as beneficial.

By Zdeněk Buřival

# I Believe in Cooperation in the Field of Technological Development with the Defence and Security Industry of the Czech Republic

We are pleased that the Director General of the General Directorate of Customs, Brig. Gen. Marek Šimandl, MPA accepted membership in the Representative Editorial Board of the quarterly Review for the Defence and Security Industry and after more than a year of working in his new position, he gave us an interesting interview.



**Dear Mr. Director General, you have taken up the office at a challenging time. You have been in the position of Director General for more than a year. How would you evaluate your performance so far?**

I have been working in the security segment of the Czech State Administration since 1991. During my career, I went through two Intelligence Services, I worked in the National Security Authority and I am one of the founders of the National Office for Cyber and Information Security. I became the Director General a year and four months ago, and compared to what I had experienced up to that time, I met a far greater percentage of devoted people in the Customs Administration. With people who really care a lot that everything works here as well as possible. The Customs Administration is distinguished by being a knowledge-based security force unit. Knowledge-based in the sense that a large part of the positions here require

high-level knowledge, especially concerning tax and customs issues. The functions of Customs Administration can be divided into two parts, security and administrative. They are related to the customs and tax agenda and other competencies are associated with it. This is for example surveillance, search, gambling control, and things related to it. We also have our own police force unit that works under the Rules of Criminal Procedure. Currently, the Customs Administration has less than fifty competencies, some of which were originally the responsibility of the Ministry. Such a large number of activities slows down the efficiency of our operations, which is why we incorporated their narrowing into the transformation plan.

**The Customs Administration before transformation: What changes are being prepared in the near future in the Customs Administration? We can hear about digitization, but what about changing equipment and accessories, for example? Aren't there opportunities for companies of the Defence and Security Industry?**

I consider the main task of the transformation to make the activities of the Customs Administration more efficient. Shortly after I became familiar with the basic functioning of the Customs Administration, which means in October last year, I set up a working group that mapped the structure and activities of the Customs Administration and suggested some solutions to streamline operations. The solution lies in several milestones that solve the change in structure, but also in the reassessment of competencies that we are currently doing. To date, the Customs Offices copy the re-

gional representative establishment, i.e. 15 Customs Offices, each in a regional city and one at Václav Havel Prague Airport. We also have regional workplaces in selected Czech and Moravian cities. The first milestone is the reduction of the number of territorial workplaces. Starting next year, we will reduce it by six ones. A related process - the reduction of Customs Offices will require larger structural legislative changes, i.e. a change in the law. Our goal is to create only six jurisdiction Customs Offices out of the fifteen Customs Offices listed. Another milestone is the definition and reduction of the competencies of the Customs Administration. Negotiations with the departments are currently taking place.

In the leadership of the working groups and the entire Management Committee, there are people who have been in the Customs Administration for years and have a good grasp of its issues. I was pleasantly delighted that when I came up with this vision of simplification and efficiency, I found many people here in the management of the office who very quickly identified with it and came up with their own ideas. The transformation will allow us to focus on our main areas of interest and to do them better in the future.

**I will return to the original question – aren't there opportunities for companies of the Defence and Security Industry? For example, regarding the renewal of the Customs Administration equipment?**

I would be very happy to have them; there would certainly be plenty of space here. I believe that in a few years, also thanks to digitization, more extensive cooperation will be possible. At the moment, however, we are in such a financial position that we will be happy

for some sustainability in the next few years. Primarily, we have to think about how to finance high digitization, which is financially demanding and we still have to move it forward in relation to European structures. On the other hand, thanks to my work at the National Office for Cyber and Information Security and knowledge from other departments, I can confirm that the Customs Administration is at the top when it comes to IT.

**The Customs Administration has recently participated in many events of the Security Forces, such as NATO DAYS or IDET, ISET and PYROS Trade Fairs. How do you evaluate the current performance of the Customs Administration at these events and where will we be able to see the Customs Administration to present itself in the near future? Are there any ongoing projects to raise awareness of the functioning of this institution in the public space or in the Defence and Security Industry?**

It is my goal to make the Customs Administration more visible. It is related, among other things, to the fact that, from my point of view, it is a bit of a "Cinderella" among the Security Forces, and I think undeservedly because there are really a lot of interesting things happening here. We have collected an average of 175 billion CZK annually on consumption taxes and customs duties over the past 5 years, and our contribution to the state budget is approximately 12 % each year. The easiest way to ensure greater awareness is, of course, to educate politi-



cians. We have increased the frequency of press conferences. In the spring, for the first time in history, we managed to arrange a visit of a delegation from the Budget Committee of the Chamber of Deputies to see what the Customs Administration is doing. We received a lot of interest and most of them were very surprised at what customs officers do and can do.

Among the most visible events this year, I would include the recent NATO Days, where we participate regularly. We present dynamic demonstrations, we have our stand and there is always a lot of interest in it. We also participate in events such as IDET, ISET and PYROS in Brno and events related to them. I think that our work is being evaluated very

positively there as well. We very often present ourselves at events related to the Integrated Rescue System as such.

As part of international activities, we have cooperation with, for example, Israel, Moldova, we are starting cooperation with Taiwan, and all this especially in the field of service cynology and we help them train their dog handlers here. Our plan is to expand this cooperation, but the extent depends on financial resources.

**Could you introduce some of the most important technical means and equipment of the Customs Administration to our readers?**

The amount of technical means is determined by the many competencies that we exercise. In our customs technical laboratory there is a lot of equipment without which we could not exist. These are, for example, mobile X-ray, large-capacity mobile X-ray, baggage X-ray or hand-held mobile X-ray. These are non-invasive technologies, the aim of which is to check the cargo space of passengers' luggage or vehicle cavities. These can very effectively find out whether any contraband is being transported. At the same time, there is no need to unload the cars, so the inspection process is very fast. Last year, we lent our only large-capacity X-ray to the Slovak Customs Administration to place it on the border with Ukraine due to illegal migration. We also own a mobile laboratory, which also includes a patented device for sampling mineral oils from bottom-filling tanks. This is a vehicle that moves





within the scope of our surveillance competence around the country and collects and analyses samples in terrain.

**Which sphere of activity of the Customs Administration is currently the most problematic, or which countries give you the most "toughness"? Could you describe the trends of recent years in this direction?**

I consider the fight against the circumvention of international sanctions to be probably the most important topic of this time, given the geopolitical situation to the east of us. This issue is being solved by colleagues working on the customs agenda and colleagues from investigations within the framework of criminal proceedings. We seek to prevent illegal efforts by entities to find routes to Russian customers who need some key Western components to restore military and industrial capabilities facing high demand. Mostly this activity is based on a similar scheme, i.e. export to a third country from where it travels to the Russian Federation. We are working on the problem together with the Ministry of Foreign Affairs, the Financial Analysis Office, the Police of the Czech Republic and the Intelligence Services.

Customs and tax fraud is also an important issue, especially in the case of imports from China and Turkey. There is often undervaluation of goods, circumvention of the rules associated with the release of goods into the proposed customs regimes, importation of fake clothes and goods of daily use. In these matters, we as the Czech Republic often figure in the position of entry country for Chinese goods to the European Union market. In connection with China, another problem appears to be the movement of funds in cash outside the jurisdiction of the Czech Republic. Detecting this type of fraud is complicated by the fact that ready-made companies are involved. The headquarters of such companies are located at office house addresses without the possibility of contacting the company for State Administration Bodies when the statutory body or the person of the executive are represented mostly by foreign nationals who do not have permanent residence in our territory.

Illegal production and trade in tobacco products also increased. The increase is related to the increasing tax burden on tobacco and tobacco products not only in our country but also in Europe as a whole. In this context, market demand for tax-free cigarettes is generally growing. The Customs Adminis-



tration has uncovered three illegal autonomous cigarette factories over the past year. It is mostly an organized criminal activity, in which both our citizens and, most often, citizens from Poland, Ukraine, Belarus, and Moldavia participate. We have very strong international cooperation in this issue and I think we are succeeding in making this type of illegal criminal activity more difficult. The drug issue is also worth mentioning. For example, methamphetamine, where the production and subsequent cross-border trade is the domain of Vietnamese gangs, which mainly focus on foreign clients, especially Western European countries. We are also experiencing an increase in postal shipments carrying dangerous synthetic drugs. The most famous one here is fentanyl, which is really many times more dangerous than anything else.

We are also tasked with investigating the operation of illegal gambling such as slot machines, odds bets, lotteries, and poker tournaments. We also deal with casinos and online gaming. Many of those listed are related to foreign countries.

**How does the war in Ukraine, in addition to problems with international sanctions, affect the work of the Customs Administration?**

A large number of weapons have been imported into Ukraine, and together with all the Security Forces, we are trying to think ahead and build some capacity to control when the weapons start to come back here. I see a great risk in the lack of transparency of the situation in Ukraine. No one knows

exactly what was imported, who got hold of it, and it could easily happen, once the war is over, that some of the equipment is taken over by an organized crime group. Fortunately, according to the findings so far, we have not experienced anything like this in the framework of international cooperation, but we want to be prepared.

**Ecology is also a big contemporary social topic. How is the Customs Administration involved in environmental protection?**

Our role relates to the prosecution of violations of international CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) agreements. This is the import and export of protected species of plants and animals. It can be said that the Czech Republic is a well-known country of traders with protected animals and also a well-known cactus superpower. In the field of environmental crime, securing live protected specimens is a big problem in our activity, especially in relation to the criminal proceedings of this search section, due to minimal capacity and financial insufficiency. In conclusion, I would like to note that I hope to strengthen mutual cooperation in the field of technological development with the Defence and Security Industry in the coming periods. This perspective will be greatly influenced by the success of the transformation and the allocations of the state budget.

*Dear Mr. Director General, thank you for the interview.*

*Adriana Jesenská*

*Photo: GDC*





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# Agados: Innovation not only in the Military Segment

Agados, a company based in Velké Meziříčí, is the largest trailer manufacturer in the Czech Republic and one of the largest in Europe. In addition to the Czech Republic, they also have a production plant in Slovakia and representation in most European countries. Half of their production goes abroad. The company does not focus only on classic trailers, but also produces special customized types. They have the same reputation in the civilian transport sector as they do in the military.



Agados regularly participates in important trade fairs not only in the Czech Republic. This year, they headed to the International Defence and Security Technology Fair IDET in Brno, where, among other things, they presented their amphibious off-road trailer with two types of superstructure, and were awarded the IDET News 2023 Gold

Award in the logistics category. The amphibious off-road trailer in particular has already won an award at IDET in 2019 - the IDET Gold and IDET News Bronze, and was also the 2019 Exhibit of the Year. At this year's International Defence Engineering Fair IDEB in Bratislava, Agados brought the AGA ULT compact mobile field kitchen.

#### **New this year**

Agados has newly added a mobile diesel generator to their portfolio of special projects. The generator is an effective aid in situations where it is necessary to ensure the electricity supply to places with unavailable power grid - for example airports, festivals, production plants, halls. It can also serve during power outages or power fai-





lures in important operations. Thanks to its off-road chassis, it can be easily moved on regular roads as well as on unpaved roads. The advantage is the simple serviceability of the trailer with the possibility of attachment behind an SUV, van or truck.

Another new feature is a special trailer that acts as an energy island. It is an autonomous power plant powered by solar panels and supplemented by a small wind turbine.

In addition, in October, the company started cooperating with the Swedish manufacturer BAE Systems, which was chosen to produce CV90 tracked infantry combat vehicles for the Czech Army. A number of Czech companies will participate in the production, including Agados, which will be co-responsible for the production of mechanical parts.

#### Army segment

The company has been offering special trailers for the integrated rescue system, especially for the army, since 2014. The products are used not only by the Czech army, but also by other armies of NATO member states - for example in Germany, Austria, Finland or Sweden. A few years

ago, the company developed a new field kitchen PK 4, which was a great success with the professional public, the army, the Castle Guard and the Police of the Czech Republic. Agados has also produced other types of mobile kitchens, AGA ULT and AGA FK2013, which have complemented the existing portfolio in a number of special projects. The mobile kitchens are designed to produce large quanti-

ties of hot food quickly and efficiently in field conditions and are used in military or rescue operations. Their design makes them easy to operate, offering quick and easy commissioning and handling. Field kitchens usually consist of a cooking unit and water heaters and meet all modern hygiene requirements.

Agados also have in their portfolio an amphibious field trailer that can overcome







difficult terrain such as snow, mud and rocky surfaces, and can transport itself across water - it is able to swim behind the towing vehicle.

