

# for Defence and Security Industry **Review**®

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The Media Platform of the Defence and Security  
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**Focused on Meopta**

An interesting year in terms of military orders





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# EDITORIAL

Dear readers,

This issue is published primarily on the occasion of IDET, the largest International Defence and Security Technology fair in Central Europe, and concurrently running ISET and PYROS fairs taking place in Brno on 29 May - 1 June. We introduce not only presentations of defence and security companies, but also the portfolio of some Czech and foreign exhibitors who would like to use this opportunity to invite you to their stands.

At the very beginning, we bring you an exclusive interview with Brigadier General Zoltán Bubeník, the Director of the Military Health Agency, who was also appointed the Chairman of the Committee of Chiefs of Health Services of the North Atlantic Alliance in the end of 2018. Another interview was provided by Jiří Hynek, M.A., the President of Defence and Security Industry Association of the Czech Republic.

Our publishing house, MS Line, the major media partner of IDET for the Czech Republic, traditionally publishes the Czech-English publication called IDET NEWS on the occasion of IDET fair. The IDET NEWS awards ceremony and prize-giving for the best products nominated by the jury of international journalists jury will take place during the fair as well.

You can also find both of these editions online at [www.msline.cz](http://www.msline.cz).

I would like to wish all visitors a nice stay in Brno and many successful business activities for exhibitors.



Šárka Cook, Editor in Chief



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## The Director of the Military Health Agency, Brigadier General Zoltán Bubeník, M.D., was appointed the Chairman of the Committee of Chiefs of Health Services of the North Atlantic Alliance in November 2018

At the beginning of this year, the General accepted the offer of the editors to become a member of the representative Editorial Board of the Defence and Security Industry Review. This is a great honor for us, and on this occasion we asked the General for interview.



on research and development in the field of military healthcare, linking these activities to STO-HFM (Science and Technology Organisation - Human Factors in Medicine). The Chairman of the Committee is elected from the Chiefs of Medical Services of the Member States, usually for a period of three years with the possibility of extension for a maximum of 4 years. Needless to say that the task of the Chairman of the Committee is to coordinate all Member States' activities towards a common goal - adequate Alliance medical support. The Committee has working groups and expert teams to deal with specific areas of health issues - training, materiel security, technology, health care, information technology in health care and many others. This is the first time when a former Eastern Bloc representative has been elected for the entire term (it has to be said that in 2005,

the Hungarian Surgeon General „substituted“ for a period of 5 months before the planned German colleague replaced him) Therefore I greatly appreciate this position and it is also a tribute to the Czech medical service as a reliable NATO partner.

**Naturally, I would like to ask you to introduce the equally important Military Health Agency of the Army of the Czech Republic.**

The Military Health Agency is the key organizational unit of the Army of the Czech Republic in matters of health, veterinary and psychological care defence sector. It comprises of the Directorate, Department of Internal Management and Professional Bodies ensuring the above activities both in peace and deployment in foreign operations as well

**General, your chairmanship of NATO's highest medical body is not only a great honor but also a big challenge. Could you tell our readers what this important position is all about, and what is this committee in charge of?**

The Alliance's Committee of Chiefs of Health Services is the main advisory body in the field of medical support for the Alliance Military Committee (MC-Military Committee). Its key task is to prepare regulations and general health legislation related to preparation, training and deployment of health forces and means to support Alliance operations across the whole spectrum - from combat and supportive all way through to reconstruction and humanitarian ones. In addition to this, we also focus







as in potential crisis scenario. It consists both of stationary elements - sickbays and institutes (health care dealing with hygiene and anti-epidemic protection, and veterinary care, which is dedicated to the whole range of veterinary activities - from diagnostics to treatment of service animals), as well as deployable elements such as field hospitals or special mobile infection hospitals or laboratories. However, the Agency's elements are designed in a way allowing to create deployable teams with complete materiel and personnel backup. We can say that in the area of medical, veterinary and psychological support of troops we are largely self-sufficient and only when our „agency“ capabilities are run out, military hospitals or other elements complement us. Of course, we must not forget the medical supplies center, the air rescue center or the military cynology center.

