

for Defence and Security Industry Review®

3/2018 | online   | www.msline.cz

The Media Platform of the Defence and Security
Industry Association of the Czech Republic



**FUTURE
FORCES
FORUM**

International Platform
for Trends & Technologies
in Defence & Security
www.future-forces-forum.org



REDO

Tactical and ballistic vests



VISIT US AT

PVA Expo Prague

17th – 19th October 2018

Hall 3, Stand 326



Future Forces[®]
INTERNATIONAL EXHIBITION
www.future-forces.org

PROTECTION OF PEOPLE AND CRITICAL INFRASTRUCTURE

**WE REALIZE SECURITY SYSTEMS IN A SPHERE OF
PROTECTING PEOPLE AND CRITICAL INFRASTRUCTURE.**

We are accustomed to even the most demanding of requirements. After twenty years of experience our products have been sufficiently tested so that they can be relied upon completely. Regular improvements by security experts means that our products are up-to-date and reliable at all times.

Security analysts use our products to easily monitor high-risk areas. Systems promptly detect all abnormal

and dangerous situations and help make immediate decisions, which means they reduce the probability of successful sabotage or terrorist attacks.

Thanks to the open architecture of our modular systems we are capable of creating unique and uniform custom-made security systems. The resulting structure meets our customer's requirements and wishes completely.



1 | OBJECT PROTECTION_KERBEROS™



KERBEROS 2D SCANNER
chassis scanner



KERBEROS 3D SCANNER
chassis scanner



KERBEROS MOBILE
mobile 2D scanner



KERBEROS HANDY
handy 2D scanner



KERBEROS RECOGNIZER
vehicle recognition



KERBEROS ANPR SYSTEM
NP identification

The KERBEROS products are designed to scan and inspect vehicle undercarriage when entering guarded objects.

2 | PERSONAL PROTECTION_ORTHOS™



ORTHOS PROTECTOR
vehicle detection



ORTHOS TRACER
vehicle tracking



ORTHOS GUARD
people guarding



ORTHOS CONVOY
people transport

The ORTHOS systems are a solution for the protection of persons during transport and in a place. They mutually complement and form so complex protection system.



3 | SPECIAL APPLICATION



MOBILE CHECKPOINT
mobile persons
and vehicles inspection

MOBILE CHECKPOINT is a complex system of mobile inspection station enabling security inspection of persons, luggage and vehicles when entering guarded area.



UGV TAROS
robotic system

UGV TAROS is an autonomous robotic vehicle designed for guarding strategic areas or individual properties. This robotic system provides more specific means of usage, in particular in complicated operating environments posing a high degree of risk.

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 42 and 43.

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, GORDIC, AURA, AGADOS, ERA 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 at the Future Forces Forum.

Šárka Cook, Editor in Chief



6



20



42

CONTENTS

Interviewing the Customs Administration Director General	6
Strategy on development of the FRS CR	10
REDO – active carbon bandages	18
CZUB – Comprehensive High Quality Solutions	20
BAE Systems - CV90 MkIV	26
Explosia – reliable business partner	30
IXO System	32
New Water Treatment Plant for crisis situations	36
AURA and NATO Codification System	40
L-39NG Aviation Training Future	42

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 3, 2018 • Key number: MK ČR E 19352, ISSN 2336-3460 • Not for sale • Photo on the cover: REDO

The Review editorial team bears no responsibility for language and content correctness of text and graphics developed by advertisers and specialist content editors.

EDITORIAL BOARD OF REVIEW

CHAIRMAN

Jiří Hynek

President of DSIA CR

DEPUTY CHAIRMAN

Bohuslav Chalupa

Founder of National Defence and Security Institute

DEPUTY CHAIRMAN

Radek Hauerland

Vice-President of DSIA CR, Vice-President for External Communication of Česká zbrojovka

HONOURARY MEMBERS

General Petr Pavel

General Josef Bečvář

General ret. Pavel Štefka

Advisor to General Director Trade Fairs Brno for IDET

Miloš Titz

Honourary Chairman and Founding Member of Editorial Board

MILITARY OFFICE OF THE PRESIDENT OF THE REPUBLIC

Maj.-Gen. Jan Kaše

Chief of the Staff

SENATE OF THE PARLIAMENT OF THE CR

Michael Hrbata

Advisor to Senator

THE OFFICE OF THE CR GOVERNMENT

Jiří Winkler

Defence and Security Department

MINISTRY OF FOREIGN AFFAIRS OF THE CR

Miloslav Stašek

State Secretary

Tomáš Kuchta

Ambassador Extraordinary and Plenipotentiary to Serbia

MINISTRY OF INDUSTRY AND TRADE OF THE CR

Vladimír Bärtl

Deputy Minister - Section of European Union and Foreign Trade

Zdeněk Richtr

Director of License Administration

Martin Šperl

Deputy Director, Department for Export Strategy and Management Service

MINISTRY OF FINANCE OF THE CR

CUSTOMS ADMINISTRATION OF THE CR

Brig Milan Poulíček

General Director

MINISTRY OF DEFENCE OF THE CR

Tomáš Kopečný

Director, Defence Industrial Cooperation Department

Martin Dvořák

Director, Defence Standardisation, Codification and Government Quality Assurance Authority

ARMED FORCES OF THE CR

Maj.-Gen. Jaroslav Kocián

Deputy Chief of the General Staff

MINISTRY OF JUSTICE OF THE CR

PRISON SERVICE OF THE CR

Maj.-Gen. Petr Dohnal

General Director

MINISTRY OF INTERIOR OF THE CR

POLICE OF THE CR

Maj.-Gen. Tomáš Tuhý

Police President

Col Tomáš Hytych

Director of the Air Service

FIRE RESCUE SERVICE OF THE CR

Maj.-Gen. Drahošlav Ryba

General Director

Col Daniel Miklos

Deputy General Director for Prevention and Civil Emergency Preparedness

Brig František Mencl

Director, FRS Region Hradec Králové

NATIONAL SECURITY AUTHORITY CR

Martin Fialka

Director of Administrative and Physical Security Department

REGIONAL AUTHORITY

Aleš Boňatovský

Secretary of the Pardubice Region Security Council, Head of the Crisis Management Section

