

# Czech Defence Industry & Security Review®

3/2018 | online  | [www.msline.cz](http://www.msline.cz)

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29. 5.–1. 6. 2019  
BRNO, CZECH REPUBLIC

## IDET, PYROS AND ISET 2019: SECURITY FAIRS WILL OPEN NEW OPPORTUNITIES FOR BUSINESS

Security has become a clear priority these days. At this time of increased risks deriving from new outbreaks of war, terrorist attacks as well as other threats, governments do not hesitate to invest in defense and security technologies. Along with that the importance of the defense industry is growing, which has traditionally a strong position in the Czech Republic. Companies present their new products aimed for security forces at trade fairs, to which the Brno's IDET has belonged since 1993. Next year on the verge of May and June, its fifteenth edition will be held, once again in partnership with the PYROS and ISET fairs, which present fire and safety equipment and services. There is considerable interest in participation already long time before, because both the Ministry of Defense and the Czech Police and Fire Rescue Brigade of the Czech Republic increase their budgets for medium-term purchasing plans.

IDET forms an essential platform for the presentation of the Czech defense and security industry. Just like in previous years, it will offer the exhibiting firms direct contacts with both domestic and international customers. As an exhibition of defense technologies for Central and Eastern Europe, it is regularly attended by the Ministries of Defense of Poland, Hungary, Slovakia and other countries; NATO is usually directly represented with an exhibition stand here, and defense sector delegations come from dozens of countries all around the world. A partner of this trade fair, the Association of Defense and Security Industry of the Czech Republic brings together 110 member companies that are very successful in foreign markets with weapons, security systems and technologies. Already nowadays they export about 80 percent of their products and their application possibilities continue to grow; in fact, sales of armament companies grow globally, and the fastest growth is right in Europe.

The attractiveness of the IDET International Exhibition of Defense and Security Technologies is enhanced by its interconnection with the PYROS International Trade Fair of Fire Fighting Equipment and Services and the ISET International Security Technology and Services Fair. This shamrock of SECURITY FAIRS hence covers with its range of exhibits the entire integrated rescue system, consisting of the army, police and fire brigade. All three components of the Integrated Rescue System work together very closely and often use the same equipment, information technology, communication means, weapons and vehicles. The Brno trade fairs hence give an overview of the entire military and civilian security and above all multiply the possibilities for exhibitors to establish themselves as suppliers for the various components of the integrated rescue system. Recently published acquisition intentions in the medium term open a variety of opportunities for that.

A series of modernization projects have been announced by the **Czech Army**, which in the context of the deteriorating security situation increases the investments into its technical equipment. By 2020, the Czech Republic defense expenditure should rise to 1.4% of GDP. The goal is namely the modernization of ground forces, and the priority objectives include the modernization or replacement of obsolete BMP-2 armored vehicles and a purchase of 50 NATO caliber cannons, which will replace the ending Dana howitzers. The main armament projects of the Army of the Czech Republic in the medium term include also purchases of mobile radiolocators, light multipurpose helicopters, command-staff and radio communication wheeled armored vehicles and special vehicles for the chemical unit. At the same time project named 'Soldier of the 21st Century' continues, the RBS air defense system modernization is under preparation, as well as the acquisition of SHORAD air defense systems, development of a new global data network and others.





The **Fire Rescue Brigade of the Czech Republic** is also preparing an extensive modernization of its individual components virtually in all covered areas. Replacement of firefighting rescue vehicles, equipment and material, as well as investments into information technology and control centers are counted on. The announced purchases also affect the means and material for the protection of property against floods, as well as engineering and other equipment for the elimination of consequences of explosions and other disasters, equipment for detecting and removing the effects of chemical and industrial accidents, and last but not least, equipment for rescue and humanitarian operations.

The **Police of the Czech Republic** in the medium horizon will be purchasing multipurpose helicopters, off-road vehicles, information technology and means of communication. In the pipeline are also modifications of guns and investments into optical apparatuses, vehicle replacements and basic equipment for police officers, as well as purchases of new means of personal protection – helmets and bullet-proof jackets. The ISET 2019 fair, with topic of cyber security, will be an opportunity for a comprehensive presentation of technologies for the protection and safety of life and property.

The whole shamrock of SECURITY FAIRS 2019 will then demonstrate the capabilities of individual components of the security system to face the current threats in case of emergency events in the Czech Republic. Great interest in the exhibits is expected from the public and above all from domestic and international professionals. Moreover, the Brno Exhibition Centre allows presenting the equipment directly in action in a unique outdoor terrain polygon, where attractive demonstrations of various opportunities of utilization take place. The fairs will also feature a traditionally high-quality extensive specialized supporting programme with international conferences and seminars. Brno University of Defense is preparing the CATE (Community - Army - Technology - Environment) conference and the Faculty of Social Sciences of the Charles University is preparing an international event called Safe Czechia in a Secure Europe. Part of the fair is also a prestigious competition for the best innovative IDET Gold exhibits.

During the last edition in 2017, the SECURITY FAIRS were attended by more than 32 thousand visitors from 48 countries, and official army delegations arrived from 17 countries.

The deadline for applications associated with the price advantage of participation is 30 November of 2018.

[www.idet.eu](http://www.idet.eu)

BVV Trade Fairs Brno  
Výstaviště 405/1  
CZ – 603 00  
tel.: +420 541 152 926  
e-mail: [idet@bvv.cz](mailto:idet@bvv.cz)  
[www.idet.eu](http://www.idet.eu)



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Brno

# EDITORIAL

## Dear readers,

"Our security cannot be taken for granted, and there is no prosperity without security" is the motto of the NATO Days and Czech Air Force Days event held in Ostrava on September 15 and 16, of which the MS Line Publishing House is a media partner. The outstanding event has had a general partner for two years now, Aero Vodochody, the most important and largest Czech aircraft manufacturer. You will learn more about its L-39NG project undertaken with a financial participation of Omnipol on pages 20 and 21.

I must, however, mention yet another, no less important autumn event of which we are also a media partner for the Czech Republic, namely the FUTURE FORCES FORUM held on October 17 to 19 in Prague. It represents a new concept of events and activities focused on long-term support of both domestic and foreign partners of local industries, science, research and education in the field of defence and security.

On the occasion of the events mentioned above, we asked, after a year, Director General of the Customs Administration of

the Czech Republic Brigadier General Milan Pouliček, M.A., for an interview, who mentions, inter alia, the key prerequisites of proper performance of the Customs Administration's duties. The following pages provide a brief outline of the development strategy of the Fire Rescue Service of the Czech Republic, including how the FRS is expected to look like in 2021. There is also an interview concerning NSPA activities and the involvement of Czech defence industry companies in the agency.

By way of conclusion, I would like to mention globally successful Czech companies which will present their unique portfolios and new products in this issue, for example Česká zbrojovka, REDO, Explosia, Koutný, AURA, AGADOS, ERA, OPTOKON, MESIT and many others. I will look forward to meeting you at the events mentioned above and our joint MS Line/Defence and Security Industry Association of the Czech Republic stand at the Future Forces Forum.

Šárka Cook  
Editor-in-chief



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Publishing House: Military System Line, s.r.o., Vykáň 82, 289 15 Kounice, Czech Republic, phone: +420 773 990 626, e-mail: info@msline.cz, www.msline.cz • Editor in Chief: Šárka Cook • Deputy Editor in Chief: Miloš Soukup • Professional Editors: Šárka Cook, Miloš Soukup, Antonín Svěrák, Miloslava Miklíková, Radek Bár • Head of Advertising Office: Eva Soukupová • Graphic design: Jiří Kuneš, www.carpia.cz • Internet Manager: Soliter-polygrafická společnost, s.r.o. • Distribution: MS Line, s.r.o., Digital-ICT, s.r.o. • Translator's Agency: Jiří Mareš, Eva Soukupová • Print: Magnus I s.r.o. • Issue published: September 11, 2018 • Key number: MK ČR E 17413, ISSN 1802-4300 • Not for sale • Photo on the cover: AERO

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# Interview with the Director General of the Customs Administration of the Czech Republic

On the occasion of the IDET fair in 2017 where the Czech Customs participated for the second time, Brigadier Milan Poulíček, M.A., Director General of the Customs Administration of the Czech Republic, gave us the first interview. A year later, we would like to know what the Czech Customs Administration successfully achieved and what visitors of the NATO Days in September can look forward to.



**Director General, could you tell our readers how you managed to fulfil the 2017 plan (purchases of equipment and vehicles, recruitment of new employees etc.)?**

Our acquisitions are planned a year ahead and their standard cycle, from planning to financial allocations and selection and purchase of products, normally take even more than two years. Except for two ongoing purchases of specific equipment, we have succeeded in fulfilling key areas of the plan that are indispensable for the performance of our duties. We bought 122 special vehicles to equip mainly mobile su-

pervision and investigation units, Raman and infrared spectrometers, a portable X-ray machine, and a detector capable of identifying chemical substances in trace quantities. The Customs Administration launched 16 IT tenders 92 percent of which have already resulted in signed contracts for required equipment.

Although the recruitment process of the Customs Administration is specific in many respects, just like those of other security corps, we succeeded in filling 356 customs service and 170 civilian job vacancies last year. However, these figures should be

viewed as indicative only, as there was also natural attrition.

**In 2017, 6,199 items of dual-use goods were exported. The number is relatively high. How should one regard it?**

Dual-use goods are simply products that can be used for both civilian and military purposes. They are diverse – from chemical substances to sophisticated products, such as special machine tools. They also have specific or special properties. Compared to the total volume of exports, the more than 6,000 items of dual-use goods represent a relatively small but not negligible amount.

**The Customs Administration identified several cases of violation of customs regulations in foreign trade in military equipment and materiel. Could you evaluate both segments, i.e. dual-use goods and foreign trade in military equipment and materiel, in the last three years?**

Last year, we discovered 15 cases of violation of customs regulations in the field of trade in military equipment and materiel. These include, for example, products, their components and spare parts which are, due to their specific technical and design characteristics, regarded as designed or adapted for use by armed forces or security corps, or mass-used by such forces for national defense and security purposes, including ballistic materials or spare parts for vehicles or fixed- and rotary-wing aircraft. Due to the very nature of the goods, the supervision of the Customs Administration over these products is now stricter. This applies both to issuing licenses needed to





trade in military equipment and materiel and to customs proceeding during which necessary checks and inspections are always performed.

In the last three years, the volume of the trade in dual-use products and military equipment and materiel has shown a slight increase, in terms of both tonnage and value.

**Since August 1, 2017, there is a Customs Administration liaison officer at Europol HQ. Until then, there were only Czech Police liaison officers at Europol. What are the competencies and priorities of the Customs Administration liaison officer?**

Since last August, the Customs Administration of the Czech Republic has been one of thirteen Customs Administrations of EU member nations which have sent their liaison officers to the Europol HQ in The Hague. There are also two liaison officers from non-EU countries.

Our liaison officer, Lieutenant Colonel Zdeňk Polanský, is an extended arm of the Investigation Section of the Customs Administration of the Czech Republic, of which he is a member. The mandate and tasks of the liaison officer consist mainly in supporting practical and flexible international cooperation in the investigation of cases in respect whereof the Customs Administration has started criminal proceedings. These cases always include an international element, and the investigation of many of them requires cooperation of multiple states. It is thus possible to find appropriate partners in other countries, order an analysis of data stored in Europol's database, or take expeditious measures in real time. In addition to supporting specific cases,

the liaison officer also participates in the fulfilment of strategic tasks, especially through the four-year EU political cycle (EMPACT – all-union strategy of combat against serious organized crime).