**Drinking water supply**

During floods and other not only natural disasters, rescuers can also use Agados' water treatment plants and drinking water

tanks to help people. The basic purpose of the unit is to treat polluted water: biologically, chemically, radioactively and with drinking water salt. The water treatment plant has the advantage of a robust chassis that allows movement in difficult terrain. The second appreciated factor is the simple handling and easy commissioning. It is actually the speed that is the most impor-

tant during non-standard conditions. Even the NAVA 2000 tanker is equipped with the same type of chassis as are the company's other single-axle trailers. It is designed to follow the shape and dimensions of the chassis while meeting the hygiene requirements for products in direct contact with drinking water.

[www.agados.cz](http://www.agados.cz)

# GLOMEX Military Supplies Runs new Night Vision Devices Service Centre

Night vision goggles (NVGs) have become a standard part of military and police equipment. They work on the residual light amplification principle, source of which being mainly the Moon and stars at night, but also light pollution generated by human activities. Today's advanced third-generation night vision systems are able to amplify residual light up to 100 000 times and the image quality is increasing.

Regular professional servicing is a prerequisite to the perfect functioning of NVGs. GLOMEX Military Supplies, exclusive supplier of the night vision devices manufactured by leading US companies, opened a new NVG service centre in Prague this summer, equipped with the latest diagnostic devices and specialized manufacturer-certified technical equip-



ment enabling to maintain these sensitive devices and equipment in proper condition throughout their service life. Every year, hundreds of NVGs, supplied both to the Czech Army and abroad, are serviced here. The image brightness amplifier is the

most sensitive part of the goggles. Therefore, operations manual should be strictly followed - above all, the goggles should never be used in daylight as this is harmful to the amplifier and may even cause irreparable damage. Care must also be taken for leak-tightness to prevent moisture from getting in as this can cause damage also. Therefore following every service operation, whether cleaning or adjustment, the goggles must be filled with nitrogen.

Most manufacturers quote a 10,000 operating hours limit/lifetime limit for NVGs goggles. However, field experience has shown that, with proper use and regular professional maintenance, this theoretical limit can easily be significantly exceeded without compromising the quality of display.

# Rescue Trailer – We are Growing and Responding to Current Threats



After a year on the market, the Rescue Trailer is already well known both among rescue forces and across military units. It provides them with solutions of current threats and situations not only worldwide but also increasingly closer to our borders. As the situations in Ukraine and Israel demonstrate, current conflicts are shifting more and more often to the streets of cities, where we must respond to new factors related to civilian population and infrastructure. Effective solutions are needed to quickly manoeuvre in the destroyed infrastructure and fulfil diverse tasks. This is precisely the focus of Rescue Trailer. It can transport individuals and various materials practically with any vehicle, significantly expanding the logistical potential of existing vehicle fleets. If the trailer needs to be used as a stationary base, it can be left in place and, if necessary, transferred to another location by a different vehicle. No heavy machinery, containers, or hydraulic arms are required here.

Further common tools today for a wide range of tasks, including reconnaissance, search for individuals, and mapping extensive areas, are drones. They can be used for perimeter protection and supply purposes. Moreover, defence against hostile drones is also necessary. In collaboration with company TELINK, we have designed

basic product configurations for integration into the Rescue Trailer, divided according to their purpose for monitoring, data collection and their evaluation, crisis supply in hard-to-reach areas, and monitoring and elimination of hostile drones. Border security is also a significant topic. Whether it's stationary patrols or mobile units, the Rescue Trailer can be an effective means and base for both. It provides ballistic protection and enables quick movements along the border.

We have also received positive feedback from military medics. The Rescue Trailer serves as an advanced base for them, capable of carrying inflatable tents and decontamination stations, quickly establishing a facility for treating a large number of people. We are working on this modification in collaboration with EGO Zlín, and the responses are more than satisfactory. Emergency services often lack the capacity in their vehicles for additional

equipment, so integration into our trailer is an ideal solution.

Another chapter is the modification for firefighters, where the leadership of the Fire Rescue Unit has helped us advance further in our development. Together with THT Polička, a leading manufacturer of firefighting vehicles, we have tailored a modification for them. It is a mobile base for six people, who, thanks to the Rescue Trailer, can independently operate in the affected area for several days, equipped with facilities such as a shower and microwave.

We strive to be innovative and provide solutions that reflect the current and often new needs of emergency services and the military. Last year, we successfully presented ourselves not only in the Czech Republic but currently have business representation in nearly twenty countries. We also managed to sell two types to Slovak rescuers. In line with the strategy not only of the Czech Army, Rescue Trailer is a cost-effective and quickly producible solution that can cover diverse needs in task fulfilment and compensate for more expensive and sophisticated equipment with its quantity. Thanks to these advantages, we believe that Rescue Trailer will find application not only in the Czech Army but also in all other areas we focus on.





# Interview with Col. Petr Sehnoutka, the Director of the Regional Directorate of the Police of the Czech Republic in the Hradec Králové Region

He comes from the Náchod Region, he has worked for the Police CR since 1994. He has held many rank-and-file and leading positions, he has spent most of his professional career in the external service, especially order service, but later also in the crisis management department of the Regional Directorate of the Police CR in Hradec Králové. For several years, he also served as the Deputy Regional Police Director of the Pardubice Region. In the years 2007 to 2011 and subsequently from 2019 to July 31<sup>st</sup>, 2023, he held the position of the Director of the Order Police Service of the Police Presidium of the Czech Republic. He took up his current position on August 1<sup>st</sup> 2023.



**Mr. Director, where did you work before joining the Police and what was the reason for such a change as joining the Armed Forces? Could you briefly describe your work at the Police of the Czech Republic from the very beginning?**

Before I joined the Police of the Czech Republic in 1994, in addition to employment in the civilian sphere, I had the opportunity to try freelance work, which was a

particularly valuable experience for me in the post-revolutionary period.

I have been working for the Police of the Czech Republic since August 1<sup>st</sup>, 1994 when it was still the Administration of the East Bohemian Region. Then I gradually went through many places of work with varied police issues, where I gathered other valuable experience. Less than thirteen years after I joined the Police of the Czech Republic, I became the Director of the Order Police Service and the Railway

Police Service at the Police Presidium of the Czech Republic. Then I moved closer to my home region, more specifically to the Pardubice region, where the local Police Directorate became my new place of work. I was attracted by the uniform, so I can say that this is where my wish met my job mission when I was able to lead the uniformed police forces in the role of the Deputy Director for External Service. In 2019, my work duties called me back to Prague to the Police Presidium of the Czech Republic, where I once again became the Director of the Order Police Service Directorate. I worked there until July 31<sup>st</sup>, 2023. From August 1<sup>st</sup>, 2023, I lead the Regional Police Directorate of the Hradec Králové Region.

**You already gave an interview to our magazine in the past, but then as the Director of the Order Police Service of the Police Presidium of the Czech Republic. Now you hold the already mentioned highest regional police post. What was the reason for this change?**

I applied for the selection procedure for the position of the Director of the Regional Directorate of the Police of the Hradec Králové Region mainly for the reason that I was born in the Hradec Králové Region and I live here, and it was a huge challenge for me at the time and also an opportunity to make good use of my experience gained so far from many police areas I have passed through during my service era. On the first day of August, the



Police President, Lt. Gen. Martin Vondrášek, installed me into this position and introduced me to new colleagues.

You gained a lot of invaluable experience at the Police Presidium, and certainly not only in the Order Service. What are your priorities in the new, very important position? As far as I know, right after you started, you mentioned communication as essential, for example. Can you outline your priorities, plans, and visions that you would like to achieve during your tenure? Yes, now you just mentioned one of my priorities, which I carry with me throughout my entire, not just work, stage. I see communication, and especially well-set communication, as one of the fundamental pillars of success. It is not only about horizontal but also vertical communication. The Police of the Czech Republic is the largest employer in the country, and without the transfer of information between departments and individuals, it is impossible to work efficiently enough. That's why it's one of my primary visions. The second vision, and it happens to be my great wish, is that more people work for the Police of the Czech Republic in the future. Those who are not indifferent to the security situation in the place where they live, work, and have their families here. These are probably one of the most compelling reasons that brought all of us who work here to the Police of the Czech Republic, and thanks to them we do the job and want to do it and do it as best as

we can. This slightly touches on my other vision, I would like as few policemen as possible to leave the Police of the Czech Republic, in other words, so that capable and experienced policemen stay with us as long as possible, and the task of the management, including myself, is to create for them the best possible conditions.

#### **Are you planning any major organizational or personnel changes within the Hradec Králové Police?**

Personnel changes are not only tied to a change of the Director. These happen in all organizations, continuously. One of the first organizational changes or measures was the steps leading to the division of the Press and Prevention Department into two separate sections. I am convinced that it is a step in the right direction, which will give the concerned police officers a chance to excel more in one area or another. Fundamental changes, i.e. beyond what has already been said, will not, I hope, be necessary. When I came to the head of the Regional Police, the position of the Director of the Hradec Králové territorial department, which was headed by the deputy Col. Jiří Macháček, was vacant. Given that I was satisfied with his work so far as a representative of the regional department, I am sincerely glad that he won the selection process and now leads the new territorial department of Hradec Králové as its Director. Logically, this personnel shift entails the ne-

cessity to fill the post that has become vacant. There are more similar personnel changes within our Regional Directorate. Otherwise, I can say with pleasure that a large number of professionals and people who want to do their job as best as they can work at the Regional Directorate of the Police of the Hradec Králové Region. It was a pleasant discovery for me. I look forward to working with my new colleagues.

#### **The Police of the Czech Republic have several thousand vacant table positions and the entry or the recruitment of new police officers certainly does not meet expectations. How is it in your region?**

Yes, it is an area that does not make me happy, but the entire Police of the Czech Republic are dealing with it. There should be 1,947 policemen or policewomen working in the region, but we still lack 210 of them in our ranks. It is an area on which I want to focus intensively and it is also related to what I have already mentioned here.

#### **What importance do you attach to human resources? Is your personnel situation stable, do you have the necessary financial resources to pay police officers and civil employees?**

Human resources in general are another essential building block without which no organization can exist. It is not only about

recruiting, or rather hiring new applicants, who will later become police officers, but it is, perhaps even more, about keeping such people and enabling them to perform a full-fledged job. Honestly, the greatest happiness for an employer is if he knows that people working for him like to go to work and are devoted to their work. It is related to many factors. The great atmosphere at the workplace also plays a significant role in this. Again, we come back to the fact that this is about the very difficult work of a leader with employees in many ways. There are funds for the salaries of police officers and civil employees, even though at this time we also had to deal with the effects of savings at our Regional Directorate, which also affected civil employees.

**What tasks does the Hradec Králové Police perform in the field of prevention?**

Of course, police officers in our region are engaged in long-term and intensive preventive projects. They reflect the long-term and current security situation in the Region. We mainly target vulnerable and extremely vulnerable groups of the population, such as the elderly, children, and persons at risk of violence, although of course, we do not forget the majority population.

For example, we recently filmed a video series dedicated to the personal safety of citizens, entitled "Self-defence for everyone". It is a separate and publicly available educational material, but also a supporting material for the lectures we attend daily. For example, the prestigious medical organization in Prague (IKEM) used this video we made to train its employees.

We are also currently preparing a recently proven project, newly named "Seniors, be careful online". It warns seniors of new dangers in the cyber world. In 2022, we reached out to seniors in the form of interactive theatre (a project called "Seniors, don't give up") in a total of 10 cities. In the performances, it drew attention to crimes committed against seniors and taught seniors how to behave more safely. The Králové Hradec police officers are of course involved in all nationally implemented projects (Safely on the Water; I Drive, I Drink Non-Alcoholic Beer; Secure Yourself; The Zebra Won't Look Round for You; I Wear a Helmet Automatically; Be

Seen!; 13 Minutes; Wheels on the Road - let's learn to survive; Safer Internet Day; Day of victims of crime; European Day Against Burglary; Alcohol, Drugs, Youth; International Day of the Elderly; Traffic Accident Victims Day, etc.)

Annually, police prevention officers in our region hold over a thousand preventive lectures and other events for all age generations, during which they directly address over 100,000 people. They publish preventive activities on the website [www.policie.cz](http://www.policie.cz), and in the media in the form of contributions to social networks, radio broadcasts, or television reports, when the reach of the people addressed is even higher.