CZECH PROOF HOUSE FOR TESTING ARMS AND AMMUNITION

Milan Kukla

Chairman

CESES FSV CHARLES UNIVERSITY

Miloš Balabán

Head of the Center of Security Policy

AFCEA CZECH CHAPTER

Tomáš Müller

President

GREMIUM ALARM ASSOCIATION

Václav Nepřaš

President

DEFENCE INDUSTRY REPRESENTATIVES

Zdeněk Císař

Director of REDO

Štěpán Černý

Business Director of SVOS

Miroslav Dvořák

Chairman of the Board of PAMCO and T-CZ

Filip Engelsmann

General Director of AURA

David Hác

Business Development Director of STV Group

Andrej Hronec

General Director of Audiopro

Josef Hudeček

Vice-Chairman of the Board of MESIT holding

Lucie Kadlecová

Marketing Manager - Rubber and Plastics Branch - GUMOTEX

Jan Köhler

Commercial Director of T-CZ

Antonín Mohelník

Director of the Prague branch of ELDIS Pardubice

Petr Novák

Chairman of the Board of RETIA

Lukáš Novotný

Marketing Manager of Czechoslovak Group

Lenka Orlová

Company Executive and Director of ORITEST

Petr Ostrý

CEO of Agados

Jaroslav Pecháček

Vice-President of DSIA CR, Managing Director of SWORDFISH

Jiří Protiva

Director of VTÚ

Marika Přinosilová

Director Marketing and Communication of OMNIPOL

Jiří Rousek

Exhibition Director of IDET, PYROS/ISSET

Petr Rusek

Chairman of the Board of TATRA TRUCKS

Jaromír Řezáč

Chief Executive Officer of GORDIC

Jiří Řezáč

Vice-President for Cooperation and Trade Policy of DSIA CR, Advisor to General Director of OMNIPOL

Milan Starý

Director HR & Communication of ERA

Pavel Šalanda

Vice-President of DSIA CR, Director of ROHDE & SCHWARZ - Praha

Jiří Šimek

Managing Director of Quittner & Schimek

Ladislav Šimek

Vice-President of DSIA CR, Managing Director of SHIMEQ Air

Marek Špok

Director of VOP CZ

Jiří Štefl

General Manager of OPTOKON

Josef Tichý

General Director of EXPLOSIA

Jaroslav Trávníček

Vice-President for Industry of DSIA CR, Technical and Business Director of VTÚ

Aleš Výborný

Director - Czech Republic of BAE Systems

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 Zdeněk 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*



18TH NATO DAYS IN OSTRAVA & 9TH CZECH AIR FORCE DAYS

CZECH  REPUBLIC



JAS 39 GRIPEN
2005



AVIA B-534
1938



15 - 16 SEPTEMBER 2018
LEOS JANACEK AIRPORT OSTRAVA
CZECH REPUBLIC



OSTRAVA!!!



ŠKODA

Cero | VODOCHODY

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 -



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). 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 any specific military material through

TITUS[®]

**100% ready
for your
missions**



nexTER **K+N**
A COMPANY OF **D+S**

CREATING NEW REFERENCES IN DEFENSE | WWW.NEXTER-GROUP.COM

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 international 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 negotiations 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 conduc-



NSPA team ensures delivery of fuel



System PATRIOT

ted 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 spe-

cification 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

PBS Velka Bites

UAV engine producer

PBS TJ40

395 N
3.3 kg
ø 147 mm

PBS TJ80

900 N
12 kg
ø 235 mm

PBS TJ100

1,300 N
19.5 kg
ø 272 mm

PBS TJ150

1,500 N
19.6 kg
ø 272 mm

2018

AAD South Africa	19 - 23 September
Istanbul Airshow	27 - 30 September
Airshow China	06 - 11 November
Indo Defence	07 - 10 November

www.pbs.cz | sales@pbsvb.cz
visit us at exhibitions worldwide



MESIT

Tactical Communication

Radio Systems
Intercoms
Headsets
PA Systems

www.mesit.cz



Aviation Electronics

Navigation Systems
Landing Systems
Aerodrome Lights
Communication
with VCS

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 participate 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.

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.



**We Strive to Make the World
a Safer Place**



Since 1997

**Defence and Security Industry Association of the Czech Republic
has been a significant national and international player.**

www.dsia.cz

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 cm² 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



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.

Renaissance of main battle tanks

answers from Dynamit Nobel Defence

With the message **“The tank is back on the battlefield”**, Dynamit Nobel Defence (DND), technology leader in the field of shoulder-launched weapons, made a clear statement during this year’s Eurosatory in Paris. With the RGW90 LRMP, the German company had recently fielded the world’s most advanced multi-purpose effector in the segment of shoulder-launched weapons. Nevertheless, another core competence of DND has shifted back into focus: unrivalled, powerful performance against tanks and heavy armored vehicles.



RGW 110 – The upcoming successor of Panzerfaust 3

Dynamit Nobel Defence provides a wide spectrum of shoulder-launched weapons for anti-tank, anti-structure and multipurpose uses. For more than 60 years, DND has been supplying German and international armed forces with highest-performing system solutions. All weapons are single-soldier operated, disposable systems with nearly zero lifecycle costs. All of the effectors can be fired from enclosures, and most have two or more warhead modes, making them adjustable to different combat scenarios.

Since main battle tanks are currently re-emerging in military conflicts and potential threat scenarios, DND has shifted their attention to the modernization of their anti-tank capabilities. The famous Panzerfaust 3, in service for German Bundeswehr and several other European and international armies, has been constantly developed and upgraded, and today features in its latest version still the best performing tandem anti-tank warhead in its caliber and weight class. Nevertheless, ergonomic upgrades had to be made, and therefore, DND has designed the RGW 110 as a direct successor of Panzerfaust 3.

It merges the top warhead performance of DND’s Panzerfaust family with the ergonomic and accuracy advantages of their RGW (Recoilless Grenade Weapon) family.

The tactical requirements

- low weight and ease of handling
- low signature
- proven fire-from-enclosure capability
- high accuracy out to ranges of 800 m
- target defeat capability against modern MBTs with explosive reactive armor
- upgradability to defeat active protection systems in the future
- can be directly translated into engineering requirements for the design of the new weapon.