Priorities of activities of the liaison officer are the same as those of the Customs Administration. His activities

are thus focused on combatting VAT and excise tax fraud, customs fraud, drug trafficking and illegal trade in arms, endangered species, or forgeries, and, last but not least, cybercrime. The liaison officer's position is thus very useful.

**How does the Customs Administration prevent imports of military equipment and materiel purchased at internet shops?**

The Customs Administration indeed encounters cases in which an individual orders goods such as night vision devices, sights, binoculars and other parts and components of arms from an internet shop. Customs authorities check parcels delivered by mail as part of customs proceedings, but the buyer does not have a clue that such goods cannot be imported

without a proper license and are subject to various prohibitions and restrictions, or that trade in such goods is banned, often focusing only on the price.

We are monitoring and checking this area. Our trained specialists who closely cooperate with other state authorities, mainly with the License Directorate of the Ministry of Industry and Trade, also play an important role in this respect. Customs officers withhold such goods so that they are unable to find their way to the internal market.

**How has the Customs Administration been preparing for an increase of low-value e-commerce consignments which will have to be customs-cleared as of January 2021?**

It will be the final EU customs legislation that will be most relevant for us, particularly in connection with the form and completion of new customs declarations applying to imports of low-value consignments (now exempt from customs duties and VAT, if their value does not exceed € 22). The changes in the legislation will be incorporated in the imports electronic system which we also intend to upgrade with a view to other modifications of the Customs Code. Even now the increasing volume of e-commerce transactions results in a quantum leap of the number of customs declaration forms submitted by Czech Post every year. We are aware that the situation will be even more difficult since 2021. At the EU level (DG TAXUD), customs ad-







ministrations of EU member states deal with mainly technical problems related to the acceptance, processing, and archiving huge numbers of customs declarations (30 million or more). There will have to be fun-

damental changes in customs processes and procedures, and a robust hardware base will have to be built up. The Customs Administration has decided that, insofar as the release of low-value consignments is concerned, it will use an automatic timer with a fixed time limit of up to several tens of minutes throughout the day. This mode is now applied only in a few simplified procedures. As we want to approach the issue actively, we also consider developing and deploying mobile applications for Android and iOS operating systems, which will enable the user, subject to authorization of all necessary data, to submit a customs declaration for a specific goods item directly. The matter is dealt with in close consultations with financial administration authorities.

**The traditional NATO Days in September and the IDET 2019 fair mentioned above are getting closer. Will the Customs Administration participate in them again, and what can their visitors look forward to?**

Just like every year, the Customs Administration will take part in the NATO Days this year as well. In addition to a stationary stand focused on the history of customs

services, a display of goods subject to CI-TES and apprehended goods violating intellectual property rights, there will also be examples of unusual places used in smuggling. Small dynamic demonstrations will include a presentation of our dog handlers with their animals trained in the detection of drugs, tobacco products, and banknotes. Another dynamic demonstration will be performed by the Rapid Deployment Group of the Czech Customs Administration together with their counterparts from Germany (ZUZ) and Slovakia (JSZ). Our static demonstration will traditionally be prepared by our Mobile Surveillance Unit in cooperation with their colleagues from Poland, Germany, and Slovakia. Visitors will also have an opportunity to have a look at our mobile laboratory or high-capacity X-ray machine, or have their outstanding payments, if any, checked. The public can also look forward to the Customs Administration's presence at the IDET 2019 fair.

*Thank you for the interview.  
Šárka Cook*





**Maintenance / Repair / Overhaul**  
**Modernizations**  
**Simulation technologies**  
**Training**  
**Logistics**





# Strategy on development of the FRS CR

Plans to build 9 new stations and recruit 7 hundred new firemen by 2021. Annual budget increase of 500 millions is required.

During the last three years a first, umbrella long-term Strategy of the Fire and Rescue Service of the Czech Republic (FRS CR) was being drafted by the Ministry of the Interior – Directorate General of the FRS CR in order to assess the current situation of the service and outline its strategic goals until 2021 and even until 2030.



The following text will try to briefly summarize Strategy's main parts (SWOT analysis, 2021 milestone) and key strategic goals. The implementation of this Strategy will address existing financial and personnel deficiencies and put FRS CR on path to comprehensive and sustainable development after 2021.

## Strategy as an effective tool for long-term planning and management

The Strategy is a key strategic document of the service that should bridge the gap between the security strategy at the national level, on the one side, and partial

strategic documents of the service (like Population Protection or Fire Safety policy), on the other. Moreover, its utility for the service lays also in its “umbrella” feature – bringing all tasks performed by the FRS CR together in one overarching strategy. Main priorities concerning fire and rescue service's units and coordination with other emergency services (police and ambulance) but also fire safety policy, crisis management and population protection policy are therefore knitted together in one comprehensive strategy. This contributes to transparency and fosters public trust that inputs (public funds)

have adequate outputs (public security).

Perhaps more importantly, the Strategy is also a tool to formulate long-term goals in order to make sure that capabilities of the FRS CR will, in 2021 or even 2030, correspond to changing operational, societal and technological environment and make sure that the service in the future upholds its core mission to save lives and protect property and environment. The initial vantage point of the Strategy is a combination of a SWOT analysis and strategic trends (climate change, technological developments, changing settle-



ment structure, demographics, migration and terrorism). Generally speaking we tried inform the analysis of the current state of affairs with a focused forward looking perspective. The FRS CR strengths that should be highlighted are the service's legal status, organizational structure and place within the national security system and also, crucially, high level of public support. On the other hand, long-term underfinancing of the service has led to accumulation of internal debt amounting, at the moment, to over 3 billion CZK. Situation is also complicated in the recruiting area when it comes to hiring specialists. The competitiveness of FRS CR as an employer on the labour market is not ideal especially due to lacking job benefits. When it comes to threats, we should mention inadequate level of awareness of society as a whole and authorities responsible for national defense and public security in particular with regard to prevention as a necessary basis for effective policy. Insufficiently addressed are also specific problems concerning communication with the public as an integral and crucial part of national crisis preparedness. One of these specific problems is a population's lack of practical knowledge about how to appropriately react in an emergency or a crisis. And lastly, opportunity that we see for the FRS CR in the future (should the adverse development continue) is creation of separate budgetary category (chapter) within the national budget.

#### **FRS CR in 2021: Stabilisation as a basis for post-2021 sustainable development**

The Strategy foresees that 7 hundred servicemen and civil employees will be added to ranks of the FRS CR reaching, by 2021, total number of 11,500 personnel. This way the service should fulfill conditions (number of servicemen on shift at fire station) laid down in the Ministry of the Interior decree no. 247/2001 on organization and operations of fire protection units. By 2021, FRS CR should also build 9 new fire stations in order to reach planned number of stations (from

241 to 250) and achieve optimal fire protection coverage. Nearly 5 billion CZK are planned to be spent on building these new fire stations, on fire-fighting trucks and equipment, on educational and training facilities (gaining capabilities to step up training of voluntary firefighters and other emergency services), on modernization of communication networks and more precise emergency call localization. This way should create conditions for tackling the internal debt and comprehensive and sustainable development of the FRS CR after 2021.

This is important since after 2021 financially demanding decisions await FRS CR when it comes to further development of population warning systems (e.g. remote data collection) and emergency call reception systems. Vision for the 2030 then notes that achieving stable cycle of fire-fighting trucks and equipment renewal and standardization is crucial since currently 1/6 of FRS CR trucks are obsolete. Long-term policy priority for FRS CR is also enhancing societal resilience. Firstly by setting up cross-cutting system for education and awareness raising for all groups of the population when it comes to emergency and crisis preparedness. We would like to support teaching of emergency public safety at pre-schools,

elementary and secondary schools. Secondly, we would like to be more active in supporting emergency/crisis planning, preparedness and management of municipalities.

The total cost of the Strategy implementation is, however, higher by further 2 billion CZK. 1 billion has to cover current expenditure and 1 billion to cover wages (to address personal increase but also optimize career system to maintain 4% fluctuation). In the light of this, it should be noted that budgetary increases is necessary not only for future development of the service but to prevent further deterioration of the situation as well. Annual increase of 250 million CZK is a minimum requirement in this respect.

We do think that implementation costs of this development Strategy are more than proportionate to planned benefits and hope that its transparent implementation will help the FRS CR to maintain high public support that we very appreciate.

- FRS CR -



# Helping help others

## GUMOTEX Rescue Systems products help all security services

Production is one thing. Implementation is another. But in the end products must also meet customers' expectations. Therefore, GUMOTEX Rescue Systems teams regularly attend events where representatives of customers, i.e. users, can touch and test their products themselves.



Decontamination equipment, tents for emergency accommodation, antiflood barriers. These are all tools which security services nowadays need in their work on a daily basis and which represent the latest trends in this field. Representatives of the General Directorate of the Fire Rescue Services of the Czech Republic as well as representatives of Regional Fire Rescue Services came to the training facility in Tišnov to see displays of products which have been protecting Czech firefighters for many years in life-threatening situations.

Their interest was piqued for example by a decontamination vehicle equipped with everything, including GUMOTEX Rescue Systems products, that is needed to deal with a leakage of a dangerous chemical. "Our goal is to make work of people such as members of Fire Rescue Services easier. The team of

experts at GUMOTEX continuously monitors trends and innovates their products so that we can make their difficult work easier and safer. We are pleased that they were able to literally touch everything with their hands and we believe that in dangerous situations our modern products will support them," shares Pavel Polák, Sales Manager at GUMOTEX Rescue Systems.

Firemen also had the opportunity to get acquainted with the GUMOTEX's brand-new product, an inflatable tent with an integrated decontamination shower which can be set up and taken down within 5 minutes. "Speed will be appreciated mainly by people in professions where they often find themselves in crisis situations. Tools must support them, not let them down. And our products meet that requirement," explains Pavel Polák.

The link between all products which the members of the Fire Rescue Services of the Czech Republic led by the Managing Director could try out is speed. Devices such as a decontamination shower or different types of tents can be set up and taken down within a few minutes while maintaining low weight and reliability.

Other modern tools seen in Tišnov were for example pneumatic shears the key task of which is to get an injured person out of a car wreck as soon as possible. A few years ago, firefighters were using shears weighing up to 50 kg and it was very challenging to handle them. During the demonstration they could

try out a variety of shears and a spreader which are light, easy to use and self-charging. Getting into displayed car wrecks was then almost a piece of cake.

"Keeping up with the times and having modern tools at our disposal is a key for our work. The time and nature of extraordinary events which we face is increasingly demanding. To be able to help when saving lives, health and assets effectively, fast and efficiently, we must have high-quality tools", major-general Drahoslav Ryba, Managing Director, Fire Rescue Services of the Czech Republic, said about the successful event.

GUMOTEX has been developing products for army, police, firefighters and rescue workers for more than 20 years. The company looks for solutions in terms of materials which must withstand the burning sun as well as Siberian frost, load of all kinds while maintaining low energy demands, weight and ultimately prices. While doing so, the company collaborates with the Military Research Institute and some of its inflatable tents have been catalogued for NATO.