**In the Czech Republic, there is a long-term lack of doctors and medical personnel both in the military and the civilian sectors. Is it the same in the Alliance and how is this problem solved? Is it solvable?**

The lack of medical staff (doctors and non-medical health personnel - nurses, rescuers or laboratory technicians) is relative in the ACR. Especially from the point of view of adequate level of support for units - you have to have sufficient tabular items, both personnel and materiel, and only then the unit is solid. I am personally optimistic on this issue, since enough students are studying at the Faculty of Military Health Sciences of the University of Defence, who are gradually completing vacancies. I even argue that we will have to create an adequate number of systemized posts for them to make sure that when they finish their studies within 4 - 5 years, they will be “deployable“ for their future positions. The Faculty also supplements pharmacists and dentists, although only in the order of individuals, but this is enough for the system. In some of the Alliance states where military schools have been abolished over the past decade, they face huge challenges and competitiveness with civilian systems - there has just been a struggle for experts. That is why I am personally pleased that the tradition of the Czech military health education has been going on for almost 70 years and we want

to continue in this tradition as the only rational source of staff. From the civilian sector we rely only on supplements, especially in the field of nurses and rescuers, where there is for a time being a relatively high interest in recruiting.

**How is the Army of the Czech Republic in terms of medical equipment at present? Do you plan any procurement for items in shortage, either in foreseeable or more distant future, or do you have enough?**

Most of the medical items needed for the ACR units are being continuously provided. A part of them are the items of common need, especially consumer type items and medical preparations, which are provided by the Center of Medical Supplies or in the form of centralized orders. The main reason for non-concluding central supply contracts, as was recently the case of supplies of consumer items for air passages treatment, is often the reluctance of suppliers to undertake a demanding acquisition process and difficult price competitiveness with Asian products. Purchasing of auto-injectors is still problematic, particularly because of the lack of global production. Investment items are being competed on the basis of the central contracting entity as required and the approved medium-term development and renewal plan. Apart from technical equipment, it is the instrumentation for particular sections of the ACR, and special purpose items, such as specialized workplaces in containers or medical tents. Despite the fact that these are relatively complex contracts, the successful completion of which requires the fulfilment of the conditions of the military tests, they are being relatively successfully implemented.

**In February of this year you handed over the final delivery of new ambulances to the Medical Supplies Center in Bystřice pod Hostýnem. Could you please be more specific on this acquisition, i.e. number and type of vehicles, tasting, level of satisfaction, sufficiency etc.?**

It was a public contract concluded in 2018 for the supply of 18 type A road ambulances - for the transport of patients. The vehicles were delivered on the Volks-



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wagen Transporter Kombi T6 chassis, the acquisition of which was in line with the plan on overall renewal of obsolete medical equipment. The vehicles are intended to provide primary care during training of the ACR units and transportation of patients to treatment facilities. After successful shortened military tests seventeen vehicles were handed over to the Center of Health Services, one vehicle was handed over to Ve-VA. Despite the fact that few minor shortcomings occurred in several vehicles at the beginning of their service, which were removed by the supplier in time, the overall satisfaction of the users using this equipment prevails.

**How do you proceed when Czech soldiers are injured in foreign missions?**

First of all, our soldiers are always treated with the utmost care either by our own medical professionals on site or by the Alliance medical staff. The principle is to provide the care in the extent as close as possible to the peace civilian health services. In any case, it is primarily about saving life and limbs, although it is sometimes extremely difficult - limited resources, diagnostic and consulting possibilities, which are obvious here, in Czech Republic, but they are not available on site. But this is not an obstacle to the maximum deployment of capabilities, abilities and creative skills of our and allied medical professionals. To make sure that after the initial treatment, operations and other actions, the chance to survive and



provide definitive treatment is as high as possible, we are dealing with so-called health repatriation at the moment when the patient's health condition allows it. For this purpose, we use either our own special transport aircraft with built-in medical equipment and specialized team, or other Alliance means, such as transportation to Germany by the US side and subsequent transfer to the Czech Republic by helicopter or plane.