Among others, the following engineering improvements stand out:

Internal ballistics

In the RGW 110, DND is using a liquid counter mass that reduces the sound pressure during launch by at least 12dB compared to a conventional rocket launcher. The liquid counter mass effectively cools down the hot gas from the gas generator so that no fireball appears at the rear and the expelled gas volume is strongly decreased. As an additional effect it strongly reduces the back blast so that light structures as close as 3 m behind the launcher will not be damaged, which can be important when firing from inside a building.

Terminal ballistics

The tandem warhead of the RGW 110 is able to defeat the armor of modern MBTs including add-on ERA protection. A combination of a high degree of mechanical deformation in the forging process with low temperature heat treatment of the shaped charge’s cone results in a very fine and very homogeneous grain structure, particularly on the inner surface, from where the high velocity part of the charge’s jet originates. This provides an unrivalled penetration into steel armor.

Ergonomics

RGW110 is a single-soldier weapon designed for intuitive handling, similar to a combat rifle. Aiming errors such as canting and misalignment during trigger-pull are largely minimized by the use of an optical sight and a pistol grip with a standard firearm trigger. The complete weapon is well balanced.

Conclusion

In most of its characteristics, the RGW110 is more advanced than other shoulder-launched weapons available on the market. Its upgradeability also ensures the future effectiveness against mechanized forces. If the tank is back on the battlefield, DND’s systems provide effective answers.





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, arbourers 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.

CV90 MkIV

Maximising battlefield performance, maintaining Czech sovereignty

The CV90 has seen active service with seven user nations in battle scenarios like Afghanistan and Liberia. The latest generation of the Infantry Fighting Vehicle, the MkIV, offers more than 20 years of technical research and development at the heart of its evolution. This modern, versatile, and combat-proven war fighter meets the Czech Army's requirements while ensuring the nation's sovereign defence capabilities are preserved and sustained for years to come.



BAE Systems CV90 MkIV is one of the most modern Infantry Fighting Vehicles available for future growth.

Unveiled earlier this year, the CV90 MkIV is the latest version of the combat-proven CV90, currently in service with numerous European nations. Faster, stronger, and higher performing, BAE Systems offers the MkIV to the Czech Army as a replacement for its fleet of BMP-II IFVs. New advancements including our latest iFighting® technology, digital turret system, and active damping ensure the MkIV has the latest capabilities the Czech Army needs for today's complex battlefield.

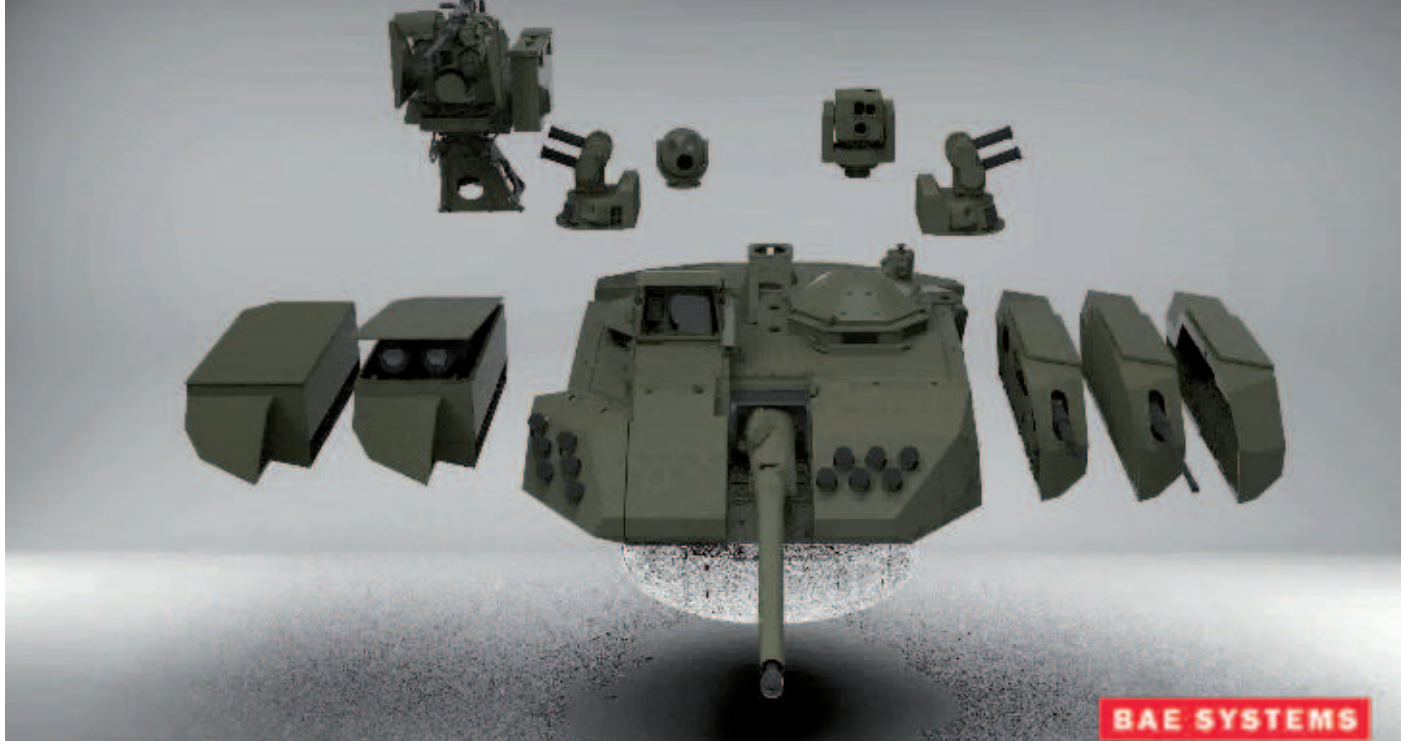
Based on modern technology and operational experience in the most demanding battle environments, the MkIV is built in partnership with local Czech companies.

This industrial cooperation model is already providing the Czech defence industry with a scope of work that significantly exceeds the traditional assembly of part kits, as BAE Systems continues to strengthen its Czech CV90 team in anticipation of the BMP-2 tender. The collaboration is also intended to support full technology transfer ensuring that the Czech defence industry benefits from key skills and technology expertise to secure the sovereignty of the program.

Faster. Stronger. Higher Performance.