# 18<sup>TH</sup> NATO DAYS IN OSTRAVA & 9<sup>TH</sup> CZECH AIR FORCE DAYS

**CZECH**  **REPUBLIC**



**JAS 39 GRIPEN**  
**2005**



**AVIA B-534**  
**1938**



**15 - 16 SEPTEMBER 2018**  
**LEOS JANACEK AIRPORT OSTRAVA**  
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**OSTRAVA!!!**



**ŠKODA**

*Cero* | VODOCHODY

# NSPA



## The Czech Defence and Security Industry in NSPA is year by year more successful.

JUDr. Petra Ditrichová, Ph.D., Ministry of Defence of the Czech Republic specialist on NATO legal aspects and its processes, describes activities of the NSPA. Dr. Ditrichová regularly lectures and writes on the issue both in the Czech Republic and abroad (e.g. NATO School in Oberammergau, Swedish Armed Forces International Centre – SWEDINT in Kungsangen).



Ms. Petra Ditrichová together with NSPA General Manager Mr. Peter Dohmen (NL)

### **How would you evaluate the success rate of the Czech Defence and Security Industry in international bids published by NATO Agency NSPA (NATO Support and Procurement Agency)?**

The success of the Czech Defence and Security Industry representatives in NSPA international bids is growing year by year. However, due to a changed security environment, NSPA's turnover is also significantly rising every year, and this brings a greater potential for the involvement of the Czech Defence Industry. For instance, the percentage share of the Czech Defence Industry towards the total value of contracts placed in 2017 in the Czech Republic represents only 0,69 %. Therefore, I personally see a number of possibilities for an even

closer cooperation of the Czech Defence Industry.

### **How many Czech companies were requested by NSPA to provide a proposal during the last year? How many companies did provide NSPA with their offer? How many contracts did NSPA award to Czech companies in 2017 and at what value?**

The success of any Czech company in NSPA's bids always starts with a proper registration as an NSPA supplier in the so-called "NSPA source file." Any company located in the NATO member country, which believes that their goods and/or services may be of interest to NSPA customers, can apply to register in the NSPA's source file free of charge. NSPA

solicitations for request for proposals are then automatically notified to those companies registered as suppliers, whose profile matches the parameters and specifications of the customer's request. All requests for proposals with an estimated value above EUR 80,000, which are not intended for a restricted distribution due to security reasons, are publicly available on NSPA web site. Furthermore, whenever a customer nation expresses a future need for NSPA procurement, such future business opportunity is also published by NSPA on their website. Thanks to NSPA's proactive approach, potential suppliers have the possibility to prepare, well in advance, for a possible solicitation. Therefore, the key to success is to actively monitor NSPA website ([www.nspa.nato.int](http://www.nspa.nato.int)). NSPA's statistics indicate that, in total, NSPA made 1090 requests to the Czech suppliers in 2017. Unfortunately, in 90 % of cases there was no reply from them.

As to your question regarding the number and financial value of the contracts placed in the Czech Republic, it can be stated that NSPA awarded 41 contracts in the total value of EUR 30,24 mil for 2017. This number, for instance, represents 100 % growth in the value of placed contracts in comparison with the year 2013.

**It is known that the Czech Republic is a member of the NSPA Ammunition Support Partnership. What does this membership represent for the Ministry of Defence of the Czech Republic and for the Czech Defence Industry? How much is the membership fee? Does the Ministry of Defence procure**





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**any specific military material through this Partnership? How much did the Ministry of Defence of the Czech Republic save by engaging NSPA in comparison with undertaking the procurement through its own sources in 2017?**

NSPA's Ammunition Support Partnership represents one of the most important partnerships both for NSPA and the Czech Republic. Thanks to the membership in this Partnership, representatives of the Czech Defence and Security Industry are given a priority access to requests for proposal issued by this Partnership. In practice, this means that they have a possibility to become a direct supplier to one of the 26 Ammunition Support Partnership member countries. Worth mentioning is also indirect advantage of having a possibility to become a sub-contractor to a prime contractor.

The membership fee for the Partnership is determined every year based on approved cost-sharing formula that splits among all the member countries of the Partnership. Due to the fact that NSPA is not a commercial company, but an inter-

national organization established on the no-loss-no-profit basis, the membership fee is based on the actual NSPA's costs related to the Partnership. For instance, in 2016, the membership fee amounted to EUR 65,000. It suffices to demonstrate that for the very same year the Czech Defence and Security Industry received contracts from NSPA in a total value of EUR 26,4 mil.

To your last point, the Ministry of Defence of the Czech Republic uses services of this Partnership according to the actual procurement requirements and based on evaluation of the advantage of procurement through NSPA. For instance, in 2017, the Ministry of Defence of the Czech Republic tasked Ammunition Support Partnership to procure war-heads HE-PD. Through other NSPA Partnerships and programs, the Ministry recently procured ballistic plates, night vision optics and ballistic helmets.

**What is the position of the Czech Defence Industry towards the fact that the Ministry of Defence procures from NSPA instead of having direct nego-**

**tiations with them? What is the legal framework for procuring through the NATO Agency?**

This question should be related to the representatives of the Czech Defence Industry; however, in my opinion, the above-mentioned figures objectively confirm how Czech Defence Industry greatly benefits from the Czech membership in the Ammunition Support Partnership. From the financial point of view, the most successful Czech Defence companies in the Ammunition Support Partnership are STV Group, Sellier & Bellot, and ZVI.

To your second question: The Ministry of Defence of the Czech Republic procures military material and services through NSPA in accordance with the applicable Act on Public Procurement, No. 134/2016 Coll. Section 29 of this Act provides an exclusion from the general requirement to award public contracts by using the procurement procedure in such cases where the contract is awarded according to the binding rules of an international organization. Thus, in practice, the NSPA procurement of military material and





services for the Czech Republic is conducted according to the internal rules and regulations of NSPO (NATO Support and Procurement Organisation). These regulations are always approved by all NATO member states.

**Acquisition process in the Czech Armed Forces is very lengthy. It is not an exception that it may last for a number of years (e.g. procurement of camouflage uniforms etc.). How does NSPA effectuate the whole acquisition within a dozen of days, as the entire process involves announcement of an international bid, technical evaluation of received proposals, preparation and signature of a contract etc.?**

It is important to emphasize that the acquisition process or the process of procurement of military material and services represents in its nature very complex matter. Essentially, an efficient acquisition process requires an active cooperation of all involved actors. Everything starts with a detailed specification of required material and finishes by its proper billing. NSPA's role starts at the moment when the Czech Armed Forces prepares a specification and such specification is delivered to the NSPA through the Ministry of Defence. Due to using standard terms and conditions, NSPA procurement process is predictable and relatively fast. The process is also accelerated by the above mentioned publication of Future Business Opportunities.

It is also important to have in mind that military material represents specific items which suppliers often can not simply manufacture in advance just to fill their stocks. As NSPA is a NATO agency representing requirements from 29 NATO member states including a number of partner states, due to the consolidation, it is able to secure almost continuous workload of their suppliers. For instance, NSPA currently has in place 1,200 outline agreements with its suppliers. In the end, this means that NSPA may significantly shorten the period ranging from the original customer request of military material or service to its final delivery, including the possibility of a guaranteed price.

**Apart from the Ammunition Support Partnership does the Ministry of Defence of the Czech Republic partici-**

**pate in other NSPA Partnerships? In which and what are the benefits for the Czech Armed Forces and the Czech Defence Industry?**

It is important to note that after the NATO agency reform which was concluded in 2015, NSPA is no longer just NAMSA (NATO Maintenance and Support Agency), and therefore the cooperation of the Czech Ministry of Defence with NSPA is no longer narrow. Today, NSPA represents a premier NATO Agency providing complex logistic support, including support to exercises or operations, Agency capable of leading complex acquisition projects, and delivering an integrated network of capabilities based on specific requirements.

NSPA currently manages and supports its customers in more than 90 major weapon systems in the 30 multinational Support Partnerships. Apart from the Ammunition Support Partnership, the Czech Republic is a member of other Partnerships, such as the Operational Logistic Partnership, the Unmanned Aerial Systems Support Partnership, the Partnership for strategic transportation (SALIS), the Alliance Ground Surveillance Support Partnership (AGS), or newly the Alliance Future Surveillance Control Support Partnership (AFSC).

Based on the needs and requirements of the Czech Armed Forces, there are ongoing discussions regarding participation at other NSPA Partnerships, as well.

**Is there a possibility that Czech companies would cooperate with other companies from NATO member states under the NSPA umbrella? For instance, during a modernization of some weapons systems?**

Yes naturally, especially NSPA Partnerships represent an ideal platform for establishing closer cooperation, including cooperation among suppliers from various NATO countries. Based on the suitability and Partnership's actual needs, representatives of the industry are also invited to participate in the Partnership's meetings. Finally, it is up to an individual activity and abilities of every Czech company to establish good cooperation with major contractors/suppliers and eventually to become their sub-contractor.



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System PATRIOT

**In past, NAMSA/NSPA regularly visited international fair IDET and Future Soldier Forum as a VIP guest. Will they also participate in these events in the future?**

Yes, international fairs such as IDET or Future Soldiers Forum represent important

events for establishing mutual contacts or for streamlining cooperation. NSPA representatives shall be present at Future Forces Forum organized in Prague in autumn 2018. Another possible way that Czech companies may get into direct contact with NSPA management is to participate at Czech Industry Days organized

at NSPA. The first Czech Industry Day in NSPA was held in October 2017, and it has been very highly valued by the Czech participants (see an article about the Czech Industry Day at NSPA published at this Review No. 4/2017). Apart from national industry days, NSPA also organizes industry days focused on a specific segment of military material/services. In April 2018 NSPA, held at its headquarter in Capellen, Luxembourg, an industry day focused on support of AFSC; a project intended to replace the retiring NATO Airborne Warning & Control System (AWACS) by the end of 2035. More than 100 industry participants from NATO member states were present at this event, including two Czech companies (ERA and Retia).

*Thank you for the interview and all the best for the future.*

*Eva Soukupová*

*Photos courtesy of NSPA.*



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# L-39NG

## Aviation Training Future

Just weeks left before the roll-out of the first jet aircraft, developed in the Czech Republic in the 21<sup>st</sup> century. The new aircraft follows the best traditions of Czech aerospace production. It builds on the success of the legendary L-39 Albatross and this heritage is reflected in its name - L-39NG.

The largest Czech aircraft manufacturer Aero Vodochody now makes the first so-called pre-series pieces of the new generation. Expected first flight of the L-39NG is scheduled for the end of this year. It will be fifty years after the test flight of its predecessor, the L-39 Albatross aircraft, which is the best example of the capability of the Czechoslovak aircraft production.

Almost three thousand Albatrosses produced in the seventies and eighties served as training aircraft for the Warsaw Pact armies, where they showed their excellent features. They include for example their versatility, where the L-39 aircraft provided and still provide basic, continuation and combat flight training, as light combat aircraft, as well as aircraft for aerobatics. Their excellent flight characteristics and easy controllability were proven not only by deployment in air forces of nearly 40 countries, but also by

aerobatic teams both from the former Eastern bloc (e.g. Baltic Bees, formerly also White Albatrosses ...) and from the West (Breitling Jet Team, Black Diamond Jet Team ...). Albatrosses proved in various climatic conditions and there are still hundreds of them flying around the world. The idea of the new aircraft, which will build on the best of the L-39, thus matured not only in the heads of aviation fans.

### Proper timing

Most aircraft that are currently used by the air forces around the world to train their pilots, are nearing the end of their service life and in the next ten to fifteen years they will have to be replaced. It is a huge demand, which according to estimates of the Czech aircraft manufacturer will reach the volume of 3,000 machines. The aircraft currently becoming obsolete further inclu-

de also the L-39, still the most widely used training aircraft. Therefore the proper time has come to offer their users a replacement from the proven manufacturer.