**At the end of March, you hosted the 19<sup>th</sup> Military Health Service Conference in Libavá. What was the subject of this conference?**

The traditional annual conference brings many topics among its participants, but there is one common denominator - support of deployability and sustainability of medical units in operations with the emphasis on training, preparation, materiel and technical security. There are young doctors from the Faculty of Military Health Sciences, members of field hospitals and battalion field dressing stations, traditionally we also have there representatives from the civilian sector - the Czech Red Cross, Doctors Without Borders, etc. The common denominator is the ability of mutual cooperation and coordination, all is being run in a very creative spirit and at the same time heavily supported by representatives of the healthcare and pharmaceutical industry with practical demonstrations and workshops, giving the conference even more momentum. And next year we will have the anniver-

sary, already 20<sup>th</sup> year, which I personally look forward to very much.

**What else can you disclose to us in terms of changes in the defence sector? Is there anything in the medical service?**

Yes, and I am glad for that. From the point of view of creating new units (airborne regiment, support battalion of the host country) and even changes in the system of command and control in the army in general, these facts will, of course, also affect health services. After more than 15 years, an independent Military Medical Division will be established, which will be a professional, methodological and conceptual body of the health service and at the same time will become the governing body, especially of the Military Health Agency. It will simply fulfil the principle of competence-responsibility, which we have already stated as a basic principle in the previous Concept of Military Health Service, approved in 2012, but not fulfilled so far. Therefore I believe that 2020 will be a turning point for the entire military health sector, so keep your fingers crossed for all of us.

General, thank you very much for the interview, we will definitely keep our fingers crossed for you and wish you and the whole healthcare sector a lot of success in future!

Šárka Cook





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# “There is still much to be done, so we must not ease up,”

says the President and CEO of the Defence and Security Industry Association of the Czech Republic (DSIA), dr. Jiří Hynek



## **Mr. President, how was the Czech defence and security industry doing last year?**

Basically good. The long-term upward trend in exports of military equipment continues, although in 2017 there was a slight decline if compared with the previous year. In my view, this decline is caused by two key reasons - lack of skilled workers and transit licenses. Czech products are absolutely competitive in the world, thus there is no lack of orders. But there is a lack of skilled workers across the whole range of industries, so Czech companies are at the edge of their production capabilities and unable to increase their capacity. Czech exporters are fundamentally damaged by transit licenses. Their existence is basically discriminating us within EU for not having sea, therefore we have to undergo several licensing procedures - in our country and in the countries

through which we transit the goods. A number of orders is completely lost, with other ones the delivery time is significantly longer or costs are increased due to alternative transportation, as some neighbouring countries do not allow us to transport our products across their territory. And the European Union bodies are closing their eyes on this discrimination.

## **Where are the Czech products getting on the best?**

About one third of the production is exported to European countries. Other export markets are the Middle East, Southeast Asia and North America. We are trying to penetrate more to African countries and South America, but this is a long-distance run. Czech companies have a very good reputation and this is crucial for us. The defence and

security industry can thus act as the flagship of the entire Czech industry and by penetrating foreign markets they often open the door to other industries.

## **How do you assess the support of the defence and security industry at home?**

Last year was not the easiest for us due to personnel changes in the defence sector. Only after coming of Minister Lubomír Metnar the situation stabilized and we could continue in cooperation with the aim to support domestic industry. This support works very well in the field of pro-export activities, which I highly appreciate as a representative of the industry exporting 90 % of its production. Minister Metnar has already participated in a number of foreign exhibitions, where he supported Czech companies in their export efforts. We closely coordinate



pro-export activities with the Department of Industrial Cooperation of the Ministry of Defence, led by the director Tomáš Kopečný, as well as with the Department of Economic Diplomacy of the Ministry of Foreign Affairs, headed by Marek Svoboda and also with the Foreign Trade Section of the Ministry of Industry and Trade. So pro-export support at home works very well, we even manage to coordinate activities of MIT, MoD and MFA in this area.