**How satisfied are you with the material and technical equipment? Do you have the chance to influence the central purchases in some way as the Regional Director?**

Satisfaction with the material and technical equipment of the Police of the Czech Republic is generally high. In recent years, there has been significant investment in modernizing police equipment, including weapons, vehicles, information technology, and communication systems. The Police of the Czech Republic are now equipped with high-quality and reliable equipment that enables them to fulfil their tasks. It should also be mentioned that in the conditions of our Regional Directorate, there is a continuous modernization of offices consisting of many measures aimed at improving working conditions for police officers and increasing the quality of services for the public. This includes modifications such as wheelchair access, new restrooms, modern equipment, and technologies. At the same time, we focus to a large extent on reducing the energy demand of buildings. Despite these investments, there are still some areas where police equipment could be improved. The Police of the Czech Republic could use unmanned means (drones) to a greater extent, e.g. for patrolling, searching, or monitoring public events. The Police of the Czech Republic could also have access to more modern information technologies, which would enable them to collect and analyse data more efficiently.

As far as the central purchases of the Police of the Czech Republic are concerned, the Director of the Regional Police Direc-

torate has the opportunity to comment on these purchases, both directly and through representatives sent to expert commissions. He can thus express his needs and requirements for new equipment.

Beyond that, we are happy for the finances that other entities also donate to us, for example, in 2022 we received almost 120,000 crowns from the Hradec Králové Regional Office for seven measuring stations working based on GPS, which will significantly facilitate and help police officers to document more accurately and quickly places of traffic accidents. At present, thanks to these devices, we can speed up the documentation of traffic accidents and subsequently shorten the waiting time for drivers when passing the scene of a traffic accident. Already at this moment, we have a promise of a donation of millions of crowns from the Hradec Králové Region Office for the purchase of other things necessary for the performance of the service.

**Central purchases include police equipment and weapons, but as a territorial unit you, of course, also have the possibility of purchasing. I assume that you use Czech companies when purchasing so-called "regional" material? In what areas?**

The Regional Police Directorates have a budget for the purchase of materials, which is intended to cover the needs of all police units that fall under the given Regional Directorates. We purchase material through public procurements, which are open to all interested parties, including Czech and foreign companies. Offers are being evaluated by a committee that ensures that the selection of the supplier is transparent and non-discriminatory. We are open to cooperation with Czech companies that offer quality products and services at competitive prices. It should be noted that the vast majority of purchases are made through Czech companies.

*Mr. Director, thank you for the interview and I wish you many personal and professional successes*

*Jaroslav Jonák*



# Wearable Monitoring Systems in Defence and Security Applications

The work in defence and security units is associated with extreme conditions with a number of dangerous factors. Soldiers and responders are exposed to exhausting physical activity and high stress, which affect the performance of tasks. To reduce risk factors and increase safety, wearable monitoring systems for recording biomedical and environmental data are being put into practice. However, their wider practical use is limited by financial, legislative and technological aspects. At the Department of Health Care and Population Protection FBME CTU in Prague, wearable telemedicine systems are developed and used in practice, mainly for emergency units and for dangerous environments and for use in hazardous environments. Specific application areas of the systems are: identification of external risks, passive protection of user health, location and activity monitoring, training and education. The technologies were created and are being developed in accordance with



the requirements of industry and practice as part of a number of joint activities or specific R.& D. projects, which include, for example, the TACR project "MIHRIL II. - progressive ballistic armor for defence forces", project of the Ministry of the Interior of the Czech Republic "Smart system for wearable protective equipment enabling telemonitoring and planning of police and military interventions", project of the Ministry of the Interior of the Czech Republic "Innovative system of virtual reality and simulated model cases of se-

curity character facilitating training and treatment of police officers in risky situations". As part of the mentioned activities, not only the methodologies of use within individual police and army units are determined, but also new technical means using ICT and AI methods are developed. The core of the biotelemetry part of the system allows monitoring and evaluation of heart, respiratory and dermal activity, and movement activity. Within the framework of specific applications, the developed technologies allow to monitor and evaluate postural functions, speech, eye behavior, estimate emotions, etc. Furthermore, the technologies allow to detect external risks, which include hits from weapons, hazardous substances in the air, high or low temperatures, etc. technologies make it possible not only to increase the safety of the members of the units, but also to make intervention management, training and preselection more efficient.

# The New Generation of the ASSET Security System from Trade FIDES Is Coming to the Market

Trade FIDES launched a new version of the ASSET Security System into the European market in the autumn 2023. It is an integrated Security System that combines the services of Intrusion and Hold-Up Alarm System (I&HAS) Security and Emergency System (PZTS) with Electronic Access Control (EKV). The Access Control System (ACS) is complemented by other functions such as attendance records, electronic visitor book, entrance control and parking lot service, key management, simplified MaR (Measurement and Regulation), and integration with DVS camera systems.

The ASSET product can be used both for a small shop and for complicated complexes consisting of several buildings without limiting the distance between them. It is used, among others, by the Police of the Czech Republic, the Czech Armed Forces, large industrial compa-



nies, small and medium-sized enterprises, galleries, protected monuments, and other entities from the public and private sectors. The new version of the ASSET System offers expanded possibilities in the field of integrations, especially regarding the speed of development of new integrations of third-party products and supported technologies. The ASSET software builds on modern technologies

such as .NET 7 used by the ASSET Server, ASSET Client, ASSET Config, and other applications. Thanks to innovations, the security solution is more efficient and offers additional functions. For example, the system provides the possibility of encrypted communication at the level of the entire system, from the card to the server. Philosophically, the new generation of ASSET is based on the idea of the existing system. However, this version of the software takes integration and modularity to the next level. For example, it is now possible to run ASSET Server and ASSET Client directly in the control unit, which eliminates the need to have a separate server on smaller installations.

The deployment of the new product is based on an individual assessment of the needs of each customer.

# Drone Dock System for 24/7 Security Surveillance Using an Automated Drone

The security of critical infrastructure and other important objects has recently been gaining importance. The use of drones is a natural extension of existing security systems. AgentFly Technologies has developed a Drone Dock system that robotically replaces a drone's battery, enabling near-continuous operation.



AgentFly Technologies has been developing technologies for autonomous and automated drones for a long time. One of the main disadvantages of using a drone for security applications is the limited flight time. The propulsion accumulator must be replaced or recharged before the next flight. For fully automated unattended operation, it is necessary to change the battery robotically.

The Drone Dock system aims to secure or extend the current security solution for perimeter protection with drones. The system is designed to be completely unattended and can be deployed in remote or hazardous areas. A key feature of the system is the safe execution of automated flight, which is possible thanks to the built-

-in flight control system, including collision resolution, geofencing, and system status monitoring.

Typically, the system is integrated into an existing security system. The system is presented as a moving, controllable sensor in the remote operation center.

The system is designed for two basic modes of operation. The first mode is 24/7 surveillance of the monitored area. In this mode, the drone's flight patterns within the perimeter are predefined. The actual trajectory is randomized explicitly so that the next movement of the drone cannot be predicted, but optimal coverage of the monitored area is still maintained. This behavior makes it difficult for a potential intruder to enter the protected perimeter

undetected. In this mode, the drone takes off automatically, performs a flight, lands independently, and immediately takes off again after replacing the battery. In this mode, the drone's flight time for the surveillance activity is maximized.

The second activity is using the system as a first response unit. By default, the drone is placed in a ground station in standby mode and, on the instructions of the sensor or the operator, flies directly to the intervention site.

The system's core is a drone with the ability of robotic battery replacement. The drone can work in fully automatic (the operator selects flight plans, and then the drone moves entirely without operator intervention), semi-automatic (the opera-





tor can move the drone along predefined trajectories), and manual (the operator directly moves the drone in a defined space) mode. The drone performs autonomous trajectory planning, considering terrain, obstacles, and defined no-fly zones. In all modes, a safe flight is ensured - the operator cannot execute a command that would disturb the safety of the flight. Flight speed can reach up to 15 m/s with the ability to fly in winds of up to 12 m/s. Flight duration varies between 25-50 minutes depending on the mission profile, user sensors and weather conditions.

The drone's user equipment and sensors depend on the application scenario. An electro-optical camera with 10x zoom combined with a thermal camera on a stabilized hinge and a pilot camera are supplied as standard. Other options include high-zoom cameras, powerful thermal cameras, and laser rangefinders. Additional devices for eliminating interference - reflectors or speakers - may be included. Optional software modules enable automated processing of information from sensors, e.g., detection of people, vehicles and animals, damage to the perimeter, etc. In this configuration, the operator is notified when a non-standard situation occurs.

An essential system component is a ground robotic station performing multiple functions. The primary function is a robotic replacement of the drone's accumulator and accumulators management. The station constantly maintains one fully charged

accumulator ready for replacement in the drone. Other accumulators are charged and maintained in optimal conditions (e.g., temperature) for maximum service life.

Another function of the station is the protection of the drone from adverse weather conditions (the possibility of closing the roof with the drone inside) and a system for automated take-off and landing. The station includes a control panel for manual control of the drone.

The ground station can be equipped for different climatic conditions (low and high temperatures, high humidity), has a backup power supply system, and enables a complete standalone configuration - powered by solar panels or a diesel generator and satellite internet connection. The system includes a free-standing column for other supporting components

that helps ensure safe operation. It is a reflector, a warning beacon, and a camera surveilling the take-off and landing area with automatic detection of people (to prevent personal injury and protect the ground station itself). Other components are a wireless modem for communication with the drone, a weather station for detecting extreme climatic conditions, a base RTK GNSS receiver for supporting precise landing, and an ADS-B receiver for detecting air traffic and solving collision situations. The entire system can be integrated with other third-party perimeter sensors.

The Drone Dock system is currently being tested within critical infrastructure in the Czech Republic. Customers from neighboring European countries, and especially non-European markets, show great interest, whether for civilian or military use.





# The Czech Drone GORGON X8 for Carrying Ammunition is being Prepared for Real Deployment in Combat

AgentFly Technologies has been developing advanced drones using artificial intelligence for over 10 years. Drones are used for industrial inspections, transportation of medical supplies, or security applications. The latest addition is an ammo-carrying drone. The combination of excellent components and advanced control software is intended for the most demanding conditions.



AgentFly Technologies is engaged in research and development in the areas of critical infrastructure protection, industrial inspection, tactical drone control, and air traffic control with the help of artificial intelligence, robotics, and simulation. The core of the activity is the research and application of artificial intelligence, especially in the advanced control of autonomous robotic systems, trajectory planning in a complex environment, detection and resolution of collision situations, mission execution by a group of cooperating drones, integration of drones into shared airspace, and simulation of air traffic control, including modeling of cognitive behavior of human operator. The beginnings of research go back to 2005 at the Czech Technical University, where the first projects were funded by the US Air Force, Navy, and Army. Su-

ccessful research quickly gained other sponsors and partners. The next step was founding a technology company that transforms research results into commercial applications.

An essential capability is high flexibility in adapting drones and applications to various customer requirements. This includes using different hardware platforms (propeller or fixed-wing drones, ground robots), closed or open autopilots, and sensors to perform the flight and collect data. All components are subsequently connected and integrated into an advanced control system.

This year, the company was asked to develop a drone carrying ammunition. The assignment required a drone with the option of manual or autonomous flight in a radio-electronic warfare environment. The drone is designed for multiple uses and

therefore emphasizes safe return.

The basis of the system is a newly constructed Czech drone used for various industrial and security applications, in which it is necessary to carry specialized cargo in the undercarriage. The drone has a maximum take-off weight of up to 27 kg and a load capacity of up to 12 kg. Flight speed can reach up to 15 m/s with the ability to fly in winds of up to 12 m/s. Flight duration varies between 25-50 minutes depending on the payload and mission profile.

The drone is specially modified and equipped based on the customer's requirements. Even in this case, several versions are being developed with varying degrees of flight autonomy and resistance to radio-electronic warfare.

In the basic version, the drone uses standard commercial satellite GNSS navigation and radio links at a frequency of 2.4 GHz,



enabling operation only in an undisturbed environment. The extended version uses a GNSS navigation module resistant to ground interference (antijamming and antispoofing) and a military radio link operating on several frequencies (e.g., Silvus, Harris).

The drone is also equipped with sensors for data collection and manual flight control. An electro-optical camera with 10x zoom combined with a thermal camera on a stabilized hinge, and an optional pilot camera are supplied as standard.

The ground station allows the control of the drone in manual and automatic modes, displays telemetry and images from onboard cameras, and drops ammunition. The ground station can be separated from the radio transmitter for controlling the drone to increase the safety of the operator.

The software for planning the autonomous flight trajectory is an essential component of the entire system. The algorithm works with the terrain, the definition of prohibited zones, and the expected wind. The trajectory is planned during pre-flight preparation but can be dynamically changed in flight based on input from the operator or information detected by the drone itself (e.g., change in wind speed and direction, danger area detection).