The L-39NG project proceeded from the very beginning in two directions. One was the development of an entirely new aircraft, which can replace Albatrosses at existing users, but which finds new customers as well. The second focused purely on the existing users of the L-39, for which Aero paved the opportunity to modernize the aircraft by the installing a new engine and by integrating the most advanced avionics.

### Immediate solution for the customer:

#### L-39CW

The FJ44-4M engine made by the American company Williams International, which met Aero requirements for the performance, reliability and operating costs, proved to be the most suitable for both the re-engining and for the new aircraft. Albatross with the type designation L-39CW (W for Williams) is further equipped with new avionics, ready for training of future pilots of the 4<sup>th</sup> and 5<sup>th</sup> generation aircraft.

The modernized L-39CW aircraft successfully completed the first flight already in September 2015, and has since passed flight and ground tests within the certification process, which has been completed early this year. "Aero is a holder of certification both for the installation of the new engine and for the use of the new avionics. Now we can immediately offer an available solution to the current users of the L-39 aircraft. Thanks to this milestone, we have also gained an important competition advantage in the development of the L-39NG aircraft," explained the president of Aero Vodochody Giuseppe Giordo.



Photo: Katsuhiko Tokunaga





Photo: Martin Pinkas

Concurrent processes of installation of the new engine and avionics into the fuselage of the existing L-39, along with the development of an entirely new L-39NG aircraft, which will have a new airframe, cockpit (including canopy, ejection seat, etc.) and other innovations enabled the execution of some required flight tests already now. Thanks to that, the new aircraft will be successfully brought to market already in 2020, and this move also means that the first four L-39NG aircraft, now being manufactured in Aero, will be built according to the standards of series production, and will thus be no prototypes but the so-called pre-series items.

#### News aboard L-39NG

Combination of modernization of the original aircraft with the development of the new one brings a huge benefit to existing L-39 users, who may start solving their need of upgrade of their training squadron immediately by reconstruction to the L-39CW type and only then move on to an entirely new generation aircraft. They can thus spread costly investment in the renewal of the training squadron strategically over time - first they will upgrade their Albatrosses with a new engine and avionics, and when the airframes of the L-39 come to the end of the service life, they can use these engines and avionics systems in new L-39NG aircraft.

The new L-39NG differs from the original Albatross at first glance. It does not have the characteristic fuel tanks at the wingtips. Instead, it has a "wet wing", thus a fuel tank directly integrated in the wing. The airframe became more slim thanks to the use of a more subtle engine than was the Soviet AI-25 used in the L-39, and the weight is reduced as well. The aircraft has advanced onboard systems, with the biggest changes done in the cockpit, not only inside, where modern avionics and a comfortable Martin

Baker ejection seat is waiting for the pilot, but the novelty is also the one-piece canopy and elevated position of the rear pilot. This greatly improved the outlook for both pilots from the aircraft cockpit.

#### Strong track of the Czech manufacturers

During last year, Aero completed selection of key external suppliers for the aircraft production. The result was a suitable combination of foreign and domestic suppliers. "A total of 40 major Czech companies operating in the aviation industry will be involved in the development and production of the L-39NG within the supply chain. After the full launch of the serial production, the L-39NG project will provide in Aero and in the supply chain thousands of jobs," said Giuseppe Giordo. L-39NG project partner is the Omnipol company that is financially involved in the development and the sale of the aircraft; the Czech Export Bank supported the development and production of the aircraft by credit.

Last year, Aero completed the development phase of the project and started assembly of the fuselage and wings; earlier this year, pre-serial production line was started. Currently, Aero is builds four aircraft by the serial production standards. The first and fourth item produced will be used for flight tests, the second will be prepared for static tests and the third one for fatigue tests. Roll-out of the first new L-39NG aircraft will be performed on October 12, when the aircraft first moves out of the hangar and shows to the world its final form. The first flight is then scheduled for the end of this year. The first new aircraft will head to customers in 2020.

#### The promise of success

Interest from customers for new L-39NG aircraft marks a bright future Aero and consequently also for the companies from

all over the Czech aircraft industry that joined the project to a large extent. The first candidates for L-39NG have already started to register. As the first one, Air Force of the Republic of Senegal ordered four new aircraft. These aircraft are light fighter version, which will also have the capability for complete training of pilots. "It's a very important step not only for us but for the Czech Republic, because after many years, new jet aircraft developed in the Czech Republic began selling abroad," said Giuseppe Giordo.

At the Farnborough Air Show, Aero announced two other customers. Portuguese company SkyTech, the leading provider of military aviation services, signed there with Aero binding Letter of Intent for the delivery of 10 pieces of the L-39NG jet trainer aircraft with an option for another 6 aircraft of the same type. SkyTech will commercially offer the L-39NG aircraft for training. "We want to offer air forces with a choice of planes that cover various phases of training, and can thus better match skill level of students. Thanks to that, air forces get the opportunity to train on various types of aircraft without burdening tight budgets so much. L-39NG is for us the ideal base of the squadron," said Dr. Paulo Mirpuri, president of the Sky-Tech company.

The third customer is RSW Aviation, one of the largest providers of military training for the US and for the armies around the world. With this customer Aero signed a binding Letter of Intent for the delivery of 12 pieces of the L-39NG aircraft and also for the modernization of 6 existing L-39 aircraft to L-39CW version. Thanks to the use of upgraded aircraft, the time of introduction of the L-39CW/NG into operation at the customer will be reduced. "Expansion with L-39NG strengthens our capability to prepare pilots for 4+ fighter aircraft generation. These machines suitably complement our existing fleet of aircraft and our services will be then even more attractive to customers," said David Patrick, COO of the RSW Aviation.

Aero at the moment recorded orders for 38 aircraft and has thus secured work for the next 4 - 5 years until 2022. Last year, the president of Aero Giuseppe Giordo assumed that Aero might produce up to one hundred aircraft in the next ten years. It seems that it is well-poised for that.

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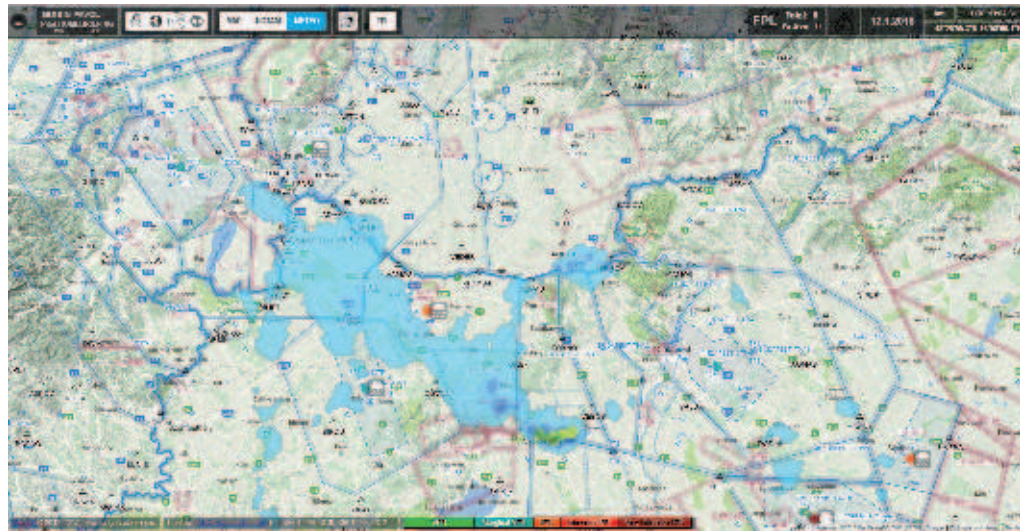
IXO ARO has been specifically designed for ATS Reporting Office (ARO/CARO) purposes for handling of flight plans and related information within IXO SYSTEM and its interfaces.

IXO NOF – this application aims to facilitate creating, editing and viewing of NOTAM messages, these being important sources of information on aerodrome and related ATM facilities.

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# Intercom system for DANA self-propelled cannon howitzer

Some users of the DANA self-propelled cannon howitzers, cal. 152 mm, produced by the arms industry of former Czechoslovakia, conduct modernizations, including upgrading of communications equipment to the C2 or complex C4I systems. The company MESIT asd (aerospace & defence), a member of the OMNIPOL group, participates in one such modernization offered by the Czechoslovak Group holding. In cooperation with the RETIA company, an internal communication system was designed and implemented, fully meeting the requirements of the weapon system crew.

The communication system of the self-propelled howitzer consists of a DICOM RF2350 transceiver and the latest version of the VICM 200 software defined intercom system, including a wireless segment based on the PR20 personal radios.

The intercom system itself is conceived for five crew members (2 in the vehicle cabin; 1 in the right turret and 2 in the left turret), with further three connecting points on the

outside of the howitzer (1 on the left turret; 1 on the right turret; 1 in the rear section of the vehicle). The entire howitzer crew has a fully-fledged connection available, both in the internal wired intercom circuit and the outer wireless intercom circuit, as well as the possibility to use radio connection (access to the combat net radio/radios).

The vehicle cabin houses the VICM 201 Cent-

ral Communication Unit (CCU) and the VICM 120 Wireless Segment Control Unit (WSCU). When radio silence is ordered, the vehicle commander can use the SILENT option on the VICM 201 Central Communication Unit to restrict the possibility of access to radio connection for the entire crew and to prevent undesirable transmission. Another option how to restrict access to radio connection is the selection of the function CDR

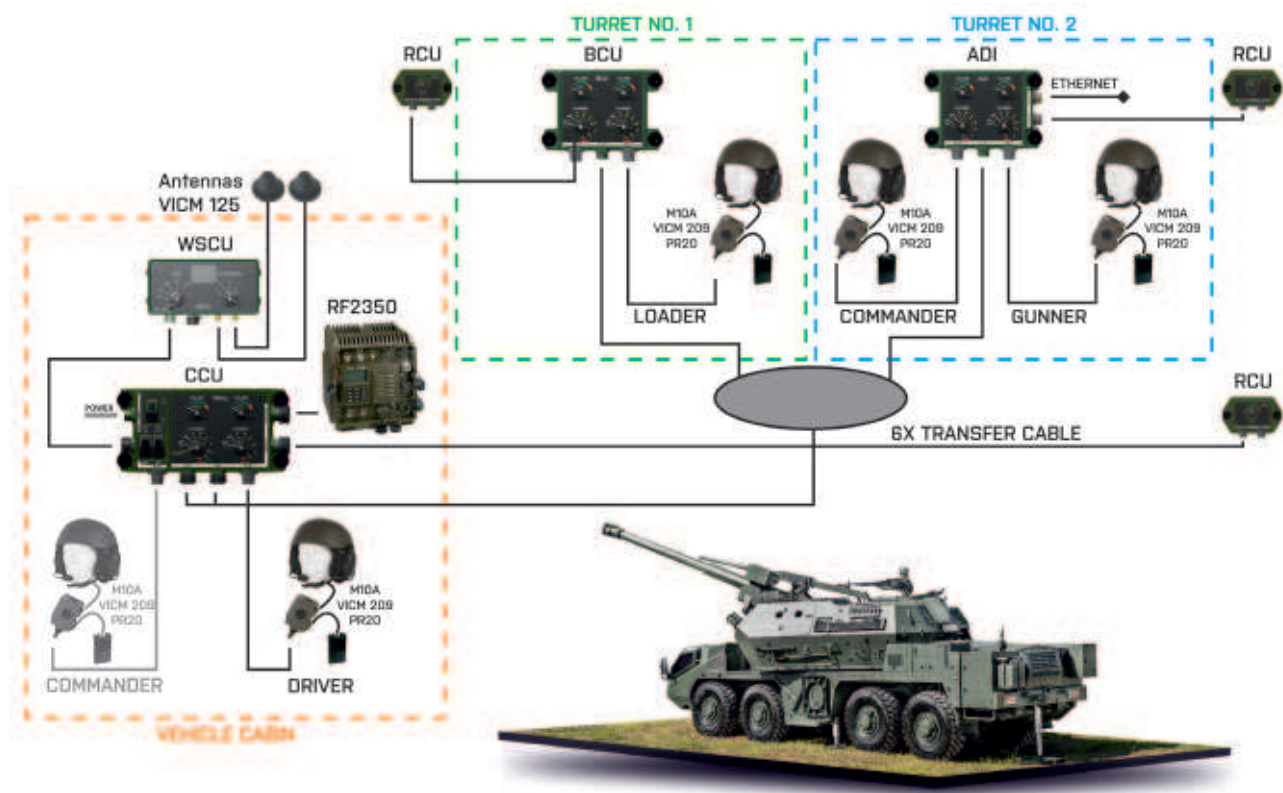


Photo: EXCALIBUR ARMY spol. s r.o. © 2018





# MESIT

ONLY (commander only). As it is already apparent from the designation of this function, when the function is used, only the commander of the vehicle crew has access to the combat net radio (radios). It is a matter of course that when the crew dismount the vehicle, direct connection of the out-of-the vehicle crew with the superior command level by means of vehicle radios can be used by retranslation of the connection through the WSCU.