Unfortunately, the real support of Czech industry at home is still insufficient. For example, we cannot effectively use the Article No. 346 of TFEU to buy directly from domestic producers, thus avoiding the lengthy, bureaucratic and often economically inefficient acquisition process. We are not able to put into practice the idea that domestic manufacturers must have priority over foreign ones because this support maintaining of capacities contributing to defensiveness of our country. We act as the state of war could never occur, so we are not preparing ourselves for it. But if our state is ever threatened, and by then we will lose all production capacities and know-how due to our lax attitude, then we will be reliant on military supplies from abroad and we will be defenceless.

**We expect the most important and the largest military order ever. Will it be a success?**

Acquisition of infantry tracked combat vehicles is clearly the largest and the most important order lately. The order is accompanied by a number of speculations and media questioning. The worst case scenario that our armed forces and industry could encounter is if this purchase is not materialized. We advocate a high share of work for Czech manufacturers within the acquisition process. And most importantly, to make sure that the major part of the life cycle and possible modernization will be provided by Czech companies. The security situation in Europe is deteriorating, so we must be able to maintain military equipment in a combat-capable state by our own means.

**DSIA is facing the electoral General Assembly, how do you assess its activity over the past year?**

The DSIA electoral General Meeting will be held in Brno, at the University of Defence Club, on 11 June 2019 and I await ample participation of our members. The Prime Minister of the Czech Republic, Mr. Andrej Babiš and a number of other senior representatives of the state administration and the Parliament confirmed their participation. I am very pleased with it and I perceive it as a great support for our work.

Last year was very beneficial for us. We managed to get another subsidy amounting

more than CZK 15 million and in 2020-2022 we will continue to train for free the employees of DSIA member companies according to their own requirements and needs. We organize a number of events, we coordinate public support of MO, MIT and MFA export activities. In addition, we organize a number of seminars and training courses for member companies. We are a part of important events, we become involved in legislation, we are being heard wherever possible. We already organize so many events that one is sometimes lost in it. That is why we have also developed a mobile DSIA application for our members, which gives them an overview of all events and news on a single well arranged platform. So I consider the past period very well, but we need to look into the future that is challenging. There is still much to be done, so we must not ease up. We must fight to maintain the prestige of the Czech industry abroad so that its importance is fully enforced at home and, above all, to create safe environment in our country. This is what we do every day, and all our activities are carried out in the spirit of DSIA motto: „We help to build a safe world“.

*Thank you for the interview.  
Dipl. Eng. Miloš Soukup*



# Security fairs will feature prestigious exhibitors and top exhibits

Spending on defence worldwide is growing and the development of defence and security technologies is accelerating. All this is positively reflected in the 15th IDET International Defence and Security Technologies Fair, which is to take place at the Brno Display Centre from 29 to 31 May 2019. Concurrently with it, the 19th PYROS International Fire Fighting Equipment and Services Fair and the 10th ISET International Security Technology and Services Fair will be held.



IDET is a prestigious display of defence, fire fighting and security technologies in Central and Eastern Europe. It is an extraordinary opportunity for the Czech defence and security industry to comprehensively present its offer to potential customers from all over the world.

## **IDET as a trading platform for the defence industry**

Virtually none of the important members of the Defence and Security Industry Association of the Czech Republic will miss the IDET fair. "The interest of exhibi-

tors in IDET is higher than two years ago; the fair will be more extensive and richer in exhibits. The increase is mainly due to the significant expansion of rented display space, as companies want to showcase a higher number of attractive exhibits," says Michalis Busios, director of the security fairs. The fair will feature all the key candidates for the largest contract in the history of the Army of the Czech Republic worth 53 billion crowns. The 210 infantry tracked combat vehicle contractor is likely to be selected among four companies, including British BAE Systems (CV-90), Spanish General

Dynamics European Land Systems (Ascod) and two German companies PSM (Puma) and Rheinmetall Landsysteme (Lynx). Visitors to IDET can also see all four of the considered armoured vehicles. Of course, their exhibitors will also present other exhibits at their displays.