A key part of the system is the onboard software for flight control and execution. The software takes care of the exact execution of the set trajectory during autonomous flight and decides on the drone's behavior during a non-standard situation, typically interference.

In case of loss of communication connection with the ground station, one of the predefined behaviors is chosen, e.g., continuing according to the planned trajectory, waiting in place according to the prescribed pattern, or returning to the starting position. The onboard software evaluates the actual behavior based on the configuration and the current situation (mission phase concerning ammunition load, drone status, and information from sensors).

In the event of a GNSS navigation failure, the drone enables the transition to local navigation, which is not dependent on any radio signal. Local navigation is a combination of an inertial measurement unit (IMU) and input from cameras. The algorithm continuously evaluates the quality of individual sensors and merges them into the final position for drone navigation.

The equipment for dropping ammunition is developed in close cooperation with the

customer based on current experience from active combat operations. The modular universal system allows the attachment of multiple pieces of ammunition of different types up to 85 mm caliber. The ammunition is stored in a horizontal position to achieve optimal flight characteristics. Ammunition can be dropped individually. Emphasis is placed on simple and quick attachment of ammunition in field conditions.

In May 2023, the drone prototype was presented at the IDET defense and security technology fair. Tests are currently underway at both the manufacturer and the customer. Deliveries of the first drones are planned for the end of this year. Due to the close cooperation between the manufacturer and the customer, the drones will be continuously improved based on real deployment in combat.





# DESIGN TECH – successful cooperation with the Armed Forces

In the last edition of the Review magazine, we introduced the Czech company DESIGN TECH s.r.o. from Třebechovice p.O., especially its portfolio. Now we present a short interview with its director Vojtěch Beneš about the current state and new activities of the company.



**Mr. Director, can you briefly recap the history of your company? Especially the company formation and what made you develop and manufacture pistol holsters.**

The company DESIGN TECH s.r.o. was founded in 2010, but we can see its beginnings already around the year 2000 thanks to the cooperation with Mars a.s. when a pistol holster was developed as a part of the nylon belt set. From the beginning, we emphasized the modularity and functionality of our products, which proved to be very logistically advantageous in the Armed Forces. Over time and with increasing requirements, especially in the

field of securing weapons in holsters, the development began to move from textile (nylon) towards the plastic holsters that we produce today.

**Can you tell our readers about the portfolio of DESIGN TECH?**

The current portfolio is mainly focused on holsters for the Armed Forces. We offer holsters for weapons and weapon accessories. Thanks to their modifiability, they meet the requirements of various units and purposes, from rank-and-file members to task forces. Our holsters are also used by sport shooters competing in IPSC or defensive shooting.

**Do you also collaborate with other companies or customers from the Armed Forces during the development phase?**

When developing holsters, communication and customer feedback are very important to us. We listen to the requests and suggestions of all our customers. I can mention, for example, the cooperation with the Municipal Police from Roznov pod Radhostem, whose policemen constantly bring us new findings, and thanks to them we keep advancing the possibilities and quality of our holsters. At present, most new products are being created precisely based on such cooperation.

**The most widespread handguns in the Armed Forces of the Czech Republic are undoubtedly the pistols produced by Česká zbrojovka. How does such collaboration take place before you complete the development to meet the customer's needs?**

Cooperation with Česká zbrojovka and its subsidiary 4M Systems is primarily based on army tenders, in which the development process is subject to demanding requirements and user tests by the Armed Forces.

Another collaboration is the development of holsters for newly launched weapons, where in cooperation with CZUB we try to launch a new holster into the market at the same moment as the pistol is launched, which we succeeded in with the CZ P-07/09 and CZ P-10 models.

**In the last edition of the Review magazine, there were mentioned DESIGN TECH holsters, and the Director of the**



**Municipal Police Mgr. Martin Žďárský expressed his satisfaction with them. Do you employ user feedback for further improvements or new ideas?**

Due to the differences in the require-

ments of individual customers, we try to approach each one individually. We often offer the opportunity to try our products first and then refine the specific design. Users often come up with additional insights and requirements in the course of using the holsters. This process is mutually beneficial - they bring us valuable information directly from the source and give us the opportunity to solve requirements quickly and precisely "tailored".

**Supplies of your products to foreign customers are certainly a success for the company and also bring good references. Could you give some examples?**

For many years, our foreign business partners include the French company STE SIDAM, which supplies equipment to the local Armed Forces. Furthermore, in the past, we delivered holsters to Slovakia through the company M-Hunt. Another important delivery was a tender for the

Polish Border Guard or a unit in Tenerife, Spain. Through the company Česká zbrojovka, our holsters reached, for example, the USA or Philippines.

**What trade fairs, exhibitions, or other presentation or promotional events do you participate in?**

For many years we visited and participated at the German IWA Trade Fair several times, after the Covid break we followed up by participating in the Enforce Tac Trade Fair, which is closer to us in terms of focus. We also participated in the Polish MSPO Trade Fair through our business partner.

Every year we also participate with our presentation in shooting competitions organized by the Municipal Police of Mikulov, Přeřov, or Česká Třebová.

*Thank you for the Interview, Miloš Soukup  
Photo: Design Tech*

## Czech Surveillance Systems Protect Critical Infrastructure in Europe

In a time of increasingly sophisticated security threats, advanced surveillance systems are crucial for protecting our communities and critical infrastructure. Project manager Dipl. Eng. Marek Soviš of EVPÚ Defence a.s., a company with more than 20 years of experience in this sector, has shared his insights below.

**What types of surveillance systems does EVPÚ Defence produce?**

We specialize in stationary and mobile systems with short (approximately 9 km), medium (up to 14 km), and long (over 25 km) observation range. The concept is based on durable pan tilts which carry various sensors. Police, border guards and other organizations responsible for monitoring large areas usually need color day cameras and thermal imaging cameras. Scientists and researchers may use our pan tilts for their measuring instruments. At the same time, our pan tilts are also part of such defence solutions as mobile jammers and anti-drone systems.

**A growing number of camera manufacturers now offer complete surveillance systems. Do you have any competitive edge over them?**

A detailed analysis of each customer's needs and our capacity for customization mean that our customers don't pay for what they do not need. We also offer a well-equipped in-house service center and support for the reliable functionality of the products throughout their lifespans.

**Where are your surveillance systems used?**

Over the years, we have supplied more than a hundred special surveillance vehicles to various police forces at home and abroad. Our mobile solutions participated in Frontex missions or helped to ensure the security of visitors to the Biathlon World Cup, Barum Czech Rally Zlín, Sázavafest, etc. Our pan tilts are installed on patrol boats monitoring the coast in Greece, and our stationary surveillance systems help monitor the borders in several countries worldwide, including Romania, Bulgaria, Lithuania, and Poland. There is virtually no coun-



try in the Eastern Schengen area where our systems are not involved in border protection.

**For more info please, visit:  
[www.evpudefence.com](http://www.evpudefence.com).**

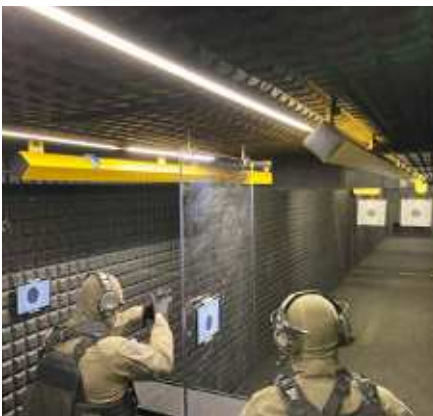


# The Modular Shooting Range will Provide Professional Shooting Training Tailored to your Needs

The new concept of Modular Shooting Ranges of the exclusive Czech manufacturer LEDIC MSR is establishing itself on the market. It fulfills high demands for training members of the army, police and other armed forces. It is the variable layout, equipment and safety of the shooting range that are essential for adequate shooting training in the 21<sup>st</sup> century. What is unique about it that it becomes a trend of the future?



Maximum safety, ballistic resistance and sufficient anti-noise measures are the indisputable advantages of Modular Shooting Ranges, which, compared to ordinary outdoor shooting ranges, offer continuous year-round self-service operation. In addition, air conditioning, ventilation, temperature regulation, remote management and service operation supervision ensure the highest possible comfort.



## What are the essential options and parameters of Modular Shooting Ranges?

These modern shooting ranges are based on the concept of closed objects, which makes it possible to build a model for a specific type of training, the required ballistic resistance, the type of performance of the weapons and ammunition used, the shooting distance and the level of equipment.

In the area of the army, police and other armed forces, shooting ranges are supplied through distributors. Come and test a functional shooting range at the Factory Test Center in Křeč next to the manufacturing plant. Book an appointment at [www.lscenter.cz](http://www.lscenter.cz).

You can find more information about Modular Shooting Ranges at [www.ledicmsr.cz](http://www.ledicmsr.cz).

The construction itself is key. These are sophisticated and open systems based on connecting modules, through which it is possible to assemble variants of shooting ranges tailored to specific training needs and thus create the most suitable background for shooters. In addition to the fully variable assembly, the shooting range can be relocated, further expanded or even modernized.

Shooting ranges can also include non-shooting modules, e.g. administrative operational, training, presentation, sales and service, technological, secure spaces, or background facilities for shooters, staff, catering, accommodation or social events.

- Assembly of modules according to the requirements for shooting with a shorter shooting distance or for training in a larger area with a longer shooting distance, optionally in the range of 10 to 300+ meters.
- The number of people shooting at the same time in the possible range of 2 to 16+.
- Adjustable shooting range for shooting from a fixed or dynamic firing line.
- Choice of target system – optional manual or motorized target movements with remote control.
- Combined lamellar bullet trap catcher with shot blocks.
- Rubber granulate bullet trap
- Evaluation of training using a camera system monitoring imaging of impacts/hits in real time with the possibility of continuous recording for an individual user.



# BPDi: Modern Catering not just for Armies

For many years, Czech soldiers deployed outside military bases had to make do with obsolete food rations. Thanks to the collaboration of the Army of the Czech Republic with FOODSET corporation, new rations packs are now coming into action. They are modular, in line with the current trends in terms of preparation and modern nutrition, and comply with the STANAG legislation.



The main change is expressed through the product name – BPDi stands for individual packaged food rations. Individual means not just a single ration covering 24 hours, but a triple pack of meals including breakfast, lunch, and dinner. This arrangement allows for modifying the combination of the supplied packs according to the specific training type, climate conditions, taste preferences or health requirements of the consumers. Another innovation is represented by flameless heating, which allows for consuming warm meals without the need to make fire.

Currently there are six versions of the breakfast, lunch, and dinner menu. The customer can therefore mix and combine the packs in many ways to match the nutritional value of the individual rations with the requirements – there are up to 125 combinations to cover the nutritional needs of one full day. The distribution of energy between breakfast, lunch and dinner follows a 30-40-30 % pattern; one ration will supply from 14,500 to 16,500 kJ – by about one third more than

bars, nuts, chocolates or coated biscuits for extra energy.

Hydration regime is covered by isotonic drinks and soups. There is also tea and coffee, chewing gums, and a full hygiene set including disinfectant wipes.

Some of the leading customers to whom FOODSET supplies the rations include the Ministry of Defence of the Czech Republic, the State Reserve Bureau, humanitarian organisations, or the Estonian and Dutch armed forces. The company also designed a special ration for the integrated rescue system units. FOODSET goes out of its ways to accommodate the customers' needs – for foreign customers it is possible to produce samples in the style of their local cuisine for testing. Upon request it is also possible to order vegetarian or halal rations or personalise other parameters – for instance to pack breakfast, lunch, and dinner all together. Menu can be composed also by the preferred product life, which ranges from 27 to 36 months per the individual components. The daily production capacity is currently at 3,000 rations.

the recommended daily intake for an adult man.

The leading component of the BPDi is a ready-made preserved meal weighing 340 g and prepared according to the preferences of the customer. It is supplied with the mentioned heater. Soldiers will also find packs of single-species meats, pâtés, spreads or salads. As side dishes, there are various types of extruded cereal bread slices, desserts,

**Ludek Novak, CEO FOODSET s.r.o.**

## **What do you see as the biggest progress between the former rations of the Czech army and the current BPDis?**

I would certainly highlight the new formulations of the ready-made meals and also the items that were previously missing: vegetable salads, dried meats, desserts, or quality cereal slices. For field rations, the BPDis offer unparalleled variety of the essential components, as well as the possibility to combine different types in order to perfectly match the tastes and preferences of the consumer.