The VICM 202 Basic Communication Unit (BCU) ensures the communication capability for the crew in the right turret. This unit is fitted with standard control elements for fully-fledged use of the intercom system in the following modes:

- INT ONLY (intercom only), when the user is connected to the intercom circuit only, with the listening-in of radio communication off
- INT, when the user is connected to the intercom circuit, but with the listening-in of radio communication on
- CHANNEL A to F, when the user is the operator of a selected radio and, at the same time, is allowed communication with other crew members
- CALL, when it is enabled in this unfixable mode, in special cases (e.g., when safety of crew members is compromised), to intervene in and/or interrupt communication of other crew members

The left turret is fitted with the VICM 208 Audio & Data Interface (ADI) unit, which, in addition to the standard intercom functions for the commander and gunner, enables data connecting with other vehicular systems (BMS, CBRN sensors and system, etc.). This unit, among other, conducts "translation" of digital and analogue signals generated by these systems into voice warning messages later distributed to all vehicle crew members. The variability of this unit is supplemented by an analogue audio interface, which can be used for connecting the VICM 107 Loudspeaker Unit (LU), for extending the intercom circuit by means of the VICM 205 Intercom Communication Unit (ICU), or as it is the case of this installation on the DANA self-propelled howitzer, by means of the VICM 215 Remote Communication Unit (RCU), enabling the howitzer crew to connect to the intercom circuit from the outside of the vehicle directly by connecting their headsets. There are three RCUs on the vehicle so that every important action of the crew (e.g., ammunition replenishment) is

supported by the possibility of connecting to the vehicular intercom.

Personal equipment for every member of the self-propelled howitzer crew consists of the M10A headset, VICM 209 Personal Communication Interface (PCI) and PR20 personal radio. The M10A headset, the latest model of the MESIT headset equipped with the ANR (Active Noise Reduction) technology for permanent crews of combat vehicles, is marked for excellent hearing protection parameters, so important especially for users from the ranks of self-propelled howitzer crews. The combination of M10A, VICM 209 and PR20 enables the crew to be "permanently connected", both inside the vehicle and when dismounting and moving outside of the vehicle. In itself it has an effect on the speed of preparation of the DANA self-propelled howitzer for performance of a combat task.

Although installation of the VICM 200 COMBAT software definable intercom on the DANA self-propelled howitzer belongs to more extensive ones, it is far from exhausting its large-scale possibilities and capabilities. This communication system can be used for installation of up to 26 connected users (wire connection) with the use of up to 6 combat net radios (CNR – Combat Net Radio). In addition to the already mentioned equipment, further units extending the possibilities of the VICM 200 intercom include:

- VICM 203 Radio Extension Unit (REU)
- VICM 212 Field Telephone Unit (FTI)

Furthermore, there are units extending the data and network capabilities of the intercom system:

- Central Communication Unit with VoIP module (CCUIP);
- Network Communication Unit (NCU) and
- Data Media Converter (DMC).

The Audio Interface Module unit (AIM) is used for wired linking of up to 10 intercoms together in parallel connection.

The MESIT company belongs to those few world's manufacturers who are able to assemble from their own products a complete tactical communication system usable for various combat vehicles as well as for soldiers. The company uses its long-term experience with the development and manufacture of already several generations of radio systems, intercoms and headsets.

*Vladimír Michalík, Ph.D.*

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## Aviation Electronics



# OPTOKON

## Applications for Combat Vehicles

### LMCP-7H (Light Mobile Computing Platform)

The OPTOKON C4ISR system has developed as the complete solution, which is dedicated to providing C2 services from squadron level up to battalion level. This system enables the full interoperability of radio stations, other communication technologies, as well as C4ISR systems with other NATO member armed forces.

#### The OPTOKON C4ISR system provides:

- A compact solution for tactical radio and data networks, interconnectivity with all types of modern tactical radio stations
- Complete interconnection of combat vehicle systems (C2 systems for commander, operator, and driver)
- Establishment of a C2 tactical site with SW support for C2 STAFF MIP 3.1 for planning and operation leadership, 2D, and 3D plastic table
- Establishment of a 1 Gbit tactical data network inside the vehicle as well as at the command and control site
- Video server for saving and distribution of vehicle camera system pictures, surveillance centers, UAV etc.



LMCP-7H (Light Mobile Computing Platform)

The core of this system is the **LMCP-7H** (Light Mobile Computing Platform), which is the OPTOKON compact, ultra-durable server equipped with 6th Gen Intel® Core™ CPU, two removable RAID SSD discs and 10x Gigabit Ethernet ports. The LMCP-7H supports up to 20 GB

of DDR4 memory, resulting in a reduction in overall power consumption compared to DDR3-based servers.

The LMCP-7H offers military-grade features in a rugged housing making it the ideal platform for applications in harsh and rugged environments.

The LMCP-7H can operate in harsh environments under a temperature range from -30 to 55 °C and avoids damage from sudden voltage surges due to the 10.5 V – 36 VDC input design. As it is sealed against dust and debris, our rugged line stands up to shocks, vibrations, and extreme temperatures.

The LMCP server can host many types of applications; the LRPV GEPARD LRPV solution features virtual servers for radio-routing, cameras systems, battle management system SAMET and Cisco Unified Communication Managers.

#### Field IP telephony systems

The LMCP server for IP telephony applications in field environments is an efficient central system for running Cisco IP Call Manager and related services, phonebooks, recording systems, etc. OPTOKON, a.s. developed for the needs of field hardened systems, a product line of IP phones that can be used beyond the scope of operational-tactical military networks.

Ruggedized IP phone LMIPT-41 is based on Cisco 8841 series and LMIPT-21 on Cisco 7821 technology. Together with the LMCP server and other resilient elements from OPTOKON, a.s. it forms a complete and compact solution that can be connected to other telecommunication networks as a whole through various types of voice gateways.



LMIPT-41, rugged IP phone set

The benefit of the LMCP server is the reliable centralization of telecommunication systems that meet the operational requirements of army field assets as well as conditions for working in extreme temperatures.

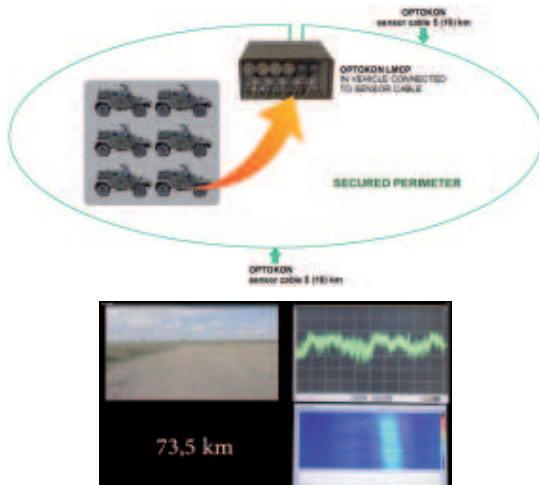
#### Perimeter security system

Principles of protecting the perimeter of stationary and mobile sites with fiber optics has been described in last edition of CDIS Review.

OPTOKON introduces the distributed optical fiber temperature and strain sensing system is a complex system based on a number of patented technologies, integrated with optical, mechanical, electronic modules and software algorithms. It features in excellent technical specifications and user-friendly interface. Owing to its fiber loop configuration, loop-sensing BOTDA can significantly enhance Brillouin signal strength, optimize SNR, improve measurement accuracy, and shorten measurement time. Using optical fiber as signal transmission and measurement media, the system has anti-jamming, anti-explosion and excellent performance of chemical resistance, is suitable for chemical, high voltage, nuclear and other dangerous environments. The real-time fault monitoring system has been widely used in important projects monitoring submarine cable, high-voltage cables, overhead lines, oil and gas pipelines, dams and bridges.

The key benefits of the LMCP server within the perimeter protection





solution are the compactness and robustness of the box, connectors, and power supply (10.5 – 36 V). These features make the whole solution highly reliable, fast and simple to use, and effective not just in terms of the power supply. After installation, the solution is maintenance-free and resistant to adverse weather conditions.

#### OPTOKON HMA harsh environment connectors

OPTOKON offers several types of optical connectors for use in harsh environment climatic conditions. These are medium-sized connectors designed to connect nodes in harsh environment conditions using fiber optic cables. Special connector designs guarantee reliable operation even in the toughest operating conditions and are available for both multimode and single mode applications.

HMA-J - Harsh environmental Expanded Beam fiber optic connector

HMA-JF - Harsh environmental ferrule connector

HMA-HX - Harsh environmental hybrid connector

The HMA-J connector benefiting from Expanded Beam technology with the precision optical alignment system provides immunity from water, mud, dust, oil and other contaminants. The HMA-J hermaphroditic coupling eliminates the need for adaptors and male and female mating halves.

#### HMA-J

Optical Loss MM - 50/125 @ 850/1300 nm 0.7 dB typ.

Optical Loss SM - 9/125 @ 1310/1550 nm 1.0 dB typ.

Return Loss - 9/125 @ 1310/1550 nm >32 dB

The HMA-JF uses 1.25 mm ferrules, which are already industry proven in both single mode and multimode applications. The unique design of the HMA-JF allows users to ensure high-performance and very low SFF insertion loss for Small Form Factor optical connectors under field conditions. The HMA-JF connector has a similar construction to the HMA-J connector and has all the benefits such as immunity from water, mud, dust, oil and other contaminants.

#### HMA-JF

Optical Loss MM - 50/125 @ 850/1300 nm 0.3 dB typ.

Optical Loss SM - 9/125 @ 1310/1550 nm 0.5 dB typ.

Return Loss - 9/125 @ 1310/1550 nm > 45 dB (typical 48 dB)



Harsh environmental Expanded Beam fiber optic connector



HMA-JF Harsh environmental ferrule connector

The new HMA-HX hybrid connector is the same as the HMA-JF con-

nectors with the exception that it offers two metallic pairs that can be used as electrical contacts to extend the connectivity of the connector.

#### HMA-HX

Optical Loss MM - 50/125 @ 850/1300 nm 0.3 dB typ.

Optical Loss SM - 9/125 @ 1310/1550 nm 0.5 dB typ.