## **Display of the Ministry of Defence and the Army of the Czech Republic**

An integral part of this year's IDET 2019 International Defence and Security Technologies Fair will be traditionally also the display of the Ministry of Defence and the Army of



the Czech Republic. This time he will have two main motifs based on this year's round jubilees. A part of the display will focus on the 20th anniversary of the Czech Republic's accession to the North Atlantic Alliance, another part will commemorate the 100th anniversary of the General Staff of the Czech Army.

The Defence Ministry will „occupy“ part of the Hall P and the adjacent open area K. The interior of the display will present the current and future equipment of the Army of the Czech Republic under the heading „20 years in NATO“. You can see for example the Pandur wheeled armoured vehicle in command-staff modification or Iveco light armoured vehicles. 100 years of the General Staff of the Czech Army will be represented by historical equipment headed by a model of the Spitfire air fighter in real-life size or by products of Czech armament manufacturers, which were in service with the Czechoslovak army in the period between the two world wars. As part of the supporting programme in Hall P, the military artistic ensemble Ondráš will also perform and a discussion with military photographers will be staged.

The programme of the outdoor part of the

display will be dominated by dynamic demonstrations, especially the demonstration of handling of transport containers (for example loaded with Iveco light defence vehicle) or a model renewal of the mobility of a humanitarian convoy by means of the Czech Army equipment. A complete novelty in the programme will be the presentation of activities of military dog trainers, and special show performances will be given by motorcycle units of the Castle Guard. On the open area adjacent to Hall K there will also be a static demonstration of the Czech Army workshop and repair activities, including Mi-171š and W3-A Sokol helicopters or Tatra trucks with the RBS-70 anti-aircraft set and PRAM mortar. In addition, visitors will see the equipment available to field hospital paramedics in foreign missions and will be free to take a test to detect malignant melanoma.

The display will also include tents devoted to the recruitment for the Czech Army and Active Reserves, and the Brno Community Centre for War Veterans and the Military Solidarity Fund will present their activities as well. And last but not least, the travelling exhibition „The Second Life“ will be a part of the defence ministry's display, which represents, for the fourth time already, the daily

life of members of the Czech Army serving in foreign missions.

#### Exhibitors' news

Czech companies such as EVPÚ Defence, Česká Zbrojovka, Glomex MS, Omnipol, VOP CZ, SVOS, LOM PRAHA, PRAGA-Export and others will obviously be present at the fair. The Czechoslovak Group display will be decorated with the legendary Black Hawk army helicopter. Newcomers to IDET include the company Nimrod – Ivo Štorek, which will introduce new sniper rifles, automatic guns and the latest range of riflescopes. Also the manufacturer of industrial X-rays, ELEDUS, will have its premiere. In its display you will see a new compact X-ray device SCIOX Security for wiretapping search and checking mail or luggage. An unmanned helicopter will be boasted the first-time exhibitor Modelárna LIAZ. Zetor Engineering will showcase its Gerlach armoured vehicle. The Military Technology Institute is preparing a record-breakingly large stand this year. It will exhibit for the first time not only inside the hall, but also in the outdoor area, where it will present its new antenna masts. Its current projects and new defence research and development technologies will feature, for example, a modernized biobox for





the transport of deadly infected people or modernized weapon systems including a 60 mm mortar. News for this year are reported by both large and smaller exhibitors across various sectors. For example, the company Aliter Technologies will introduce a virtual VIMA mast that replaces the traditional mechanical masts. The radar equipment and airport surveillance and landing radar manufacturer T-CZ will display its new SIMON monitoring system and the recently completed LVA aerial. The company Olympus Czech Group will showcase a new device for visual inspection of hard-to-reach areas with UV and IR lighting. The company NIDES brings, among other products, its new model of remote-controlled Telemax robot for pyrotechnic applications. The Prison Service of the Czech Republic will present the latest escort vehicles at its display, the conditions of inmates and persons in detention, and illicit items confiscated from detained persons. In two dynamic demonstrations, members of the operative escort group and units under single command will present themselves.