## **Which military army units and tasks are the BPDi rations suitable for?**

Due to their modular character, the rations can be used in all situations where classical catering is not possible. Soldiers use them during transfers, missions, exercises and trainings; members of the Active Reserves have already tried them too. The dehydrated version is specifically suited for the needs of special troops.

## **In which direction do you intend to further develop your rations?**

We are preparing new types of preserved meals, several new pâtés, and a ready-made sweet porridge as a dessert. There will also be new drinks to boost energy before physical performance and after it. I must not forget our innovations in logistics and packaging, which we continuously develop towards minimalism.

## **Which of the BPDi meals is your personal favourite?**

When travelling all around the country, I like to use our dried meat and protein bars. My colleagues in the office prefer the dehydrated meals. From the ready-made preserved meals I really like the pasta with turkey and spinach. We all like the salads, too.



# Comparison of Narrowly Specialized and Universal Devices

In the context of continually evolving technologies, the decision between narrowly specialized unmanned aerial vehicles and universal platforms reflects the various phases of the industry's development. Universal platforms are emerging as a key element in this evolution.



The main advantage of SPARROW is its ability for rapid mission preparation and component changes by the operator without requiring special training. The system is capable of concurrently executing multiple missions. For instance, a single operator with one unmanned aircraft can simultaneously disrupt enemy radio signals and adjust fire on hostile groups.

The unmanned aircraft is built on a modular principle, allowing it to be customized for specific tasks. Modular elements have universal mounts and interaction protocols (UAV-CAN), ensuring swift target block exchange without further modifications.

The system can be controlled using compatible ground stations, including mobile phones and tablets with the appropriate software.

In conclusion, in the unmanned aircraft market, universal platforms with modular solutions are becoming increasingly popular. This not only reflects technological progress but also aligns with efforts to conserve resources and enhance efficiency.

The choice between specialized unmanned aircraft and universal platforms depends on needs and usage strategy. Finding a balance between functionality and costs is crucial to effectively and economically utilize unmanned aircraft for your purposes.

The favorable aspects of narrowly specialized unmanned aircraft highlight their availability and cost-effectiveness. They recognize that despite limited functionalities, these models excel at specific tasks and require lower initial costs. However, as in any process, tasks change over time, prompting the question of expanding the capabilities of unmanned systems.

Universal modular platforms offer flexibility and functionality. The possibility of complementing unmanned aircraft with various sensors and devices opens up a wide range of applications. Each module can be tailored to specific tasks, enabling an efficient response to changing requirements without the need for component replacement. This proves to be economically advantageous in the long run.

## UAVSAVE SPARROW

A prime example of a universal platform is the recently introduced unmanned aerial vehicle by the Slovak company UAVSAVE, named SPARROW. The unmanned aircraft has several configurations that alter its tactical and technical characteristics depending on the composition of its parts. The universal platform can have multiple equipment vari-

ants. Depending on mission types and complexity, it can be utilized as:

- Scout, recording events through photo/video footage and transmitting data to the operator;
  - Silent scout, recording events but not transmitting data;
  - Corrector, performing video surveillance and correction of artillery and mortar fire;
  - Retranslator in a MESH network;
  - Radio-electronic intelligence element, detecting radio-electronic devices (radios, radars, radio-electronic intelligence stations, etc.);
  - Cargo transporter with activation;
  - Imitator, used as a decoy target, and more;
  - Object searcher, providing high-resolution photo/video surveillance with direct line of sight control.
- This versatility showcases the adaptability of the universal platform to various scenarios and missions, making it a valuable asset in a range of applications.



# PLESS

Over The Horizon • Passive Long-range • ESM Surveillance System





# AUREL – “Beyond the Automotive Industry - Integrating the Defence, Energy and Rail Industries”.



In recent years, AUREL, with thirty years of experience in the industry, has been a leading partner in the automotive industry, providing individual approaches and solutions in development, production and testing. Now the company's strategy has gone beyond its automotive roots. The family-owned company is gradually using its extensive expertise to diversify its services to include the defence, energy and rail industries.

Expansion into these sectors is a strategic investment in the company's future. "We recognise the importance of diversification to maintain a robust and sustainable business. This direction allows us to participate in a wider range of projects that span multiple industries. Accumulated experience and a constant willingness to face new challenges, learn and move with modern trends is AUREL's core genetic information." Jaroslav Němec, Director

of Sales, Development and Acquisitions, comments on the strategy.

The skills and disciplines acquired in the automotive industry significantly influence defence industry trends. We are establishing valuable contacts and preparing collaborations with partners such as military research institutes, commercial entities, universities and other major players in the defence industry. Among other things, new disciplines are entering the field, such as virtual reality, artificial intelligence, augmented intelligence, additive manufacturing, scanning, in which AUREL has the ambition to become a major supplier of services and products, just as it has done in the automotive industry.

With the same ambition, AUREL wants to move some of its activities into the energy and rail industry. Here, it is particularly interested in 3D measurement, strain

gauging, simulations and calculations, as well as virtual reality.

However, AUREL will not abandon its automotive customers. It continues to expand its portfolio of customers from the group of automotive manufacturers, major suppliers and subcontractors to the industry. Development support, autonomous system services, restraint system testing, pedestrian protection laboratory activities and other support activities such as pre-development calculations and simulations and new product development remain core activities. Artificial intelligence, data security and digitalisation are areas in which AUREL will become more established and which it intends to integrate synergistically into its current activities in the future.

The areas of testing and development still remain the core business of AUREL. This is confirmed by the fact that the compa-

ny invests decisively not only in human potential, but also in its own infrastructure, which enables further growth and improved service for existing and new customers. A key milestone for AUREL is the completion of its own test polygon, located near Mladá Boleslav. The Břehyně Development and Innovation Centre offers modern facilities and equipment that meet the most stringent criteria for modern vehicle testing. Testing of restraint systems in the field of passive safety as well as testing of active safety systems, modern equipped workshops plus administrative facilities are a matter of course at the Development and Innovation Centre, and all this is complemented by an experienced team of employees who care for maximum customer comfort.

The AUREL products, which were created by our own inventiveness and the need for precise and efficient work, are also the result of practical thinking by our colleagues, which should be mentioned. They make AUREL what it is today. Products such as torque gauges for measuring ball valves, measuring wheels for measuring torque moments, flapping torques and gravitational forces, a throwing test tower for use in laboratory tests for pe-



destrian protection, special 3D scanning equipment, are just a list of the now practice-proven devices developed by AUREL that are slowly finding their way beyond the company's own needs.

Fortunately, the attractiveness of the activities is so appealing that AUREL is lucky to find new talents who have had the opportunity to work with the company on individual projects since their student years, or to work together on the topics

of their bachelor's or doctoral theses. The corporate environment, including the transparent company culture, reflects the very essence of a family-run company, and is thus the cornerstone of AUREL's success.

AUREL Partner for Development and Innovation.

For more information about AUREL and its diverse portfolio of services, please visit [www.aurelcz.eu](http://www.aurelcz.eu).

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# Getac X600 Rugged Mobile Workstation

## Overview

- Getac introduces a new fully rugged mobile workstation with a 15.6" diagonal, designed to provide comprehensive workflows for mobile command computing, management, and planning in various operational environments.
- The new X600 notebook delivers a significant leap in computing power with an 11th generation Intel® Core™ H-series i5 to i9 processor, 128 GB of RAM, and an NVIDIA® Quadro® RTX3000 graphics card.

- Two models, X600 and X600 Pro, combine extensive battery and storage expansion capabilities with a compact design and low weight, setting a new standard for rugged solutions.

## Unmatched Performance

On the X600 runs the latest Windows 11 Pro and is equipped with 11th generation Intel® Core™ H-series (i5/i7/i9) processors with integrated Intel® UHD Graphics, resulting in exceptional performance in various data and graphics-intensive operational scenarios such as defense man-

agement, railway track inspection, and oil and gas sensor analysis. An optional NVIDIA® Quadro® RTX3000 graphics card further enhances graphic performance, while up to 128 GB of memory ensures lightning-fast processing.

## Exceptional Expandability

The X600 model boasts exceptional expandability that meets modern data demands, supporting up to three PCIe SSDs for internal storage of up to 6 TB. The X600 Pro model goes further in expandability, equipped with two hot-swappab-





le batteries and capacity for two more batteries in the media bay, collectively providing over 240 Wh in one device. The X600 Pro also features PCMCIA and Express card slots and supports a DVD SuperDrive / optional Blu-ray drive, further enhancing its capabilities in and out of the field.

#### **Powerful Connectivity and Security**

Professionals working in the field, such as those involved in defense operations, need to communicate clearly and effectively, gather intelligence, and make critical decisions, regardless of their location. The X600 is designed with these needs in mind and features a wide range of top-tier connectivity options, including dual 2.5GBASE-T Ethernet, Wi-Fi 6E, Bluetooth v5.2, optional dedicated GPS, and an optional 4G LTE modem with integrated GPS. The device also has multiple input and output interfaces such as Thunderbolt™4, USB 3.2 Gen 2 Type-A, HDMI, DisplayPort, VGA, and a serial port. The X600 also incorporates the latest physical security and data protection features. Security of sensitive information is ensured by self-encrypting drives, a smart card reader, TPM 2.0 chip, Intel® vPro™ technology, optional Windows Hello facial authentica-

tion, and an optional fingerprint reader. Additionally, there is a built-in Kensington lock slot for theft protection.

#### **Highly Versatile and Mobile**

The X600 boasts a large 15.6" FHD display with optional 10-point capacitive touch control, operable in cold, wet conditions, or even with gloves. Getac's patented LumiBond® technology also provides excellent color, contrast, and brightness (1000 nits), making the display easily readable even in direct sunlight. Weighing less than 5 kg, the X600 is incredibly optimized for such a powerful device. With its compact dimensions and two hot-swappable batteries, it is ideal for prolonged field use. Legacy device support means customers can use the X600 in combination with a wide range of their existing peripherals right out of the box.

#### **Fully Rugged Reliability**

Like all Getac devices, the X600 is inherently rugged, built to withstand physical impacts, high temperatures, humidity, and dust, ensuring the highest level of performance and reliability in the field. Rugged features include IP66 certification, MIL-STD-810H, MIL-STD-461G, and optional CID2 (ANSI/UL 12.12.91) certifi-

cations, resistance to vibration and drops from up to 1.2 meters, and optional resistance to salt mist.

"With the introduction of the rugged mobile workstation X600, Getac once again raises the bar in the field of rugged mobile computers, delivering desktop-level performance and exceptional reliability in one complete package."





# Smart Security for Every Object

Safety is one of the most important aspects of today's world. Ensuring physical security is a key and includes measures to prevent an unauthorised access to the property and restricted access areas. These measures may be of a technical, organisational or systemic nature. In this article, we will focus on physical security and how to ensure it.

As a first step in ensuring physical security, it is necessary to secure the perimeter. Various technologies, including optical fibres, can be used for this purpose. FOTAS is one of the security systems that uses optical fibre as an acoustic sensor. This system can detect unauthorised access to the perimeter, and its main advantage is that even though it does not need any infrastructure in the perimeter, it still can detect sounds around the fibre optic cable.

As a sensor, the optical fibre can be easily installed practically in any terrain. We can bury the cable in the ground, to detect the movement of people, vehicles and detect excavation works, or it is possible to install the cable on a fence to detect intrusion on the fence. The whole system is very accurate after GPS calibration. Via devices designed for a perimeter of 10 km we are able to detect anomalies with an accuracy of 4 m, and 10 m via devices for 100 km.

FOTAS is an OPTOKON technology, based on the analysis of signals in an optical cable, which changes its parameters on the basis of acoustic or mechanical vibrations within a given area. A single segment of this technology is capable of detecting sounds and vibrations at a distance of up to 100 km. High-precision laser continuously transmits optical pulses that pass through the optical cable. These are reflected from various inhomogeneities in the optical fibre back to the examination unit, which uses software to automatically filter out noises and unrelated data. Impulses affected by non-standard disturbances are analysed by an artificial intelligence (AI) after being admitted to the examination unit, which then evaluates and classifies anomalies. On the operator's screen - the perimeter map - the appropriate classified alarm is displayed with information about the date, time and exact GPS position of the intrusion. This information can be used for the integration of other security systems, such as CCTV or a UAV drone system.