Return Loss - 9/125 @ 1310/1550 nm > 45 dB (typical 48 dB)



HMA-HX hybrid connector with two metallic pairs

These highly durable HMA connectors can be used in military applications, heavy industries, the petrochemical industry and broadcasting applications in order to establish temporary optical networks.

#### Tactical Cable - OPK-U-DSTTAC

Manufactured by OPTOKON Kable Co., Ltd., s.r.o. Pelhřimov.

The member of OPTOKON Group

One of the most commercially successful products from OPTOKON Kable Co., Ltd., a new Czech Optical Cable Manufacturer, is a multi-purpose, durable tactical cable with polyurethane jacket.

The basic structural element of this cable is that the fibers are especially mechanically and thermally resistant, easily stripped of secondary protection, which along with the kevlar yarn forms the core of the cable. The cable sheath is made of halogen-free fire retardant polyurethane with reduced smoke.

During development, the cable was subjected to demanding testing and proven to be suitable for use in the most demanding mechanical and climatic conditions. The cable is suitable for use not only in extreme military applications, but also, due to its properties, also in various civil applications, temporary installation of critical communication lines where quick retrieval and re-use is required, especially in heavy industries, mining, and various mobile applications, etc.

#### Main features of the OPK-U-DSTTAC:

- High mechanical resistance
- Chemical resistance
- UV resistant
- Excellent flexibility, even at temperatures well below freezing
- Meets the requirements of IEC 60794-1-2, TIA / EIA-455-41 and TIA / EIA-455-25 - military requirement
- Easy stripping of secondary acrylic coating
- High resistance to extreme temperatures (+ 85 ° C, - 60 ° C)



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

We are pleased to announce that OPTOKON will be participating in the OFSEC exhibition Oman, Muscat (1.-3.10.2018), OPTOKON stand No. E8 and AFRICA COM 2018, Cape Town, South Africa (13.-15.11.2018), OPTOKON stand No. A51A. Please accept our invitation to visit us.



EUROPEAN UNION  
European Regional Development Fund  
Operational Programme Enterprise  
and Innovations for Competitiveness

# AURA

## contributes to the modernisation of the NATO Codification System



**AURA, s.r.o., nowadays possibly the biggest Czech exporter of specialized information systems focused on codification of the military materiel, closely cooperates with the NATO Group of National Directors on Codification AC/135 and other institutions and partner countries involved in the world's codification system.**

### AURA and the NATO Codification System

Codification or Cataloguing, i.e. identification and description of armour, military technology, spare parts and materiel is rightly called by the devoted ones the DNA of military logistics. The NATO Codification System (NCS) enables to identify with high accuracy required components, units, spare

parts etc., so-called items of supply, and mark them with a unique identifier – NATO Stock Number known as NSN. The use of NSN, which is understandable to armed forces of all countries involved in the NCS, helps to ensure interoperability within the international cooperation in the acquisition of equipment and spare parts, e.g. in the international military missions.

The NATO Codification System is currently used by more than 60 NATO and non-NATO countries. It is a remarkable success of AURA that 20 countries now use MC CATALOGUE Codification Software developed and exported by AURA itself. This company from Brno with approximately one hundred of permanent employees has become a match for world's giants acting in the field of

military materiel codification and even outplaced them during 30 years of its business at home and foreign markets. MC CATALOGUE, the information system for the support of codification, has become the most widely used all around the world.

### Activities of AURA in NATO

AURA development and project teams, that create and constantly improve MC CATALOGUE codification software, work mainly in the home environment including cooperation with the Czech defence department. However, they cannot do it without a close coordination of activities with NATO authorities, in which they participate and where they can interchange their experience with colleagues from abroad how to impro-



ve the alliance codification system and how to meet the requirements of each customer country. Experts from AURA participate in a number of special NATO codification structures, for example in the Transformation Steering Working Group (TSWG) established by the Allied Committee 135 (AC/135) and global codification workshops and conferences such as the World Codification Forum in Australia last year.

Every year, the users of AURA codification software meet at the MCCATALOGUE User Group. The last meeting was in Luxembourg this May.

The cooperation of Brno developers of the NATO codification software with their NATO partners is similarly important as the cooperation at the level of contract realization. A good example is Jordan as the 20th AURA customer with MC CATALOGUE, with the contract realized in cooperation with NSPA, NATO Support and Procurement Agency, who carried out the competitive tendering for the supply of this product.

#### **Specific position of AURA in NCS – NATO non-member countries**

At the beginning, AURA concentrated on export of codification software into NATO member countries and European region. Due to the focus on specific contracts custom made for individual countries, AURA has gradually become successful in other countries, namely in Brazil, Morocco, Algeria, the United Arab Emirates and Japan.

Based on requests from abroad, AURA is going to extend its export portfolio by the Logistics Information System (LIS), which has been successfully working in the defence department of the Czech Republic since 1990's.

A part of the foreign contracts realization is also the training, either in the place of the realization of the contract or in training centres in Brno. AURA was also among the initiators of NCS College at the University of Defence in Brno, the 4th run of which will be held from August to September this year.

AURA, s.r.o. is a purely Czech company with its seat in Brno. It develops specialized logistics information systems (IS) that are currently used in 20 countries worldwide. The portfolio of the company includes not only the codification tool MC CATALOGUE and Logistics Information System but also IS for documents and content management (DMS/CMS) for defence standardisation. Further it includes a civil IS, e.g. for standardisation of description of goods and services for public procurement. In Czechia and Slovakia AURA supplies the most commonly used IS for bailiffs – Judicial Officers and it is preparing a similar system for attorneys.

*by Antonín Svěrák*





Unmanned Ground Vehicle  
**TAROS V2**

## TRADITION AND KNOW-HOW

Czech state enterprise VOP CZ  
– your partner in manufacturing, repairs  
and modernization of military ground equipment



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# VISIT US AT

**PVA Expo Prague**  
17th – 19th October 2018  
Hall 3, Stand 326

# REDO

## The Producer of Textile Products for Army, Police and Armed Security Forces

The company REDO s.r.o. based in Prostějov has been on the market for textile products for the army, police and armed security forces for more than 25 years. It is an exclusively private company. REDO s.r.o. was founded in 1992 and was one of the first companies in the former Eastern bloc to supply military equipment to NATO countries.

REDO manufactures and supplies mostly textile products such as tactical and ballistic vests, backpacks, pouches, holsters and carrier straps. The core product range that the company is currently focusing on is a range of ballistic vests. These products include lightweight ballistic vests, heavy ballistic vests, including vests featuring quick-release vests, and ballistic vests with stab protection. All ballistic protection products are subject to thorough development and testing in renowned testing centers both in the Czech Republic and abroad. The company is able to deliver ballistic protection exactly to the customer's wishes and choose the appropriate level of protection according to the assignment. Ballistic inserts are normally supplied according to standards used in European countries, such as US Standard MIL STD NIJ 0101.04, Czech Standard ČSN 39 5360 or German VPAM. Of course we also provide other standards according to the client's wishes.

Among clients of REDO s.r.o. there are the military and police forces of Germany, Austria, the Czech Republic, Switzerland and the Netherlands.

Major customers include the German Army, where the company supplies annually thousands of products within several parallel public supply contracts for tactical belts, carrier straps, transport bags and carryalls and similar products. Another very important client is the Austrian Army, where the company has been supplying a large part of the equipment within the framework of public contracts repeatedly since 2004. The company REDO also, of course, supplies the domestic market, both the Czech Army and the Police of the Czech Republic, where the development responds to the requirements of special military and police forces. Last but not least, the company's portfolio includes the development and supply for various units

of the fast rescue component, firefighters and other services. For these groups, there are separate product lines that are specifically designed to perform health and asset management tasks.

One of the company's latest products is active carbon bandages that belong to the category of medical supplies. The active carbon bandage is a sterile active carbon bandage in the form of a micro-heater with increased absorption induced by osmotic pressure with a pronounced diffusion pump gradient. These patent-protected dressings are manufactured by ACB VALE, s.r.o. and the company REDO is a global distributor of this product.

In general, it is a band based on an active pure carbon, with high absorption, antibacterial and haemostatic effect. It can effectively stop bleeding, cleanses the environment of the wound, and significantly helps to heal the wounds, prevents secondary infection from the damaged tissue and from the external environment. With its absorption and antibacterial effect, this bandage greatly aids the healing of inflammation and relieves pain. This is to some extent a low-cost treatment.

These products are based on carbonized hydrate-cellulose fibers. The fiber itself, being thin of several tens of microns, is connected to a thread with very high absorption, which is approximately 36 times higher than similar products, at zero toxicity. It retains its properties even if the sterility is impaired.

One of the key features of this bandage is the simplicity of the application that can be handled even by a non-professional.







Furthermore, this bandage displays a very rapid onset of effects and trouble-free tolerance in all patients, without exception. However, the main favorable aspect is the speed and efficiency of healing.

This product is excellently described by Václav Bauer, the inventor of the bandage: "It's not a medicament in the true sense of the word, the bandage works due to its strong cleansing potential. Basically, it's just a bandage, but its effectiveness astonishes doctors. Everything heals eight times faster. "

The functionality of the bandage from the point of view of non-experts is that the dressing can absorb toxin from the human body, seals it and neutralizes it. The excess sorbent may protrude out on the top of the dressing and thus further accelerate the healing process. This is due to the density and consistency of the fiber - the capacity of one human hair is 2,000 carbon fibers. This effect is further enhanced by the top layer of dressing that serves as a gradient of the diffusion pump.

In other words, the surface area of 1 cm<sup>2</sup> of the carbon layer of the dressing could be stretched up to the size of one and a half football pitch. Such is the power of mechanical wound cleansing.

According to the inventor of this product, there is nothing in the world that would cleanse the wound like this carbon fiber does. Active carbon in the form of our product is used in many areas of modern medicine:

- Treatment of acute bleeding wounds, either in injury or active use in surgery or

dental procedures.

- Treatment of wounds that are difficult to treat by the "wet healing" principle, such as ulcers and inflammation in patients with diabetes, etc.
- First aid in the case of intoxicated wounds, as well as complex treatment of animal bites or insect bites.
- Treatment of burns and subsequent undesirable defects on transplants.

After registration, an active carbon bandage was introduced and cooperation with the GPs was established. The bandage is now certified, patented and ready to export to more than 20 countries all over the world. Carbon use has been used in medicine for a long time, but the uniqueness of this product is that the purity of carbon in our product is 99.99 % and can be applied directly on the wound to accelerate treatment with extraordinary carbon effects. No side effects or allergic reactions are known.

This bandage is currently available in three versions of the Bauer Bandage Special - a separate square of carbon fiber 10x10 cm, two versions of bandage for military purposes: BAKOP 1 - bandage with one square of active carbon up to 10x10 cm and finally BAKOP 2 - two squares of bandage with active carbon up to 10x10 cm.

#### Contact:

REDO s.r.o.

Tovarni 582/9

798 11 Prostějov

Czech Republic

+420 582 330 912 , +420 602 555 968

f.macalik@redo.army

**www.redo.cz**



# KOUTNÝ

## Prostějov



The Prostějov firm of Koutný has 25 years' experience in professional wear for armed forces and administrative organisations not just in European countries, but also in countries outside Europe, where the high quality of products, materials used and the flexibility of supplies, including customer service, is the norm.



This fact has made it one of the most reliable suppliers of field uniforms as well as dress uniforms, special firefighting clothing, overalls, vests, suits, jackets, trousers and many other products. All orders are carried out with maximum care for both small and large batches.