#### Large international attendance

IDET reaffirms its importance also with the high proportion of foreign exhibitors. For

the first time, the Belgian company CMI Defence, which manufactures state-of-the-art weapon systems for military vehicles, is exhibiting here, and after several years, the Finnish manufacturer of armoured vehicles, PATRIA, is returning. Aircraft manufacturer Embraer is coming from Brazil for the first time and Lockheed Martin is returning from the US as one of the industry's leading brands and also as an IDET partner. There will be also the largest Israeli aircraft manufacturer IAI - Israel Aerospace Industries. The so-called Special Focus of the fair this year, meaning a special theme, will be dedicated to Swedish-Czech cooperation in the defence industry. For example, Sweden will be represented by Saab Technologies as the Gripen aircraft manufacturer. A national display is being prepared by the Swedish Defence Industry Association. There will be presented additional Swedish manufacturers and two Swedish companies will also exhibit at the BAE Systems display.

#### Gold IDET Awards

The best exhibits will again compete for the prestigious Gold IDET award. Exhibits will be evaluated for example in the categories of military and security technology, military

and security communications and information technology or military and security logistics and services. The official announcement of the competition results and the award ceremony will take place on 29 May 2019 as part of the IDET 2019 opening ceremony.

#### IDET ARENA and other attractive supporting programme

IDET ARENA will be in operation again, which is an off-road polygon for dynamic military, fire fighting and police equipment demonstrations in action. The programme of this demonstration track will start daily at 10:00 a.m. (Wednesday from 11:30 a.m., Saturday from 9:30 a.m.). There will be demo drives of vehicles, demonstrations of the intervention of the units of the Police of the Czech Republic, the Fire Rescue Service, the Municipal Police, the Army of the Slovak Republic, the Prison Service of the Czech Republic and the Customs Administration.

During the security fairs will, excellent professional supporting programme will also be featured, bringing together defence and security technology professionals from various countries. The University of Defence in Brno is once again preparing the tradi-



tional CATE Conference (Community-Army-Technology-Environment). There will also be a professional conference with international participation called Pyromeeeting. It will take place on 30 May 2019 in the congress hall of the Continental Hotel in Brno. The conference is organized by the Ministry of the Interior – General Directorate of the Fire Rescue Service of the Czech Republic, in cooperation with the Czech Association of Fire Brigade Officers and the company Trade Fairs Brno. This year's conference is focused on climate change.

PYROS and ISET fairs will showcase new features to better protect lives, health and property

The PYROS and ISET fairs are located in Hall F, which will be filled with stands of companies from various sectors. In addition to firefighting equipment, there will be also fire protection equipment, security and police equipment, monitoring equipment or flood protection.

The traditional exhibitor WISS CZECH is preparing the largest commercial display of PYROS this year. Visitors will see the IVECO DAILY DA L1MS with a 750-liter tank and a fire pump driven by vehicle engine, 366 units of which are currently supplied to the Ministry of the Interior. You certainly will not miss the stand of MOTO-TRUCK, a Polish manufacturer of special vehicles for firefighters. The largest exhibit brought in will be a large tanker on the MAN chassis and also attractive will be a transport special on the IVECO chassis, of which only two pieces area available for viewing in the Czech Republic. Compared to last year, the stand of the company BCE, which supplies tricycles, quads and tracked vehicles for snow, will be significantly expanded. A solution for extracting exhaust gases directly from the fire truck will be presented by the company JVB Engineering representing the Dutch company Plymovent – a world leader in exhaust gas extraction. Holík International once again offers a range of firefighting gloves at PYROS.

New exhibitors include Nordex Europe, which represents Scandinavian and Spanish manufacturers of fire protection and fire fighting equipment on the Czech and Slovak markets. For the first time at PYROS, you will also be acquainted with the range of W-Technika group, a supplier of hand-held and stationary pyrometers, with the products of Webasto Thermo & Comfort CZ, which introduces auxiliary heating and air conditioning systems for fire engines, and other interesting companies. The BALBAR

mobile ballistic barrier, which will be presented by the company STRIX Chomutov, is an absolute novelty. A new exhibitor is the company FIPREX CZ, which specialises in protection against floods and torrential rains. The company DENIOS regularly participates in the fair, offering fire-proof cabinets and fire-resistant warehouses. Its products are used for safe storage and handling of flammable liquids. The company Dcom will bring cutting-edge solutions for professional communication to Brno.