Born out of a research and development program, which incorporated feedback

from the seven user nations that currently use the CV90 platform, the MkIV signals a step-change in the evolution of the CV90. With upgrades to the drivetrain, the MkIV now has a new engine with up to 1,000 horsepower and a more powerful X300 heavy-duty transmission, while providing users with an additional two tonnes of payload without compromising the vehicle's agility. The CV90 MkIV is equipped with the fourth generation Electronic Architecture compatible with NATO-standard Generic Vehicle Architecture (NGVA), which allows crews to manage large amounts of live-stream data and is interoperable within the NATO Alliance. This advancement will enable the



The CV90 MkIV's new D-series of turrets pack a heavy punch providing users with a customisable weapon options and significant growth opportunities over time.

introduction of autonomous crew support, machine-learning algorithms — including artificial intelligence capabilities — and augmented reality with the support of 3D map data to enable future adoption and growth.

The MkIV also offers a host of substantial capabilities designed for the Czech market. In particular the newly launched MkIV will not only deliver new levels of mobility, processing power and growth potential, it also carries a lot of punch with the new D-series turret.

"Advancements in speed, mobility, and electronics, make the MkIV a force to be reckoned with now and on the future battlefield," said Dan Lindell, CV90 Platform Manager at BAE Systems Hägglunds. "With combat-proven experience at its core, the MkIV's enhanced capabilities maximise battlefield performance in the most cost-effective way."

Flexible with a heavy punch

The all-Digital turret on the MkIV is the most flexible IFV-turret available. Its flexibility comes from the modular design of the lethality suite, which is based on generic interfaces and weapon pods. BAE Systems' intention behind the design of this new turret is to provide customers, like the Czech Army, with a series of options that allows them to customise the weapons involved and provide significant options for growth over time. The D-series of turrets can be configured to meet all key customer needs, offering 30/40, 35/50 and 120mm main guns, as well as weapon pods featuring different weapon options, such as integrated Anti-Tank Guided Missiles, Belt-fed Automatic Grenade Launchers, High Energy Weapons

and machine guns. The new turret system is also designed to support a more extensive sensor suite integration and utilise BAE Systems' revolutionary new iFighting® concept, designed to help crews make quicker decisions in combat.

Optimising vehicle and crew performance

Crews have the ability to manage larger amounts of live stream data with the introduction of the fourth generation of NGVA Standard Electronic Architecture. The future combat concept of iFighting® fuses together data from different systems within the vehicle to filter through and prioritise the most critical information. By harnessing existing data in the vehicle, this allows the crew to make quicker and more effective decisions to improve overall performance on the battlefield.

"As we roll out new technology, we know that adding displays and panels to combat vehicles could potentially distract crews in an already-complex combat environment. The key was finding a way to help improve situational awareness and combat efficiency without adding to the crews' cognitive workload, and we believe we have done that with iFighting®," explained Mikael Segerman, BAE Systems Hägglunds director for the Czech Republic. "iFighting® is not a product or a system. It is the core of system integration for the future armored vehicle."

"With advanced electronics, iFighting® creates a more combat-effective system by reducing the amount of information the soldier needs to process," continued

Segerman. "This results in increased situational awareness to aid decision-making on the complex battlefield. iFighting® ultimately helps to improve the performance of an inexperienced crew, as well as amplifying that of an experienced team."

Proactive protection, smoother ride

In addition to new digital turret technology and critical iFighting® features, the MkIV generation will be the first IFV produced in the West with a qualified Active Protection System (APS). Available for customers demanding the best there is with regard to survivability, APS is designed to detect and disrupt anti-tank rockets, missiles or other threats that endanger crews. The APS is currently being integrated to the Norwegian CV90 vehicles.

Active damping capability is also included as part of the base offering for the MkIV chassis providing increased terrain speeds. Adapted from auto-racing technology, it provides a suspension with greater stability, creating a smoother ride for the crew and curtailing wear and tear on the vehicle, reducing life-cycle support costs.

Modern, proven, low-risk solution to meet Czech requirements

Deployed by national forces, the UN and NATO in missions across the globe, from Afghanistan to Liberia, the CV90 platform is combat-proven. A modern, versatile, and reliable family of combat vehicles there are 1,280 vehicles in 15 variants in service with seven nations, including NATO allies. Current users of the CV90 include Denmark, Estonia, Finland, Norway, Sweden,

Switzerland, and The Netherlands. The most recent version of the CV90, under delivery for the Norwegian Army, is one of the most modern IFVs in production in the world. With an investment of more than 4.5 million engineering hours to date, BAE Systems remains committed to further advancing future generations of the CV90.

However, BAE Systems does more than just export proven technology and essential support systems to help international customers protect and strengthen their defence, aerospace and security capabilities. A crucial element of our business is understanding how to transfer technology and know-how to our local partners in order to build in-country capabilities, drive economic development, and create quality jobs and skilled workforces that will support the local defence industry for many years to come.

Across the CV90 platform, BAE Systems has demonstrated mutually-beneficial relationships with Norway, Finland, Switzerland, the Netherlands and Denmark which amount to a combined value of close to three billion Euro in local investment – all delivered on time and to the agreed value and content.

"We are a trusted long-term partner to governments and commercial organisations around the world, and have a long-established, track record for delivering



BAE Systems senior executives visit precision-optical systems producer Meopta during Eurosatory 2018. Left-to-right: Erwin Bieber, president Platforms & Services sector, BAE Systems Inc.; Tommy Gustafsson-Rask, vice president and general manager, BAE Systems Hägglunds; Aleš Výborný, director of The Czech Republic, BAE Systems plc; Lukáš Haubelt, Sales Manager, Meopta.

benefits to local industries," said Tommy Gustafsson-Rask, the vice president and general manager of BAE Systems Hägglunds, which produces the CV90 and other combat vehicles. "And we continue to grow those partnerships."

Fostering sovereign defence capabilities

BAE Systems is committed to building a strong and lasting industrial base in the Czech Republic to manufacture the MkIV, create jobs and maintain security of supply for CV90 logistics. Our industrial partnership model is designed to provide the Czech industry with more opportunities than traditional kit assembly.

Since signing a teaming agreement in May

2016 with defence equipment and systems integrator VOP, BAE Systems has broadened its scope of Czech partners and focused on building relationships with a number of local Czech companies in anticipation of the BMP-2 tender. A combined effort will not only develop new capabilities but also provide the opportunity to leverage mutual knowledge and expertise to create opportunities for business in adjacent markets.