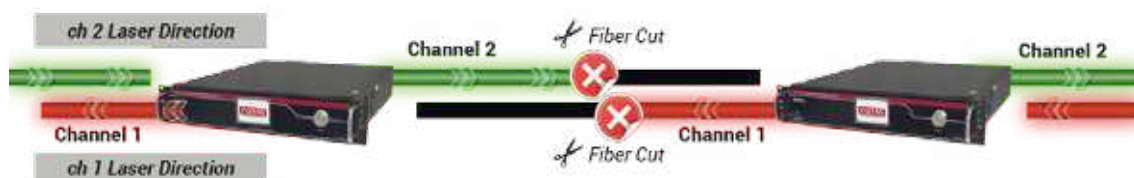
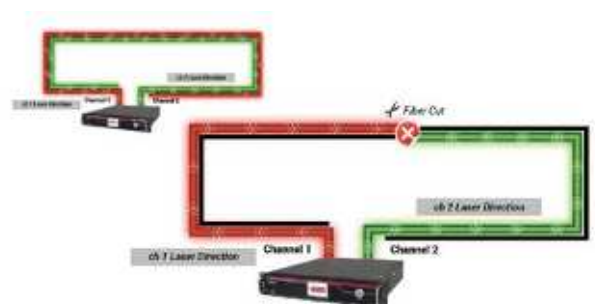
## Major Features and Benefits

- Supervision of a large area
- Zones can be set with different detection and evaluation parameters
- Fiber optic cable is immune to electromagnetic fields
- Easy installation of the cable in the ground trench or the possibility of attaching to the fence
- No need for a special cable, because the sensing element is a conventional optical cable, for higher sensitivity we recommend using the sensitive OPTOKON Kable cable
- Does not require electrical wiring along a protected circuit

## Model Overview:

**FOTAS-S-10** - single-channel device for perimeters up to 10 km. An effective solution for monitoring and securing smaller perimeters. Fast, reliable and easy to install.

**FOTAS-S-50** - single-channel device for perimeter up to 50 km. Product for long pipelines (oil and gas pipelines, etc.), large perimeters, power cables and telecommunications long-distance cables that require protection and monitoring in the range of thousands of kilometres.



**FOTAS-D-5** - Dual-channel perimeter device up to 5/10 km. This dual-channel security and monitoring solution is a great choice for small projects that need reliable and affordable protection.

**FOTAS-D30** - dual-channel device for perimeter up to 30/60 km  
Solution for medium-sized surveillance and security projects; including industrial and military facilities, cities and data centres. Dual channel can be used to avoid failure due to defect on one fibre.

**FOTAS-D50** - Dual Channel 50/100 km The D-50 provides the solution you need to secure large perimeters that span thousands of miles and can be used to avoid fibre defect failure.

**New - FOTAS for tactical use**

Tactical FOTAS is a portable perimeter protection system that uses optical fibre to detect acoustic signals. The system consists of four main components: the FOTAS unit, tactical cable on a portable reel, and a bracelet on which you receive the alert - vibration during the alarm. The bracelet allows you to view the time of the intrusion, view past intrusions and is usable in any lighting and environment.



Tactical FOTAS



Wireless or wired access to the sensor device

**FOTAS - WEB interface**



**OPTOKON Sensitive star detection cable for FOTAS**

Unique fibre optic cable for Acoustic Sensing Systems FOTAS from OPTOKON Kable. The cable is suitable for installation on a fence and in the ground with a silica sand bed.



Zdeněk Malý  
IT & Marketing Manager  
OPTOKON, a.s.



# Military Research Institute, s.e.



The state-owned enterprise Military Research Institute, s.e. (VWÚ) with headquarters in Brno, established by the Ministry of Defence of the Czech Republic, is focused on (applied) research, experimental development, expert support, special services, and product implementation, including strategic supplies for military and security applications.



Golden IDET 2023 Award for the exhibit "STARKOM Communication Jammer" and Golden IDET 2023 Award for the exhibit " DAPH Highly Sensitive Detector of Nerve Paralytic Substances" in the hands of the Director of VWÚ, s.p., Dipl. Eng. Pavel Čuda, Ph.D.

The institute's technical competencies are focused on the military aspects of protection in three basic areas:

- chemical, radiological and biological protection (CBRN);
- special electronics and camouflage;
- materials engineering with systems and technologies to reduce the vulnerability of military equipment.

VWÚ in the form of an independent state enterprise has been operating for 11 years since the establishment of the enterprise, which is not much, but it can still boast interesting statistics that characterize the development of VWÚ:

- successfully solved 71 defence research

and development contracts for the Ministry of Defence of the Czech Republic / Czech Armed Forces;

- handled a total of 115 other orders for the Czech Army (including special deliveries, technical assistance, repairs, logistics, etc.);
- dealt with a total of 9 projects resulting from the Alliance obligations (EDA, EDF, ESA, NATO);
- it is a sought-after entity for contractual research, testing, analysis, and special training, both by domestic and foreign clients. A total of 567 projects fall into this area (for contracts over CZK 50,000);
- tests and certification of armoured vehicle protection for more than 90 projects were carried out for domestic and foreign con-

tractual partners;

- 5 company employees are permanent representatives of the Czech Republic in NATO expert working groups.

The company's economy is consolidated and stable; the development of the company's financial results has changed radically over the past 5 years. If before 2018 it practically reached "positive zero", i.e. it reached millions CZK, in 2022 the economic result p.c. was already comparable to, for example, Škoda Auto.

In 2018, Dipl. Eng. Pavel Čuda, Ph.D. was appointed to the position of Director and the company then adopted a new development strategy which, among other things, places greater emphasis on the commercialization of its own results. In accordance with this strategy, the company assumed responsibility for significant deliveries to the Czech Armed Forces, decisively strengthened its economy, began to modernize its infrastructure, and is gradually turning into a modern and self-confident research, development, and expert institution with the ability to produce and organize complex deliveries to the Czech Armed Forces.

## SIGNIFICANT CONTRACTS OF VWÚ

### LIGHT ARMOURED VEHICLES S-LOV-CBRN I and LOV-CBRN II

Development, production, delivery, and support during the life cycle of 40 pairs (i.e. 80 vehicles) of light armoured vehicles S-LOV-CBRN and LOV-CBRN II of strategic purpose for chemical specialists of the Czech Armed Forces (2018–2023). Several enterprises of the Czech Defence industry (e.g. Praga-Export, MEDTEC-VOP, LTR, etc.) and also the



STARKOM Communication Jammer

state enterprise VTÚ took a significant part in the contract. It was the largest cooperation in history between state enterprises established by the Czech Ministry of Defence.

### STARKOM

A highly mobile tactical communication jammer with ballistic and mine resistance, designed to conduct electronic warfare in the electromagnetic spectrum for the combat support and protection of ground and air force units of the Czech Armed Forces. Delivering total of 8 pieces. VVÚ, as the main contractor for the Ministry of Defence of the Czech Republic, carries out its own production, including a sophisticated diagnostic system, together with several companies of the Czech Defence Industry (e.g. Tatra Trucks, Tatra Defence, URC Systems, etc.).

In the field of VaVal, there are also projects with an application result, e.g. prototypes that have been successfully introduced into the arsenal of the Czech Armed Forces and are used by reconnaissance and electronic warfare specialists, for example, SRTP – directional radio-technical seeker to support C4ISR, RAPAMEP – meter band radio-technical seeker. For the benefit of chemical specialists, the Czech Armed Forces has started to use the highly sensitive detector of nerve paralytic substances DAPH and MPOTV – a modular device for the qualified collection and transport of samples contaminated with chemical, radioactive, and biological substances for SIBCRA teams. In the field of material engineering, OCHRANFR – a kit of technical means for the protection of critical military objects and infrastructure against vehicle penetration, the effects of explosion, shelling, shrapnel, and RPG attack. Furthermore, the conversion of military vehicles LOV IVECO M65E19WM 4x4 CZ/II ZST into li-

ght armoured vehicles for special use, which were successfully deployed in MALI.

### ACTIVE SHARE IN DELIVERIES OF MILITARY EQUIPMENT FOR THE CZECH ARMED FORCES

Chemical and radiation detection systems for PANDUR, TITUS vehicles, as well as equipment for KOVŠ and KOVVS premises on TITUS chassis.

### REPRESENTATION OF THE CZECH ARMED FORCES

The company is also a long-term active member of the international working groups NATO/CNAD/JCGISR and NATO/STO/CSO/SCI and NATO/STO/CSO/AVT. Within NATO/CNAD there are 3 working groups JCGISR, EWWG and CCDOWG. Within NATO/STO/SCI, there are 34 working groups, 3 NATO scientific symposia (SCI-145, 213 and SCI-319), the last of which was organized by the state enterprise. Employees of the enterprise received the NATO/STO "Scientific Achievement Award" 3 times - SCI-145, SCI-179, SCI-200 and the NATO/STO award "For a long-term contribution from 2004 to 2022".

### SERVICE SUPPORT

Realization of service support for stationary and mobile equipment of the electronic warfare units of the Czech Armed Forces in the Czech Republic and also abroad, as well as servicing of CBRN detection equipment and superstructures of implemented S-LOV-CBRN and LOV-CBRN II vehicles.

### SPECIAL TRAININGS

The training of chemical specialists with real BOL (List I of the OPCW) was successfully completed by 4,252 persons, both from the Czech Republic (Czech Armed

Forces) and (mainly) from abroad, alliance, and security organizations.

Over the past 5 years, the VVÚ has been particularly dedicated to developing its capabilities for the benefit of the Ministry of Defence of the Czech Republic. The company's long-term strategy is to be a reliable partner of the Ministry of Defence in the field of research, development, testing and acquisitions of ground military equipment, material, and logistics.

With its portfolio, the company currently represents an important departmental organization that has the infrastructure, scientific research, and development potential, experience, built-up testing facilities, and set business processes, and also has its products established in the Czech Armed Forces, which enables it to ensure the fulfilment of strategic contracts with a high degree of complexity for the Ministry of Defence of the Czech Republic.

The highly positive economic result in recent years enabled the state-owned enterprise to implement an investment strategy focused on the development of its own research and development infrastructure. The company started the preparation of two large infrastructure investments – the expansion and modernization of the laboratory building for the Chemical, Biological, and Radiation Protection Section and the construction of a multifunctional production and storage hall in a new location.

Cooperation in the field of contractual research with domestic and foreign entities is also developing successfully. Among the foreign partners, it is mainly the ever-developing cooperation with the USA in the field of CBRN and expert support to the Defence Industry within the framework of national authorities, the performance of which is entrusted to the VVÚ.

The quality of the results of VVÚ's work was exceptionally recognized at the International Trade Fair of Defence and Security Technologies IDET 2023, where the expert committee awarded two Golden IDET 2023 prizes to VVÚ for the exhibits "STARKOM Communication Jammer" and "DAPH Highly Sensitive Detector of Nerve Paralytic Substances", which was, among other things, the first time in the history of the IDET Trade Fair, when the expert committee awarded two such prizes to one exhibitor.



# News from World

## Polish MOD to Acquire Batch of Spike LR Missiles in a New Deal with RAFAEL & POLISH MESKO

The Polish Ministry of Defense, through its Armament Authority, announced that it is purchasing hundreds of SPIKE LR Missiles through RAFAEL's local industrial partner, MESKO, in a deal worth around 100 Million Dollars.

As RAFAEL's local Polish industrial partner, MESKO has already manufactured SPIKE Missiles for the Polish MOD, and this will be the third such deal involving the SPIKE Missile Family. MESKO and RAFAEL have collaborated in working with the Polish market since 2003, allowing for the sale of completely "Poland-ized" missiles to be provided for the Polish user. The robust local manufacturing capabilities have provided the Polish MOD with over 3,000 SPIKE missiles that are entirely Polish-made.

The legacy of success between RAFAEL and MESKO has brought about yet another achievement. Through 20 years of joint work, the companies have helped support the Polish defense establishment in securing the country's valued assets and providing its armed forces with the most sophisticated technology of its kind in the world.

In keeping with RAFAEL's global strategy, the support of local industry and allowing for not only technology transfer but also know-how has brou-



ght about another example of local industrial success and a thriving global partnership. This latest agreement further strengthens the existing relationship, and more similar deals are expected in the future.

**Executive Vice President Dr. Ran Gozali, Head of Land & Naval Systems Directorate:**

"The SPIKE Missile Family has been sup-

porting the defense capabilities of the Polish MOD for some 20 years. We are proud to be building on our longstanding partnership with Mesko, and are confident that there will be more agreements in the future. Building bridges with industrial partners around the globe is part of RAFAEL's global strategy, and here we see how those bridges enable collaboration and better defense for our friends and allies."