Working with continuous technological innovation for the cuts, materials and manufacturing process implemented in the production gives the products the desired characteristics in addition to the quality of the processing. The functionalities posed by ISO 9001:2009 and AQAP 2110 certificates, among others, are examined under all climatic conditions and extremes of the environments where they are used on a daily basis. Worth mentioning are the softshell, knitted fabrics with antistatic fibres, fire-retardant fabrics, and 2- and 3-layer laminates with seam sealing technology or waterproof zippers. And not only outdoor materials are used.....

### REFERENCES

The Dutch Army  
The Austrian Army  
Army of the Czech Republic  
Ministry of Defence of the Czech Republic  
Police of the Czech Republic  
Prison service of the Czech Republic  
Customs Administration of the Czech Republic  
Fire Brigades throughout the Czech Republic  
Voluntary Fire Brigades  
Prague Airport  
Czech Airlines  
Private Aviation companies



Sewing wrinkle-resistant full-dress or dress uniforms, while at the same time remaining fine and pleasant to the touch, requires modern cuts and the use of high-quality materials from Italy, France and Spain. Any adjustment to the customers' requirements for cuts, design, colour, pattern, sizes and hand tailoring is the norm.





THE COMPANY SVITAP J.H.J. SPOL. S.R.O. is a Czech textile company with almost 150 years of tradition. Our products portfolio focuses mainly on producing and supplying technical textiles (tent fabrics and canvases, fabrics from synthetic and natural fibres, filtration fabrics etc.) and technical confection (tents, halls, covers, arbores etc.) Sales are provided by four divisions located in Svitavy, only the fifth division is situated in Chropyně. 70% of production capacity goes for export.



The Czech company NANOMEMBRANE in cooperation with Svitap and the Faculty of Textile Engineering of the Technical University of Liberec has developed a brand new nanofibrous membrane with excellent properties including extremely high vapor permeability, water resistance with a high column of water, and 100% wind resistance for outdoor, sporting and military purposes.



The textile company Nyklicek a spol. Ltd. is a Czech textile producer with over a hundred years of tradition. It is a single-stage manufacturing company specialized in production of sheet fabrics by weaving, using mainly traditional materials as cotton, polyester and their mixtures. Thanks to up to date equipment and professionalism of the employees also processing of more demanding modern materials, e.g., yarns containing metal, is possible.



Our company is a private company engaged in small batch production of highly sophisticated technologies of weaving and warp knitting. Over the past 20 years, there was a major reconstruction of production facilities and almost 100% of our production technology has been improved.



VAKUFORM s.r.o. (Ltd.) is a Czech company, which is active in: development, production and marketing of medical devices for urgent prehospital care and development, production and marketing of devices for both civil and military sections of the Rescue System in the Czech Republic and abroad.



Koutný Ltd. company established in 1995, is a manufacturer of uniforms and professional clothes for various security units.



STAP a.s. – narrow fabrics manufacturer produces webbings, elastic tapes, cords, woven labels and badges, hook and loop fasteners and other tapes.



Intercolor a.s. was established in 1992 and affects significantly the Czech market in field of study of dyeing, finishing and printing knitwears, fabrics, straps and also garment goods. Since its establishment, the company operates its activity based on commission work.



PARDAM engages in research and production of nanofibrous materials, products and technologies. Thanks to its unique Centrifugal spinning technology and its own know-how, it is the only company in the world, which is able to produce a wide range of inorganic nanofibers, and is respected producer of polymeric nanofibers on an industrial scale. Given the many years of practical experience as a nanotechnology specialist, PARDAM has a large portfolio of products.



We are a Czech company engaged in textile manufacturing and special functional textile products. Our company covers the whole value chain, i.e. from manufacturing of yarn through manufacturing of knitted and woven fabric to ready-made clothing with various functions. The key area of the company's activities, in addition to purely manufacturing programmes and activities, remains research and development together with an accredited textile laboratory.



Argun manufacturer of full outfit and equipment range: Ballistic vests, anti-riot equipment, ballistic helmets and additional armoring.

# Česká zbrojovka

## Comprehensive High Quality Solutions for the Armed Forces



### **Dear customers and CZ brand enthusiasts,**

Česká zbrojovka a.s. has a long tradition, stretching back more than 80 years. During these eight decades we have launched millions of weapons from our factories in the Czech Republic and the USA to the market. Some of them have become global legends – let us mention at least the pistols of the CZ 75 and Dan Wesson series, or the 58 and 61 Škorpion submachine gun models. However, the current generation of CZ brand products is not a result of nostalgic looking back on an illustrious history. It is the result of commitment, erudition and honest work every day of a large team of superior professionals, for whom weapons are literally a passion and the customer is king.

Thanks to an intensive modernization of its production and development capacities, CZ currently offers top models in all segments,

with which it is hard to compete. A significant breakthrough was the return of our company to the exclusive community of accredited suppliers to official armed forces. We have produced weapons for the forces that have managed to gain worldwide renown: CZ SCORPION EVO 3 A1 submachine guns, CZ BREN 2 assault rifles, and CZ P-07/09 and CZ P-10 pistols. It seems that our hot news – the CZ TSR sniper rifle – has started in the same direction.

A proof of the quality of the new CZ weapons is the expansion of our sales network to more than 100 countries around the world and a growing reference list of satisfied customers. Many of them select for logistics as well as economics as a more favourable way of purchasing an entire product series, which consists, in addition to weapons themselves, of numerous accessories, services, or precisely targeted training. I am pleased to state that the sales of licences and technological transfers for the production of

CZ weapons to other countries in the world continue to increase.

An important benefit for our partners in the armed forces is that the ever-growing family of CZ also includes CZ 4M tactical equipment, which includes high-quality ballistic protection, as well as weapon accessories, uniforms and backpacks.

However, these achievements are not won by the CZ team in isolation. We also need to thank you, our customers and fans. The purchase of every weapon is a deeply responsible, individual choice and an expression of the highest trust, which we profoundly appreciate. It is, always, our commitment and a challenge to ourselves for us to deliver the best results possible, for you.

*Dipl. Eng. Ladislav Britaňák, MBA  
CEO and Vice-Chairman of the Board of  
Directors of Česká zbrojovka a.s.*



In 2018 the centenary of the founding of Czechoslovakia will be celebrated, but for more than 80 of those years, Česká zbrojovka a.s. has been building its position and reputation as one of the most progressive and significant firearms manufacturers in the world. Many of its models have become global legends and the latest generation seems to be destined for greatness as well.

Modern, technologically advanced firearms, developed and manufactured mostly at the primary CZ factory in Uherský Brod, are the company's main focus, as they form the foundation and backbone of the company's activities. This small town in the southeast of the Czech Republic is also the birthplace of some famous models, such as the Vz. 58 submachine gun (SMG), Vz. 61 Škorpion and the timeless CZ 75/85 pistols.

In terms of weapon categories it is useful to generally divide product lines according to their effective shooting distances...

#### Sniper Special

To cover the range of shooting at distances between 1,000 and 500 metres, CZ has prepared a completely new and extremely accurate sniper rifle, the **CZ TSR in .308 Win (7.62×51 NATO) calibre**. This weapon has been developed in cooperation with elite police and military snipers. Its key features include a cold hammer forged barrel with an exceptionally long lifetime and the barrel bore optimised for maximum accuracy; several MIL-STD-1913 Picatinny rails



for the attachment of accessories; and a proprietary design of folding stock. The CZ TSR guarantees SUB-MOA accuracy even after 10,000 shots, and offers an impressive firing capacity due to its 10-round magazine.

#### Cutting-Edge Weapons With a Famous Name

With regard to the assault rifles sector, that is, weapons for combat at 500 down to 150 metres – which can of course be used at much shorter distances – CZ's fundamen-







### Tried and Tested SCORPION

For shooting at distances from 150 down to 50 metres, CZ produces a very popular SMG, the **CZ SCORPION EVO 3 A1**. In terms of the design and production, this is an exceptionally easy and reliable weapon that uses the powerful 9x19 calibre round. Its characteristic features include extensive use of plastics, numerous mounting rails, ambidextrous controls with an option to adjust the ergonomics, and easy handling in burst fire mode. The qualities of this model are given testament by the ever-growing reference list of satisfied customers from all over the world. There is also a semi-automatic variant, the **CZ SCORPION EVO 3 S1 using 9x19 and 9x21** cartridges, appreciated by fans of modern dynamic sport shooting disciplines as well as members of those security forces that are by law prohibited from using weapons with a burst fire mode.

tal product line is the second generation of the CZ BREN assault rifle. This famous name has become a synonym for an exceptionally reliable yet user-friendly and accurate automatic weapon, and all of these attributes apply to the CZ BREN 2. These are highly advanced multi-calibre weapons in **5.56×45 NATO and 7.62×39**

**calibres**, with an option to be configured to meet the requirements of any mission and any customer, anywhere in the world.

For all CZ BREN weapons, there is also the optional CZ 805 G1 grenade launcher in 40×46 mm NATO calibre on offer.

### Short Range Specialists

CZ weapons that are primarily intended for the fulfilment of combat assignments and law enforcement at ranges up to 50 metres are semi-automatic pistols. This is a field where CZ regularly excels, as confirmed in many international shooting competitions. Its status as one of the most significant pis-







tol manufacturers in the world is enforced by the latest models bearing the famous CZ brand, above all, the **CZ P-10 C model in 9x19 calibre**. In this weapon the seemingly ordinary striker-fired pistol with a polymer frame has acquired a number of original innovations that have resulted in the creation of a model with significantly improved key user parameters, especially with regard to accuracy, durability and speed. Officially, it is a compact model, though in reality it is a full-blown large capacity service and defence weapon, suitable for open as well as concealed carry. The exceptional qualities of this model were confirmed by the American professional shooting magazine *Guns & Ammo*, awarding it the title "Pistol of the Year 2017". The latest variation is the **CZ P-10 C Optics** Ready with a mounting rail for simple, easy and secure attachment of a collimator sight.

However, CZ does not forget fans of single action and double action (SA/DA) pistols with an external hammer! Apart from the traditional CZ 75 family, these shooters can also appreciate the innovative, modern **CZ P-07** and **CZ P-09** models with polymer frames in **9x19, 9x21 and .40 S&W calibres**, as well as **.380 Auto** for the first compact version. In addition, there are also conversions for the **FX Simunition/CQT** marking cartridges and adapters for shooting with **.22 LR** cartridges.

#### Abundant Accessories and Training

For all the above-mentioned models CZ supplies a wide range of essential accessories, specially chosen and tested by the company's product managers, who have a lot of experience from real deployments. An

integral part of this process is intensive communication with actual end users: the aim is to offer anyone who is interested in a CZ product absolutely everything that they will need to meet their requirements to the ultimate degree. Some accessories are custom-made for CZ according to users' specifications. Thanks to this approach the company is able to meet all customer requirements, no matter if they just need ordinary spare parts sets or if they need a more comprehensive solution, from holsters and magazines to sophisticated sights and transport cases. There is also an impressive selection of optical and electro-optic scopes, from compact collimator sights to powerful sniper scopes.

CZ offers a complete service for all their weapons, including training for armourers as well as a special programme for user training. The company works closely with many experienced professionals who can provide all levels of modern training for security / first responders and armed forces. Besides their cutting-edge weapons and high-quality accessories, police and military units can also commission professional training programmes and courses from CZ, tailor-made to the requirements of any given unit, regardless whether it needs to learn "just" perfectly to handle their CZ weapons or to improve their tactical and operational readiness.