BAE Systems is already working with more than 20 local suppliers spanning multiple regions across the Czech Republic from Moravia to Liberec and Plzeň. This includes cabling and electrical experts, Ray Service; precision sheet metal manufacturers, Laser Centrum; and international supplier of high-quality steel parts, AM-CME, who will provide mechanical components through its subsidiary Strojirny Sobislav s.r.o, in support of the Swedish Army's Mjölner mortar system. Additionally, precision-optical systems producer, Meopta, will support vital line-of-sight technology for the CV90.

A combat-proven, low-risk, state-of-the-art solution founded on collaboration with local Czech industry, the CV90 MkIV will meet the Czech Republic's defence and security requirements – now and well into the future.



Jakub Gabriel, Managing Director at Ray Service, hosts senior executives from BAE Systems in the Czech Pavilion at Eurosatory 2018. Left-to-right: Erwin Bieber, president Platforms & Services Sector, BAE Systems Inc.; Tommy Gustafsson-Rask, vice president and general manager, BAE Systems Hägglunds; Aleš Výborný, director of Czech Republic, BAE Systems plc; Jakub Gabriel, Managing Director, Ray Service.

Further information about the CV90 MkIV and BAE Systems' local presence in the Czech Republic is available at NATO Days (located within the VIP area) and Future Forces (stand 324, Hall 3).

We are specialists in load-handling technology for the most demanding operations

CONTSYSTEM, as the supplier of a load-handling equipment, has become an exclusive representative of the Hiab and Multilift brands for the Czech Republic and Slovakia for the state sector. The company has been successfully using its special technical solutions in tenders for such equipment deliveries to the Czech Police and Firebrigade. Another important part of provided services are deliveries to the military sector. Last year CONTSYSTEM opened the new assembly and service center in Ostrava.



Military vehicle with Steelbro sidelifter

Last year, CONTSYSTEM delivered a special vehicle with Steelbro SB 362 sidelifter installed on the T815/7 8x8 chassis. The vehicle can be integrated into logistics units for ISO

containers handling. One of its main advantages of this equipment is the fact that the container remains in horizontal position during manipulation. This is especially important in specific container manipulation (such as laboratories, workplaces, etc.). Previously delivered vehicles with Steelbro sidelifters

are currently in service with the medical units (field hospitals) or Czech anti-chemical units.

www.contsystem.cz/en
Newly opened service and assembly center in Ostrava!

Explosia Pardubice

a reliable business partner

Explosia a.s., a Czech company, has recorded a historic achievement. For the first time in the recent history, i.e. since 2002, the company has recorded CZK 1 billion (EUR 40 million) in gross sales. It is the producer of Semtex, the world's most famous plastic explosive, yet its portfolio includes a number of other products that can be used in the fight against terrorism or to save and protect lives.



The first decade of the millennium was harsh on Explosia. There was a major decline in the demand for powders and, due to the downturn in the construction and mining industries, for traditional explosives as well. Explosia had to identify a way out of that situation. As the saying goes, faint heart never won fair lady, so we took advantage of the market shift and began to gain ground in the offer of propellants for modular charges and in the niche for spherical powders. "Something that helped us greatly at the time was the increase of our capital by CZK 250 million by the owner. At the time, the owner was the Ministry of Finance, later we transferred under the Ministry of Industry and Trade of the Czech Republic. The situation permitted us to carry out principal investments, which assisted us in improving our performance rapidly and responding to the market situation in a flexible manner, explains general director Josef Tichý.

The most prominent investment was the construction of research and development centre for bi-modular propellant charges (BMCS). It is a market segment where pardubice's company were active in the 1980's. The new trends in the market have seen the segment coming back into full swing. The line allows to re-research and identify the maximum degree of automation in the production of BMCS. Explosia mission is to be a strong force to be reckoned with in Europe as well as globally. Full-combustible Bi-modular charges are designed for gun-howitzers. The purpose of howitzers is in most cases indirect

shooting on area targets. Simply put, depending on the distance you want to shoot, so many charges you should use. In the history metallic cartridges were used for propelling charges, which formed not an insignificant portion of unusable weight. Full-combustible Bi-modular charges thus not only allow the use of the total weight to deliver energy to the shot, but after the shot the chamber can be immediately charge with another shot without waiting for the cartridge to be removed.

Explosia is an important supplier of modular charges for Poland's Land Forces; other countries are showing interest in cooperation as well. One of company goals is to become a partner for the Czech Armed Forces. "It is rather a matter of prestige than of large sums of money. Being a strategic company of the country, we should certainly participate in procurement for the Army," adds the director Tichý.

Another unforgettable product of the pardubices company is the plastic explosive Semtex. Semtex has been historically connected, at times, with terrorist actions. But it is

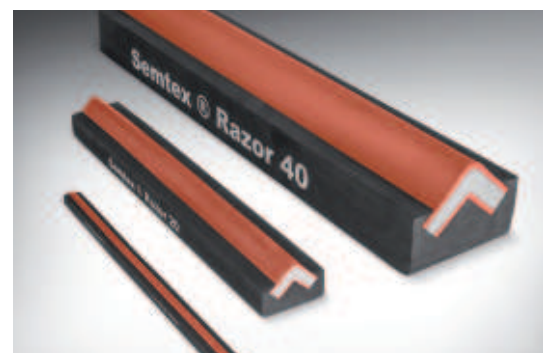




a product that is deployed in the military as well as civilian domains. Explosia is trying to make Semtex an actively helpful product. That is why they had recently introduced the Desintegrator, a novel disruptor in active counter-terrorism measures, which Semtex is a part of. Josef Tichý says: "Imagine a model situation: there is a suspicious suitcase left in an airport hall that is likely to contain explosive ordnance. The EOD team are facing two possibilities: to attempt to disarm it right away, or to deploy a Desintegrator unit, hide in a safe location and detonate it remotely." In all tests, the Desintegrator blew up the suitcase with such velocity that the explosive ordnance failed to activate in time. Semtex also helps as a component of the Semtex Razor flexible charge, which is used, for example, by firefighters for the disposal of ice blocks in the spring floods; it

is also quite popular with the Police and the Army. Semtex in sheets is often the tool of choice in the fining of metals.