## IDV Announces the Launch of IDV Robotics

IDV (Iveco Defence Vehicles), a global leader dedicated to delivering innovative automotive and protection solutions to meet the needs of military customers worldwide, is thrilled to unveil a pivotal transformation in its innovation journey. The company is pleased to announce the rebranding and evolution of the distinguished UK-based specialist Robotics and Autonomous Systems entity MIRA UGV as IDV Robotics. The name change follows IDV's acquisition

of a majority stake in MIRA UGV, the Uncrewed Ground Vehicle (UGV) division of HORIBA MIRA, in January 2023. The 2023 edition of DSEI, taking place from the 12th to the 15th of September 2023, was the occasion at which IDV will officially launch IDV Robotics and exhibit its multirole UGV platform (VIKING platform). IDV Robotics, a trailblazing technology company at the forefront of cutting-edge UGV and Robotic Autonomous Systems (RAS) solutions, is

accelerating the development of these revolutionary technologies, promising to enhance operational efficiency and save lives across diverse terrains and missions. The fusion of a state-of-the-art navigation and autonomy technology stack with a range of vehicle platforms underscores IDV Robotics' commitment to delivering unparalleled RAS solutions for the UK Ministry of Defence (MoD) and all the most advanced Armed Forces all around the world.



A focal point of our endeavours lies in empowering critical missions such as Reconnaissance, Fire Support, Last Mile Resupply, Casualty Evacuation, and CBRN, establishing IDV Robotics as a preeminent supplier to the global defence industry. The newly formed IDV Robotics company is spearheading innovative, sector-specific technologies from its UK-base, catering to the ever-evolving demands of the UK MoD and its strategic allies. The tech-

nological highlights encompass an array of groundbreaking achievements:

**VIKING:** A high-mobility, multirole UGV platform.

**MACE:** IDV Robotics' proprietary autonomy stack, seamlessly integrated across a spectrum of military vehicles.

**Unparalleled Autonomy:** Mastery in remote control, semi-autonomous, and autonomous operations across challenging terrains.

**GNSS Denied Navigation:** Unrivalled navigation capability even in GNSS-denied environments.

**Advanced Terrain Recognition:** Cutting-edge object and terrain identification, complemented by next-level off-road routing.

**Unified Ground-Air Integration:** Holistic control, uniting Unmanned Aerial Vehicles (UAVs) and UGVs for seamless ground-to-air RAS integration.

## Trophy APS of the new Leopard 2 A8 MBT for Germany and Norway

EuroTrophy GmbH announces that it has been awarded a contract from KNDS (KMW+NEXTER Defense Systems) for the Leopard 2 A8 programs for Germany and Norway. KNDS is the result of the association of Krauss-Maffei Wegmann and Nexter, based in Germany and France and forming the European leader in Land Defense systems. The active protection system Trophy has been selected by KNDS as part of its new standard configuration defined as "Leopard 2 A8."

With this achievement, Trophy has become the most successful active protection system integrated on Western Main Battle Tanks including Leopard 2, Abrams M1 and Merkava IV, as well as lighter platforms such as the Namer APC and other





wheeled and tracked IFVs.

During February 2023, the Norwegian Defence Materiel Agency (NDMA) had commissioned KNDS with the delivery of 54 Leopard 2 A8 Main Battle Tanks, all to be equipped with the Trophy active protection system. Furthermore, in May 2023, the Federal Acquisition Office of the German Armed Forces (BAAINBw) has signed a framework agreement with KMW for the delivery of up to 123 Leopard 2 in A8 standard configuration.

EuroTrophy is the European hub of the Trophy APS. Based in Germany, the company is the only provider of a European made, combat proven, NATO fielded Active Protection System.

The company also provides a wide range of services such as vehicle integration support, maintenance and related intro-

duction-into-service and through-life support of its APS. EuroTrophy is dedicated to the European defense community and is committed to supplying state of the art life-saving capabilities.

*EuroTrophy GmbH*

#### **LEOPARD 2 A8 version: new reference configuration**

Krauss-Maffei Wegmann (KMW) and the Norwegian Defence Materiel Agency (NDMA) have agreed to align the nomenclature of the 54 new LEOPARD 2 Main Battle Tanks contracted in March 2023 with that of the German procurement office for the German LEOPARD 2 replenishment, as the Norwegian LEOPARD 2 has all the characteristics of the redefined

LEOPARD 2 A8 configuration status. The new Norwegian Main Battle Tank will therefore be known as MBT LEOPARD 2 A8 NOR.

The German procurement authority introduced the LEOPARD 2 A8 configuration, as it is a new production and includes the integration of the Active Protection System TROPHY from company EuroTrophy. The MBT LEOPARD 2 A8 NOR has additional features compared to the German A8 version, for example the integrated Norwegian ICS/CORTEX system from the Norwegian company Kongsberg. This system reconfigures data transfer in the MBT and communication with other combat systems.

Krauss-Maffei Wegmann

## RAFAEL Showcasing TROPHY APS as System is Set to Spearhead Challenger 3's Defence



RAFAEL, a global leader in advanced defence technologies, proudly announces its achievement in securing a £20 million contract from the UK Ministry of Defence (MOD) for the cutting-edge TROPHY Active Protection System (APS). This milestone marks a significant stride towards enhancing the defensive capabilities of the Challenger 3 Main Battle Tanks (MBTs) and highlights RAFAEL's participation in DSEI 2023.

Through rigorous evaluation, the UK MOD recognised the TROPHY APS as an indispensable addition to safeguard the Challenger 3 MBTs and their esteemed crew members against modern battlefield threats. The TROPHY APS

boasts a proven track record of success, having been operational and combat-proven in various scenarios worldwide. RAFAEL, in collaboration with the United Kingdom's Ministry of Defence, successfully completed the 2nd phase of integrating the TROPHY Active Protective System (APS) on the Challenger 3 (CR3). A series of live fire tests, conducted towards the end of 2022, demonstrated the system's effectiveness as it intercepted well over 90% of threats targeting the CR3 representative tank fitted with TROPHY APS.

Dr. Ran Gozali, Executive Vice President, GM Land & Naval Division at Rafael Advanced Defence Systems, "we are encouraged by the latest tests, praising TROPHY's effectiveness and RAFAEL's proficiency in integrating the system on yet another platform. The collaboration with the UK MOD is set to continue, propelling further successes in the future, as the project heads towards its third

and final phase of integration, instilling greater confidence in TROPHY's ability to ensure fortified defence for the UK and its troops."

Developed by RAFAEL in response to successful anti-armour attacks, the TROPHY APS system provides advanced, battle-proven protection against missile threats and cruise missiles while identifying the origin of enemy fire for immediate response. As the world's only fully integrated and combat-proven active protection system, the TROPHY system has been effectively installed on the Merkava tanks of the Israeli Armed Forces since 2010, the Namer active protection systems, four Abrams MBT brigades of the US Army, and was successfully tested on a German Leopard 2 in 2021. In addition, the system was relatively easily integrated into a variety of platforms, including AIO turrets for the infantry fighting vehicle and turretless 8x8 armoured vehicles. With more than 2,000,000 operating hours and more than 5,400 successful operational tests, the TROPHY system is now being contracted for series production of more than 2,000 systems.

RAFAEL  
Photo: MoD UK

# Enforce Tac 2024 Includes Established Highlights and a Major Premiere



“Three days, three halls, and a wealth of highlights,” says Isabelle Teufert, Director of Enforce Tac, as she looks forward to the upcoming trade fair from 26 to 28 February 2024. The enormous growth in visitor numbers and display area at previous events showed that a two-day event was not long enough. Enforce Tac 2024 will therefore for the first time be held over three days in three exhibition halls with even more space. An exciting new feature will also make its debut.

## See various products live in action at the Enforce Tac Village

The special premiere at Enforce Tac 2024 is the Enforce Tac Village, a realistic outdoor training ground where exhibitor products are presented in various law enforcement and military scenarios. The Enforce Tac team developed the Village along with two strong partners in line with the motto “dynamic.tangible.live”. The project team is made up of former and current members of military special forces and police tactical units. Their wealth of experience in special and custo-

mized training and expertise in scenario building guarantee a great experience. PRORETA Tactical GmbH is responsible for the infrastructure, while OF Operative Fähigkeiten GmbH and the Airborne Medical Group will oversee the planning and execution of the tactical scenarios. Visitors to Enforce Tac 2024 can look forward to the various scenarios four times a day. The on-site experience will also be live-streamed, allowing the action to be followed on other forms of media as well.

## Established highlights in the supporting programme “Blackbox” and Enforce Tac TV

For the second time now, exhibitors at Enforce Tac will have a suitable environment to showcase the capabilities of their equipment that is specifically designed for low-light scenarios or the detection of temperature profiles. In 2024, these products will be shown in display cases next to the “Blackbox” complete with descriptions and exhibitor stand numbers. They can then be tested out in the company of the relevant specialists.

The YouTube format Enforce Tac TV will go into its third round in 2024. The project team is taking a new approach by moving away from stationary recordings to deploy mobile camera crews. The aim is to make the exhibitor stands – which are often associated with considerable investment – the key platform for the companies’ respective product highlights.

## Industry requirements identified and implemented

Enforce Tac 2024 is making a gross display area of 29,940 m<sup>2</sup> available to exhibitors. That’s 7,740 m<sup>2</sup> more than in 2023. More than 90% of the display area has already been booked. “Our strategy appears to be in step with the requirements of the industry,” Teufert is convinced. “We didn’t decide lightly on the three-day event and extra display area but following in-depth discussions with our exhibitors and visitors. Moreover, the focus will continue to be on internal and external security. We would like to offer our industry a suitable platform for developing promising opportunities as we work together to strengthen the internal and external security of Germany and the rest of Europe – with sufficient time for discussion and sufficient space for the growing diversity of exhibitors taking part,” Teufert concludes.





# PBS Velka Bites will Multiply Production in the Segment of Missile and Drone Engines

The company outlined its future plans during the visit of Defence Minister Jana Černochová.



The company PBS Velka Bites, one of the largest manufacturers of aircraft engines, aircraft components, power units, and cryogenic solutions, will double its production in the coming year. The main reason for this expansion is the increased demand for engines used in cruise missiles and drones. These products are primarily supplied to the USA, NATO countries, and selected nations in Southeast Asia. Missiles equipped with engines produced by PBS are also deployed in conflicts in Ukraine. The Minister of Defence, Jana Černochová, was also convinced of the high level of development and production capabilities at PBS Velka Bites during her visit.

"We fully recognise the current strong demand for security and defence solutions in the free democratic world. We are adjusting our production accordingly, with plans to double it in the near future. This significant expansion will strengthen our presence within the defence engine sector, especially in our key markets, which are the United States and Europe. Engines manufactured in our company are also

used in deliveries to Ukraine," says Milan Macholán, CEO of PBS Velka Bites.

Additionally, the expansion of production will result in an increased workforce at the manufacturing facility over the next few years.

However, PBS Velka Bites also anticipates growth in various other segments of its operations and production, such as the development of components for aircraft, helicopters, and unmanned aerial vehicles. The company's strategy in this regard includes close and direct cooperation with globally significant European, American, and Ukrainian partners, with a focus on developing innovative solutions to meet customer requirements. This includes areas such as power units for aircraft and helicopters, where PBS Velka Bites stands among only four companies worldwide with EASA civil certification.

"During my visit, I was convinced that PBS Velka Bites rightfully belongs among the strategic companies of the Czech aerospace industry, and at the same time, it

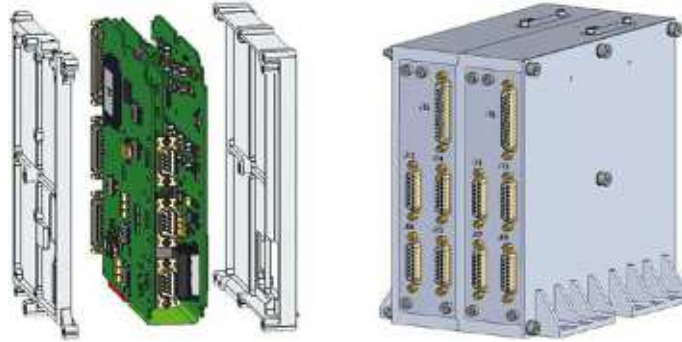
is a crucial partner for the fulfilment of our defence commitments. The company is involved in a number of key defence projects and is a significant player for major defence aerospace manufacturers, especially in the USA and Europe. I was pleased to learn more about the current production and future plans, which signify the strengthening of competitiveness for the entire Czech Republic within the aerospace and defence industry," stated Defence Minister Jana Černochová.

However, the success of the PBS Group in recent months unfortunately also brings more frequent so-called hybrid threats. "These are attempts to penetrate the company's internal systems or attempts to discredit or acquire the company. We observe this negative trend primarily in connection with our increased deliveries to aid Ukraine," says Milan Macholán, CEO of PBS Velka Bites. "Fortunately, we can rely on the trust and support of various institutions in the Czech Republic and on the international stage," adds Milan Macholán.