#### Tactical Equipment from CZ 4M

Unlike most of its rivals, CZ's comprehensive portfolio includes an extensive range of tactical equipment for the Armed Forces, as well as other customers. These include

uniforms, backpacks and ballistic protection items, supplied under the CZ 4M brand, which have become very popular and are creating more and more satisfied customers and fans of the brand.

The latest products from CZ 4M include two **tactical backpacks**, the **FOP 35** and **EXPEDITION 65**, featuring a unique system of interchangeable and mutually compatible carrier segments, including an additional set for use with a ballistic vest. Backpack accessories now also include storage compartments for laptops, hydration packs and a special medical pouch for the FOP 35 model.

Where **combat uniforms** are concerned, there is a new product line for 2018, the **CZ 4M RECON**, which has been developed especially for reconnaissance units and which has undergone extensive testing by special units from the Czech Army. The **CZ 4M OMEGA** state-of-the-art line of Special Operations Forces' tactical uniforms now includes flame retardant coveralls in a unique design, allowing maximum freedom of movement in any situation.

Turning to the ballistic vest range, CZ's latest product is the SPIDER tactical protection vest. This is a versatile item with various different modes of use, from a tactical carry vest to a light ballistic vest with IIIA protection level, to a ballistic vest with level VI protection. All have a front zip fastening and light structure made from high strength 2D mesh. There is also an option to add a special SunFibre reflective protection element, exclusively offered by CZ for the Armed Forces.

# Inflatable Decoys in Military Operations

Modern inflatable decoys from synthetic silk are lightweight and durable. Apart from nearly perfect optical illusion they feature also integrated radar reflectors and thermal emitters designed in laboratory. Their signatures are tested directly in the military operation fields. The enemy is not able to decide whether he has located an inflattech decoy or the real armament. Their deployment and relocation takes only between 10 to 20 minutes. Due to their light weight,

which ranges from 50 to 120 kilograms (tank or missile launcher decoy), just two or four men are sufficient.

Inflattech decoys bring the opportunity for armies to train with the equipment of the enemy. Inflatable copy of any equipment can be purchased for a fraction of the price of the original one, which for various reasons sometimes cannot be purchased at all. It is the most effective solution for electronic warfare training. The operating cost of inflattech decoys is close to zero.

The most advanced western armies are planning to include inflattech decoys into their arsenal shortly. They will supplement the existing armaments and boost the overall capability of the army. British army is planning to employ inflatable decoys in real conflict situations

(<https://www.thetimes.co.uk/article/inflatable-decoy-tanks-to-puff-up-armys-strength-xhnt8jl88>).

Similar strategy can be expected from other large European armies, such as the French military forces.

For example, the Russian army employs high-tech inflatable decoys on a regular basis and their inflatable division took part in the West 2017 exercise

(<https://www.nytimes.com/2016/10/13/world/europe/russia-decoy-weapon.html>).

The Czech Republic, of all NATO members, is currently the only producer of the most advanced inflatable decoys. The private company INFLATECH develops, produces, tests and supplies the decoys to other NATO countries, under the auspices of the Ministry of defence of the Czech Republic.

One of the new features of the 2018 improved INFLATECH decoy is a dual thermal system which ensures that IR signatures are nearly unrecognizable from the real armament.



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Imex Group Ltd. is a holder of certificate quality ISO 9001:2009 and member of Defence and Security Industry Association of the Czech Republic.

### Imex Group Ltd.

Milíčova 1343/16, 702 00 Ostrava - Mor. Ostrava  
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# UVA 500

## New Water Treatment Plant for crisis situations

AGADOS's portfolio also includes, besides the PK 4 KAGA mobile field kitchen, which was awarded the Golden IDET 2017 and the Prix IDEB 2018, and other special projects, UVA 500 water treatment plants.

The basic task of the UVA 500 is to modify contaminated water (biologically, chemically, radioactively) into drinking water or the desalination of seawater. For this purpose, the Waterclean 500 - RO plant by the company Futuretech is used. It combines various physical and chemical processes and ensures effective water treatment in a wide range of pollutants. An integral part is also a solid particle filter and a self-cleaning device. Another element located on the unit is an electric chlorinator designed

for the active production of chlorine from edible salt for disinfection purposes. By its use, the transport and storage of hazardous chemicals is rendered unnecessary. To ensure the unit operates in field conditions, the chassis is equipped with a central power generator so that it is possible to connect other devices.

The UVA 500 water treatment plant uses the same type of chassis as the other AGADOS special products designed for use by armies and components of the Integrated

Rescue System. It is a single-axle sprung chassis with a total weight of 2,000 kg. The trailer is equipped with a height-adjustable drawbar allowing connection to towing vehicles of different types (depending on the height and type of the towing device of the vehicle). The whole unit is covered by a canvas with a tilting structure that covers the work area. The chassis houses lockable boxes to store necessary accessories and chemicals. The workplace is also equipped with lighting.





### Advantages

- The chassis makes it possible to move the device in rough terrain
- Quick and easy commissioning
- Easy to handle (operated by one trained person)
- Use of height-adjustable drawbar (attachment variability)
- Ensured lifecycle of the product - service provided worldwide
- Fully automatic device

### Technical data

- Dimensions (l×w×h) 4,100×2,250×2,850 mm
- Total weight of 2,000 kg
- Unit capacity up to 550ℓ an hour | 13,200ℓ a day
- Chlorine production up to 6000ℓ an hour



Other special products brought to market by AGADOS are, besides the PK 4 KAGA mobile field kitchen, the larger PK 6 field kitchen, the NAVA 2000 mobile tank, or the NANUK freezer box for preserving fresh food even in extreme conditions. Furthermore, the company offers the OVA mobile lighting tower suitable for illuminating bases, areas of accidents, fires, etc.

AGADOS is focused on the production of trailers of all categories. In this area, it is a company of European importance - just half of the production is exported. Over just a year 2017, more than 30,000 trailers were produced. AGADOS's production grows year by year due to growing interest in its products.



PK 4 KAGA



PK 6 KAGA



NAVA 2000



NANUK



OVA

# IDEB 2018

On Friday 18<sup>th</sup> May the Bratislava exhibition centre closed its gates after the 7<sup>th</sup> edition of the international defence exhibition IDEB took place; being oriented at the upcoming modernization of the defence technology in the defence department, the event was an ideal platform for coherent showcase of the air force and ground force technologies.



exhibition also presented a novelty of the AF SR, the artillery fire control system DELSYS aimed for sub units at the level of battery, section and brigade in cooperation with assigned survey and meteorological service. The exhibited selfpropelled howitzers Zuzana 2, Zuzana 2000 and EVA were accomplished with an offer of armoured vehicles from the companies MSM Group, PSM, Patria, VOP CZ, Otokar, Renault, Kerametal, BAE, FNSS, SVOS, KMW, AMZ Kutno and with Slovak premiere from the company Zetor Engineering Slovakia – the armoured fighting vehicle 4x4 Gerlach. Other exhibits included a model of the Saab JAS 39 Gripen aircraft in real size with a possibility to try the position of the pilot as well as the helicopter of the AF SR Black Hawk UH-60. The partner of the fair was the company Lockheed Martin that drew attention of all visitors to the F-16 Block 70/72 V fighter aircraft.

[www.incheba.sk](http://www.incheba.sk)

The total area of 25,000 m<sup>2</sup> presented 170 exhibitors from 18 countries (Austria, Brazil, Bulgaria, Czech Republic, Finland, France, Germany, Great Britain, Hungary, Israel, Kazakhstan, Norway, Poland, Spain, Sweden, Turkey, USA and Slovak Republic). The event was visited by 23,417 visitors.

The exhibition took place under the patronage of the Ministry of Defence of the Slovak Republic with a professional guarantee by the Security and Defence Industry Association of the Slovak Republic and AFCEA Slovakia.

During its three days long course, the event created a space for presentation of products and services of the defence

industry. Armoured cars, fighter aircrafts, weapons and equipment of the AF SR, self-propelled howitzers, the airship SILWA - SILENT WATCHER offering complex smart solution of silent air monitoring, wide offer of weapons, the most modern communication means or equipment and armaments for the Armed Forces and rescue units and many other exhibits could be seen by visitors at the exhibition. Besides the traditional demining vehicle Božena the







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# Czech Participation at EUROSATORY 2018

The traditional biannual international fair of defence and security industry, EUROSATORY 2018, took place from June 11 to 16, 2018, at the Parc des Expositions de Paris Nord Villepinte.



The fourteenth EUROSATORY, which is one of the most important defence and security fairs, hosted altogether 1,802 exhibitors from 63 countries, 65.8 % of them from abroad. The joint official national stand of the Czech Republic occupying an area of 225 m<sup>2</sup> was made use of by twenty Czech exhibitors; another twenty or so preferred their own stands. In terms of the number of Czech companies participating in the event, this year's EUROSATORY is considered to be the strongest.

On the occasion of the 10<sup>th</sup> anniversary of

Czechoslovakia, a display of photographs with military and historical themes was set up in the lounge of the exhibition hall as part of the accompanying programme, covering a period since time prior to the formation of Czechoslovakia until now.

Taking part in the ceremonial opening of the event and welcoming the guests were also H.E. Petr Drulák, Czech ambassador in France, Tomáš Kopečný, Head of the Department of Industrial Cooperation of the Ministry of Defence of the Czech Republic, Jiří Hynek, President of the Defence and Security Industry Association of

the Czech Republic, and Karel Zděnovec from the Department of Foreign Economic Policies of the Ministry of Industry and Trade of the Czech Republic.

**Participated companies:**

4M SYSTEMS, ARGUN, AVEC CHEM, CLUTEX, COMPO TECH PLUS, CZECHOSLOVAK GROUP, ČESKÁ ZBROJOVKA, EGO ZLÍN, ERA, EURO SECURITY PRODUCTS, EVOLVING SYSTEMS CONSULTING, EVPÚ DEFENCE, EXCALIBUR ARMY, FK BRNO ENGINEERING, FUTURE FORCES FORUM, HQH SYSTEMS, INFLATECH, INVASYS, LEMAX, MEOPTA SYSTEMS, MESIT AEROSPACE,



MESIT DEFENCE, MILITARY SYSTEM LINE, OMNIPOL, ORITEST, PBS, PROAMMO CENTRAL EUROPE, PROGRESS PARTNERS ADVERTISING, PROTOTYPA – ZM, RAY SERVICE, REDO, RETIA, SELLIER & BELLOT, STV GROUP, SVOS, TATRA EXPORT, THE OPPIDUM CZECH, TRAAM, TS PLZEŇ, VOJENSKÝ TECHNICKÝ ÚSTAV, ŽĐAS, ZELENÝ SPORT DEFENCE

by Miloš Soukup, photo Šárka Cook

*"The management of EVPÚ Defence used the fair to hold a number of top-level meetings with representatives of countries all over the world. There is a high level of interest in our products both in Asia and in Western Europe. The support of the Ministry of Industry and Trade is a great benefit for us. We are grateful for the opportunity to show our products at the official stand. We appreciate very much the meetings with official delegations that visited our stand, as well as the party hosted by the Embassy of the Czech Republic in Paris, where we could discuss business matters with our suppliers and partners," said Natalia Jakšíková, Sales and Marketing Manager of EVPÚ Defence a.s.*





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	Return Loss	9/125 @ 1310/1550 nm >32 dB

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	Optical Loss SM	9/125 @ 1310/1550 nm 0.5 dB typ
	Return Loss	9/125 @ 1310/1550 nm > 45 dB (typical 48 dB)

HMA-HX	Optical Loss MM	50/125 @ 850/1300 nm 0.3 dB typ
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