Explosia a.s. is a state-owned company, which should guarantee a solid deal not only with employees but also with business partners. It was founded in Semtín since 1920. Two years later, black powder and industrial explosion Dynamon began to be produced at the places of today's factory. The 1930's brought the company a new name - Explosia. The 1960's brought the most famous product. The company's gates for the first time left Semtex. His name has become synonymous with high-quality explosives around the world. In two years, Explosia will reach its 100th anniversary. Let us believe that entering the second hundred will be as good as finish of the first.



IXO System



The new flight and drone zone planner

Have you ever dreamed of plan instantly and manage easily your flights? ERA' s subsidiary, Slovak company R-SYS invented complex solutions for RPAS users, IFR /VFR pilots and ANSP authorities – integrated ATM/UTM/AIS system called IXO.



IXO system represents a complex solution for airspace users and Air National Service Providers who look for a product that seamlessly integrates information on manned and unmanned aircraft operations and provides real-time aeronautical information for all airspace users.

IXO system presents a powerful and multi-platform solution which satisfies requirements of ATM integrated and interoperable system while it emphasizes timely distribution of accurate aeronautical data. The system applies the latest regulations to flight planning, airspace usage conflict calculation, RPAS flight validation/clearance processing,

manned/unmanned aircraft management, or aeronautical data provision.

IXO have several modules:

IXO AIS is an aeronautical information service responsible for a timely flow of accurate information necessary for the safety, regularity and efficiency of air traffic. Specifically designed for FIC and other ANSP's working positions as operational data presenting tool.

IXO RPAS provides management of various aspects of RPAS/UAV flights



to plan drone zone easily, using dedicated mobile applications for iOS and Android. Including registration and obtaining a RPAS certificate based on the selected country regulations. System sends push notifications to all affected RPAS users if there is any change.

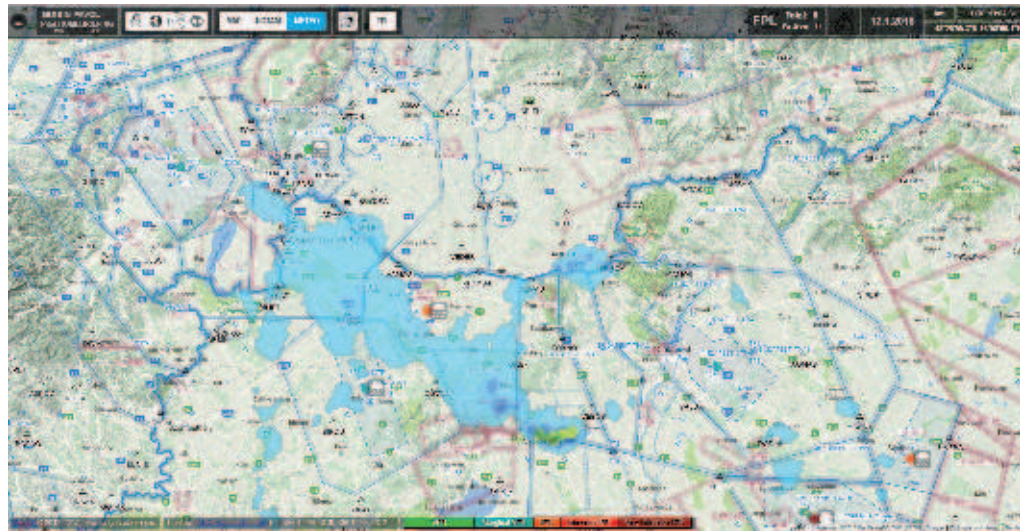
IXO ARO has been specifically designed for ATS Reporting Office (ARO/CARO) purposes for handling of flight plans and related information within IXO SYSTEM and its interfaces.

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.

IXO PILOT represents an interactive flight planning and pre-flight briefing based on valid ANSPs and EAD data being at all times readily accessible from any location, facilitates self-briefing for VFR/IFR pilots.

Key Benefits:

- Safe and reliable management of air traffic including RPAS flights
- Easy distribution of information via web interface to various users within and outside ANSP network
- Publication and update of AIP information
- Integrated flight planning information delivery to ARO
- Facilitation of the NOTAM Office daily operations, maintenance and exchange of NOTAM information
- Capability to manage flight plans and to create detailed Pre-flight Information Bulletins.



www.era.aero



ERA SOLUTIONS

MORE THAN SENSORS

UNIQUE PASSIVE
SURVEILLANCE SYSTEM

DATA DISPLAYS

CONSULTANCY / TRAINING
CUSTOMER QUALITY SERVICES

COMMAND & CONTROL
SYSTEM

SIMULATION TOOLS

RESEARCH & DEVELOPMENT

TTC TELEKOMUNIKACE

provides new dimension to the system integration of voice and data services based on radio-networks

Mobilicom 4G-LTE MESH free topology type digital specialised radio devices for ad-hoc networks solutions enable suitable integration of user applications and optimisation of performance-reach-data penetrability ratio in favour of the user. Given that those devices are meant for movable radio-stations with speed of up to 800 km per hour, the solutions based on the above technology are ideal both for the integrated rescue system units and for the tactical environment of the Czech Army. The radio-stations are not just personal or vehicle (ManPACK) but there are also special (embedded) options

to be used in robotic and pilotless machines.

Each radio-station in the system provides a radio node and enables the creation and maintenance of flexible MESH broadband radio infrastructure on the basis of a successfully growing progressive 4G-LTE technology. Presently, the company TTC Telekomunikace develops and integrates management, monitoring and dispatching systems which include those specialised radio tools typically using Ad-Hoc data infrastructure for technological data, voice, and HD video transfer from rescue team members and mobile vehicles to the operations headquarters.

Final customer solution enables immediate voice and HD video transmission from areas with difficult radio waves broadcast



(ferro-concrete buildings, mountain passes, tunnels, cellars, underground garages, etc.) through suitable placement of radio nodes during the operation, which will automatically retranslate the radio signal to area with trouble-free radio-signal broadcast and then through accessible topology to the end user.

If you are interested in further information or practical presentation in your own environment, please contact our support department at sales@ttc.cz www.ttc-telekomunikace.cz



WORLD PREMIERE OF THE CZECH UNMANNED HELICOPTER

for civil, security, rescue and military missions

**FUTURE
FORCES
FORUM**

17. - 19. 10. 2018, PRAGUE
www.future-forces-forum.org

**REGISTER
ONLINE**

Various nations. Multiple challenges. One device. The new R&S®SDTR.