# Development of a Clever Avionic



DEFENCE s.r.o., as a part of ESC AEROSPACE, is a company engaged in the development of technologies focused on a wide range of unique customer applications, not only in the field of defence, but also in the civilian sector. ESC is one of the leading companies in the Czech Republic with extensive knowledge and practical experience in the development of hardware and software solutions for AIR and SPACE missions.



The gained experience are currently applied by the ESC in a number of EDF projects focused on the development of smart ammunition and avionics for the control of the current field by synthesized current. In the field of smart ammunition the ESC is involved e.g. in the development of:

- i) the power management system,
- ii) the computational unit with integrated RTOS (real-time operating system) resistant

to initial acceleration,  
iii) the navigation solution with a high level of resistance to jamming/spoofing.

All ammunition related activities are with many constraints, e.g. form factor, high performance, low power consumption, EMC compliant, high reliability etc., which lead to unique solution with application of new & sustainable technologies. The same applies to the development of avionic components

for the control system of so-called "synthetic jet" actuators, where high energy efficiency, low distortion of control voltage and high power input are crucial.

Current development activities present a major challenge in both HW and SW solutions, leading to a high level of innovation and the need to subject the components and developed systems to their performance

and operational limits. Within all R&D phases all components of interest are deeply studied, analysed and tested under simulated environment in laboratories and in fields. These activities bring new knowledge in their usage which would not be possible without deep understanding of the systems' limits. Practical knowledge and experience enables the use of those systems/components elsewhere and thus extend their applicability and areas of interest of the ESC.

## VOP CZ is being Modernized for the Czech Army

VOP CZ, as a state enterprise of the Ministry of Defence of the Czech Republic, is actively investing in the modernization of its operations for the needs of the Czech Armed Forces in the 21<sup>st</sup> century. The war in Ukraine has clearly demonstrated the necessity and need to have not only a well-equipped army, but also a well-secured service operation. And this is the primary purpose of the state enterprise VOP CZ.



During April last year, VOP CZ completed the next phase of investments in technologies worth over CZK 44 million, which will not only increase the company's production capacity or self-sufficiency, but also reduce the energy intensity of production. While the current wave of investment was in production equipment, in the next phase the company will also invest in photovol-

taics, which will cover up to 16 % of the company's electricity consumption and reduce its carbon footprint by 15.6 %.

"By investing in modernization or energy-saving measures, we are strengthening our self-sufficiency and our key mission, which is the servicing and repair

of ground military equipment for the Czech Army," explains Martin Šturala, the company's interim CEO.

The investment in VOP CZ's technologies comes at a time when the Czech defence industry is actively participating in the increased demand for military equipment on the international market.

The state-owned enterprise will play a major role, for example, in the Czech Army's largest

ever acquisition project of ground equipment, which is the acquisition of 246 pieces of CV90 infantry fighting vehicles from BAE Systems. The final assembly of the CV90 vehicle will take place in the VOP CZ workshops. The delivery of the first armoured vehicles to the Czech Army is scheduled for 2026.



# DEL: We Teach Machines to do their Job!

DEL Group has been a leader in robotics, process automation and engineering since 1995. It also manufactures electrical equipment, switchboards and control panels, supplies photovoltaic power plants and offers solutions for electromobility. The DEL Group also includes the Slovak power electronics manufacturer NES Nová Dubnica.

Our customers are mainly in Europe, but deliveries are directed worldwide. These include automotive, heavy and light industry, energy, engineering and defence.

## Trends: automation and robotics

From idea to implementation. As an engineering company, DEL offers comprehensive engineering. Both for new process lines and for the modernization of existing ones. Our engineers and designers always propose solutions tailored to your needs. From 3D model to digital simulation to implementation. At DEL we follow technological trends and use the results of research and development. This is how we address our customers with new approaches. DEL is also a founding member of the National Centre for Indust-



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ry 4.0, which connects the world of science with the world of industry. We are also a certified supplier to the nuclear power industry. We have great experience in the application of robotic technologies. We do not only deal with material handling, semi-finished products or products. Today, thanks to the connection with cameras and sensors, we teach robots at DEL to do things that seemed unthinkable a few years ago. Of course, digitisation and production data collection are also part of the solution. We are able to

measure and evaluate these, which is essential to increase efficiency.

DEL is therefore the right partner for the robotization, automation or digitalization of your production processes. Our portfolio of products and services is truly broad. And our photovoltaic power plants are also in great demand. Working with us will not only help you to discover new technologies, but also to streamline your production processes and thus save you time and money. Just get in touch with us.

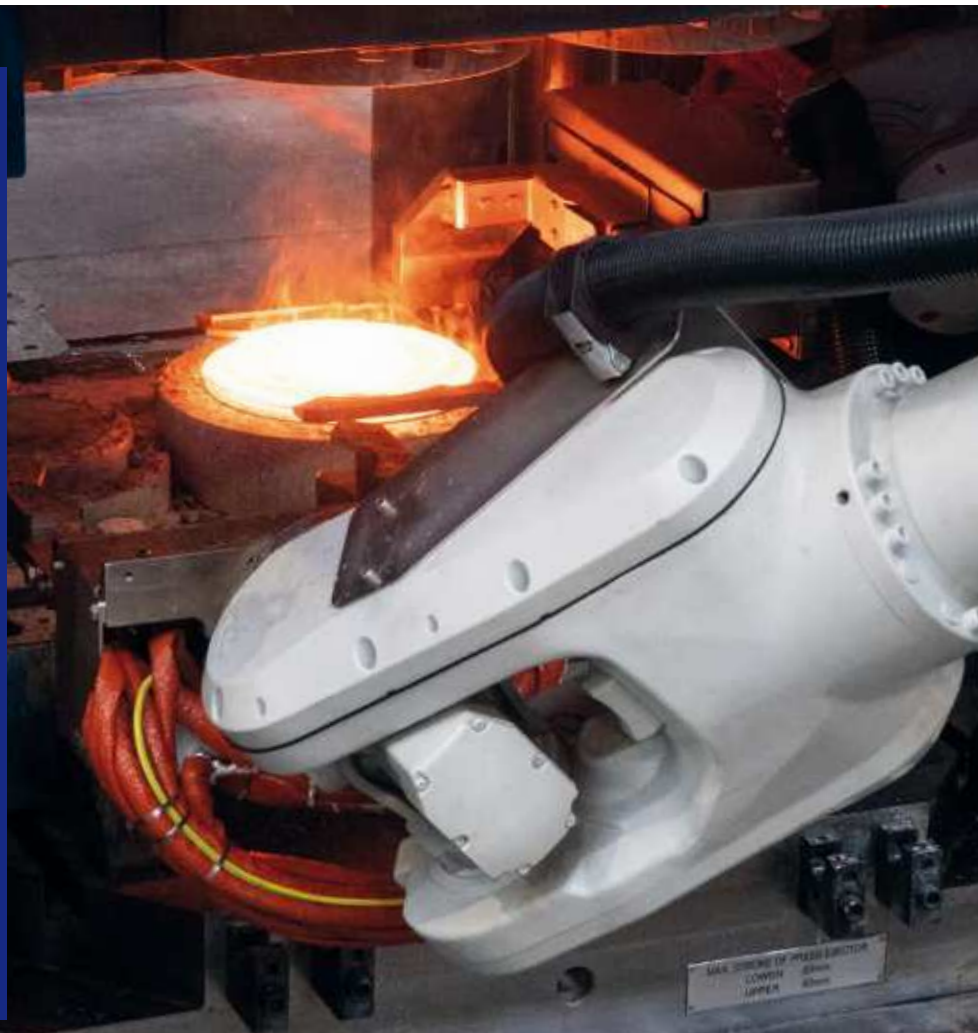


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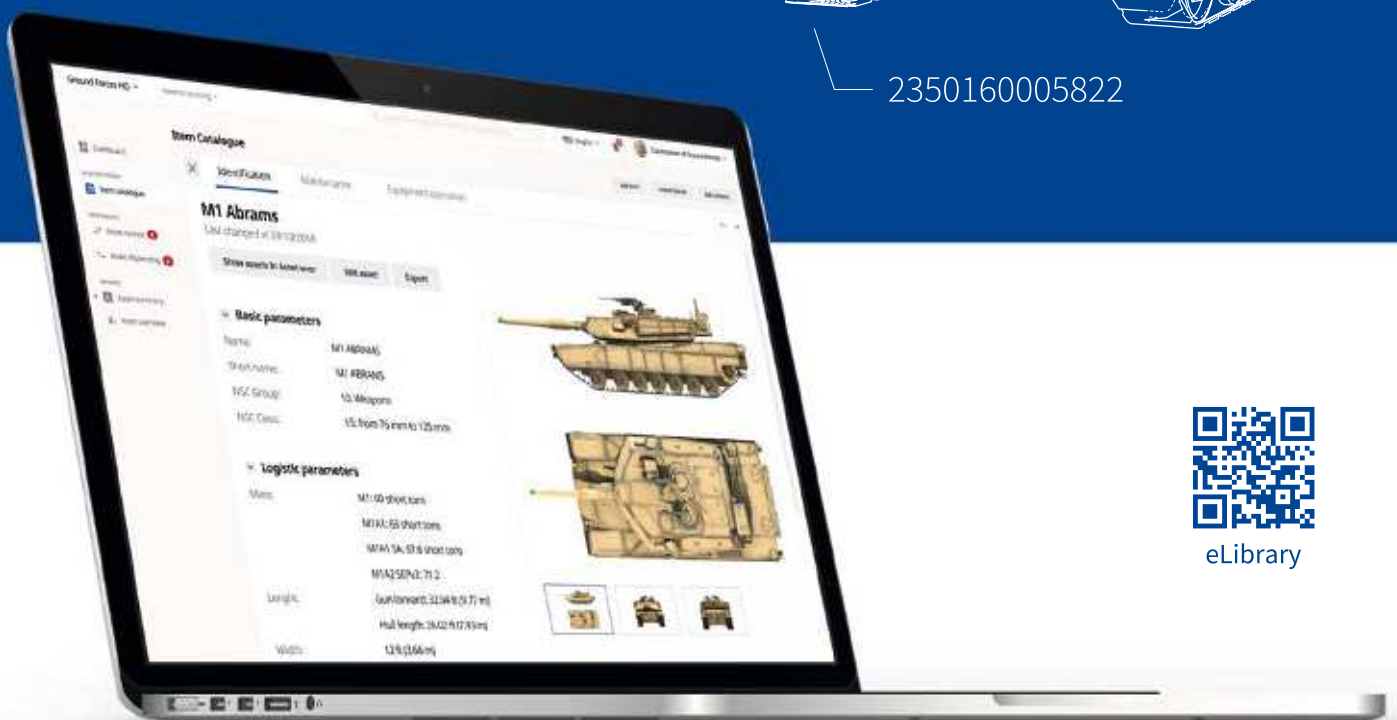
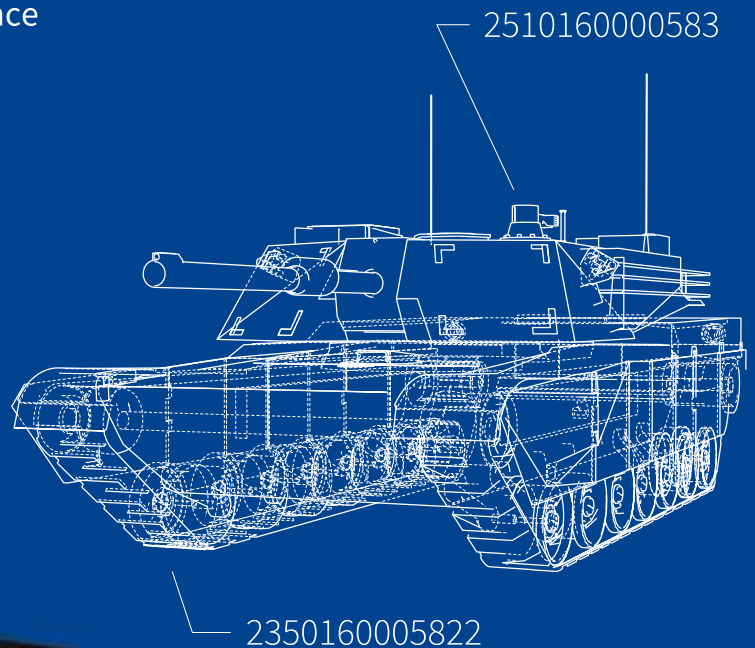
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