The new vehicular tactical radio is the first member of the R&S®SDxR software defined radio family. It marks a revolutionary change in the field of tactical radio communications, both technically and economically.

- SCA-compliant, open radio platform
- Flexible networking waveform family for different missions
- Simultaneous voice and data communications
- Full IP capability

www.rohde-schwarz.com/ad/sdtr



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

For the Army and the Integrated Rescue System, here is the Set of the power center (SEC)



The Military Technical Institute, namely its branch Military Technical Institute of the Ground Force Vyškov, supplied to the Czech Army a set of the power center (type designation SEC 1080 kW). Since it is a unique project that can be used both in deploying units of the armed forces and sections of the Integrated Rescue System, we publish further details.



all container power supplies stations and the distribution of the produced electrical energy. It monitors and checks all safety data of all components of the set.

The container tank continuously supplies fuel to power stations and is refilled during the operation from the automotive tank.

puted advantage of the SEC is also the high mobility, resistance, very quiet operation, available output to meet the energy needs of large field formations, field hospitals and all other premises that have to meet a condition of nonstop power supply.

Author: Pavel Lang

Photo: Archive of the VTÚPV branch

The Set of the power center is a mobile and completely independent electrical energy source of high performance for general use. It is compatible in voltage with distribution networks in Europe, Asia, Africa, Australia and some South American countries. Its concept is destined for deployment in the forces units of the immediate reaction of the Czech Army, but it can also be used as an emergency resource in solving any crisis situation or natural disaster in which sections of the Integrated Rescue System get involved.

The SEC is built into five modified ISO-1C containers and is functionally composed of three stand-alone power supplies stations, one substation and one central fuel tank. Container power supplies stations are in two power versions, namely 360 kW and 120 kW.

The container substation serves in the SEC as the site for automatic control and synchronization of the parallel operation of

Basic parameters of the SEC:

- Maximum of delivered power: 1080 kW
- Rated voltage, frequency: 3x400/230 V, 50 Hz
- Mode of operation: automatic, nonstop
- Handling with containers of the SEC: by all means intended for ISO-1C containers
- Stacking of SEC containers: 1plus 8
- Fuel capacity in the container tank: 15,000 liters
- Maximum weight of one container: 12 ton
- Dimensions of the ISO-1C container: 6058x2438x2438 mm
- operator: 1 person

What are the positives of the SEC?

Fully automatic operation that responds flexibly to the immediate need for output delivered to the mains so that minimize fuel and noise consumption and maximize reliability of electrical energy supply under all foreseeable circumstances. The undis-



The state enterprise Military Technical Institute has modernized the Biobox to isolate from deadly viral diseases.



A transport mean for the separate evacuation of persons suspected of transmission of viral diseases, including the Ebola haemorrhagic fever or SARS respiratory syndrome, that is the product of the development of the Military Technical Institute. There were produced twenty pieces of Bioboxes for the needs of the Czech Army.

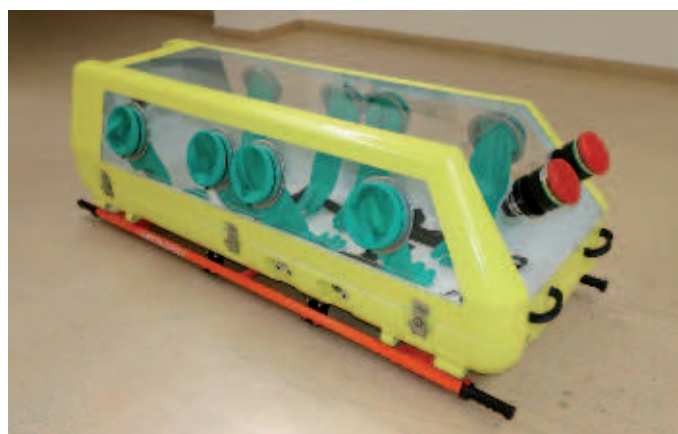
The Military Technical Institute subsequently proceeded to modernize so-called military variants into civilian, for the needs of Emergency Medical Service and specialized workplaces. The new modification is called Biobox – M1.

Against the original design, the Biobox – M1 has a number of modernization elements. The key features are the installation of a higher-power ventilation system with six-stage control, which represents an increase in airflow to about twice. Furthermore, the battery capacity has been increased to ensure sufficient service life and the box has been modified to

according to requirements of potential customers.

Technical data of the Biobox

- Internal underpressure: min. 100 Pa
- Air exchange: 120 to 235 (at 6 degrees) l / min
- Operation time on AKB: 5 hours at 235 l / min (maximum power) and P3 filters
- Relative humidity: 20 to 80 % Rh
- Weight (empty without chassis): 60 kg
- Load: 110 kg
- Total length: 2,100 mm
- Total width: 720 mm
- Total height: 595 mm



„We react by modernization of the Biobox to the initial demand of the army customer. This special transport mean, however, has its justification even within the Integrated Rescue System. We have an ambition to address all regional Emergency Medical Services and to offer them

attach the means for various stretcher chassis of civilian sanitary equipment. The Biobox frame has been reinforced and equipped with a six-point seat belt. Additionally, it has been added by anchor elements for the possibility of air transport. There have been changes in the access from the front side box for eventual intubation during transport. The expert team is ready to do other adjustments

the upgraded Biobox – M1“, says Director of the Military Technical Institute, Mr. Jiří Protiva.

Author: Pavel Lang

Photo: Archive of the VTÚPV branch



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 MC CATALOGUE 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



ReTWis



ReVISOR



ReDat RECORDING SYSTEMS



SURN CZ MODERNIZATION

RETIA®

1993 **25** 2018

LET ZKUŠENOSTÍ
YEARS OF EXPERIENCE

retia.eu

L-39NG

Aviation Training Future

Just weeks left before the roll-out of the first jet aircraft, developed in the Czech Republic in the 21st 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 4th and 5th 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 building 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 SkyTech 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.

C4ISTAR

is first of all a capability...



One system, seamless solution.

Company DELINFO, spol. s r.o., a member of ICZ Group, is the main supplier of the Command and Control System for the Czech Ground Force (ICZ DELINFOS®). No one doubts whether to the effective operation of the C2 System seamless information exchange is necessary; both among single subsystems (Command Post – Vehicle – Dismounted Soldier), and directly, e.g. from a specialized soldier to the staff of the unit and others. Single subsystem interoperability with similar NATO/NATO countries subsystems has to be the matter of course. Such an interoperability is being achieved by DELINFO through the participation in some NATO working groups business. The implementation success of those standards has been proven within the employment of the ICZ DELINFOS® during international exercises, where our soldiers achieve ordinarily excellent results.

During the International Defence Exhibition IDEB 2018 in Bratislava our company together with MSM Martin s.r.o. and OPTOKON a.s. presented integration of ICZ DELINFOS® into specific platforms, starting with a Dismounted Soldier Terminal through LMCP28, the heart of the PATRIOT vehicle, up until 3D table of the unit commander. This comprehensive system hold exhibitor's interest by its complexity and moreover it was awarded as for GRAND PRIX IDEB 2018.

C4ISTAR panel is a part of the Future Forces Exhibition 2018, where interested persons can take up with demonstration of the C4ISTAR complex solution. This solution is going to be presented at the display stand of DELINFO too.



Maintenance / Repair / Overhaul
Modernizations
Simulation technologies
Training
Logistics



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 m² 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 10th 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.

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.



**SUPPLIER OF TIRES FOR
MILITARY, FIRE
AND LOGISTICS VEHICLES**



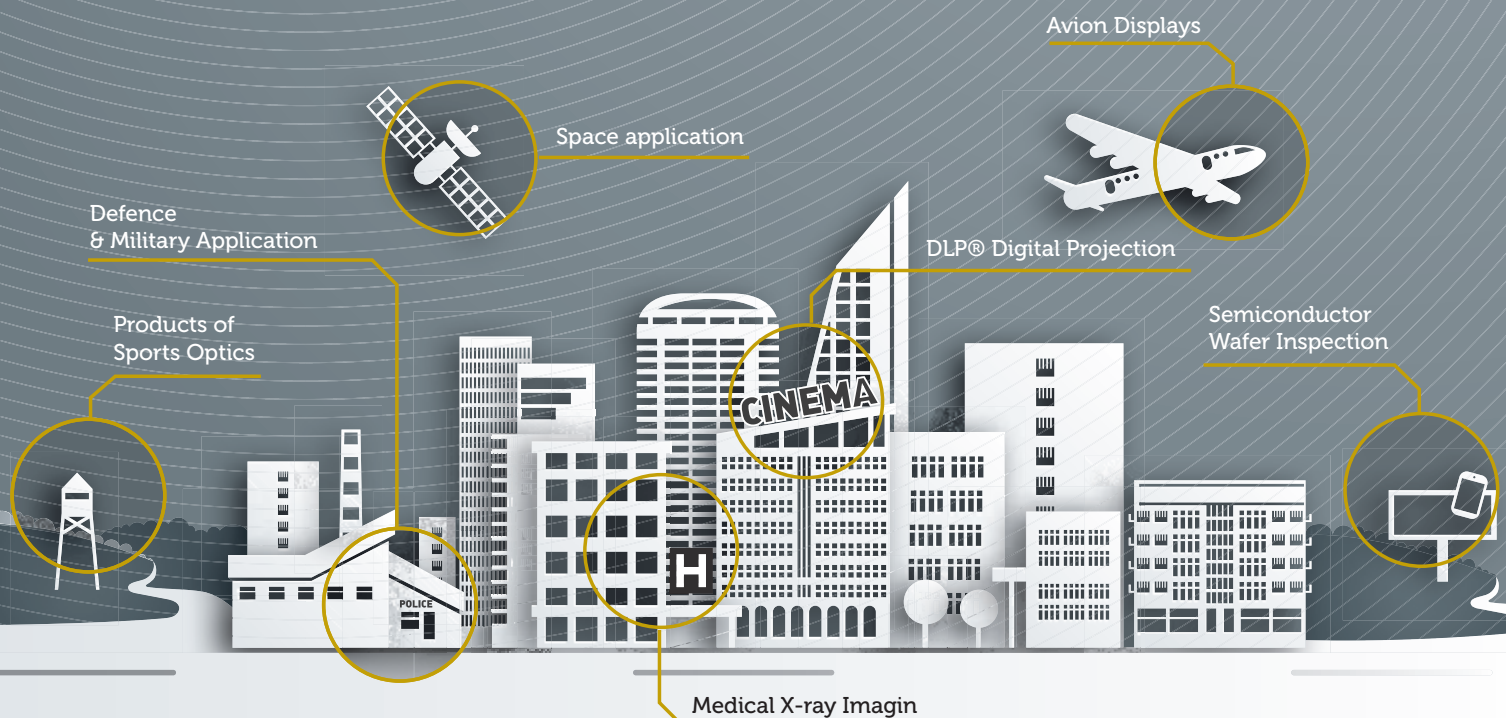
www.mands.cz

FROM THE FIRST IDEA TO THE FINAL PRODUCT

Meopta is an international company with a long rich tradition of developing, manufacturing and assembling world class optical, opto-mechanical and optoelectronic products.

SINCE 1933 WE ARE CREATING OPTICS SOLUTIONS FOR INDUSTRIAL, MILITARY AND CONSUMER MARKETS.

MEOPTA IS CURRENTLY REGARDED AS AN ELITE MANUFACTURER OF OPTICS AND OEM PRODUCTS FOR SOME OF THE MOST PRESTIGIOUS HIGH-END BRANDS IN THE INDUSTRY, INCLUDING THE LARGEST GLOBAL MILITARY CONTRACTORS.



EUROPEAN
OPTICS
since
1933

meopta

Meopta - optika, s.r.o.

The world-class manufacturer of optics, opto-mechanics and opto-electronics.

Phone: +420 581 241 111 / e-mail: meopta@meopta.com

www.meopta.com

15TH INTERNATIONAL DEFENCE AND SECURITY TECHNOLOGIES FAIR



SOLUTIONS
FOR SECURITY

PYROS, ISET
29. 5.-1. 6. 2019



University
of Defence

29.-31. 5. 2019

BRNO, CZECH REPUBLIC

BVV Trade Fair Brno
Výstaviště 405/1
CZ – 603 00 Brno
phone: +420 541 152 926
fax: +420 541 153 044
idet@bvz.cz
www.idet.cz

Central
European
Exhibition
Centre

BVV
Veletřhy
Brno