PYROS and ISET are traditionally attended by key government organizations. And it is not about formal presentations, but visitors can look forward to very attractive exhibits and live demonstrations of intervention actions. It is the outdoor areas that are an important place this year that you should not miss when visiting security fairs.

The Fire Rescue Service of the South Moravian Region will stage a show of practical firefighting training directly in front of visitors throughout the trade fair. It will also be actively represented by dynamic demonstrations of intervention equipment on the IDET ARENA outdoor polygon. The Police of the Czech Republic will also give a presentation, focused on the 100th anniversary of our transport police, in the form of a stand and practical demonstrations in the IDET ARENA 2019 programme. The Administration of State Material Reserves will provide a special bridge for the field polygon and the Brno City Police will show an intervention by dog handlers' unit in the event of mass disruption of public order. The Czech Prison Service will bring its latest escort vehicles and will also show illicit items confiscated from prisoners. In two dynamic

demonstrations, members of the operative escort group and units under unified command will be presented. The Customs Administration of the Czech Republic will exhibit a large-scale mobile X-ray monitor, as well as demonstrations of service dog handling and mobile surveillance patrols on the outdoor polygon. The Ministry of Labour and Social Affairs will also be represented on the display of the Occupational Safety Research Institute.

### Safety Day – Rescuers for Children

On Saturday 1 June, the Safety Day – Rescuers for Children programme will be held at the Brno Exhibition Centre. The exhibition grounds will be open to the general public after three days intended namely for professionals. Children will try out the work of rescuers, police officers and firefighters. The main part of the programme will be held in Hall Z. An attractive exhibition of historical military equipment will be organised by the Veteran Vehicle Club Březník. All displays of PYROS and ISET in Hall F will also be open. The IDET fair will also enable access to the display of the Ministry of Defence of the Czech Republic and the Czech Army placed in Hall P. A great show will offered during a competition in the TFA disciplines for the Moravian Fire Association Presidium Cup.



# Meopta in 2019

## a year marked by large military orders



Meopta, in Přerov, recently celebrated its 85th birthday — a respectable anniversary. Since 1933, it has gone a long way — from making enlargers and lenses to producing optics for space applications, medical devices, the semiconductor industry, aviation and more. Also significant is the military production division, which focuses on two main areas — optics for individual soldiers and optics for armoured vehicles.



### Large orders for the Czech army

Events of recent days and weeks point to a very interesting year for Meopta's military division, both in the number of orders placed this year by the Army of the Czech Republic and their overall volume. The largest order, for the most devices, is a further stage in the rearming of the forces with new BREN 2 assault rifles from supplier Česká Zbrojovka Uherský Brod (CZUB). Meopta was approached as one of the possible suppliers of optical devices to be delivered as an accessory for mounting on the BREN 2. Based on the Czech army's concept, it is to be a modular system consisting of a collimator sight in combination with day and night magnifi-

cation modules. Signing this contract with CZUB would provide an estimated 200 to 300 jobs for 4 to 5 years.

### Opportunity for night vision equipment – tender for precision rifles



Another project that may see fruition this year is the purchase of new high-precision rifles, including optical devices for day and night shooting. Meopta finds this project interesting for possible deliveries of the MeoNox DF 1 Tarsius night-vision conversion lens, which allows shooting under reduced light conditions in combination with a primary daylight sight. If Meopta gets the contract, the subsequent deliveries would be a very important reference, possibly opening the doors to other supplier relationships with foreign armies, not only in NATO. This product is currently being tested by several major foreign armies, and any reference from the Army of the Czech Republic could certainly help win over other customers.

### Continued supply of optics for MINI-MI machine guns

One project that successfully reached the contract stage a few weeks ago is delivery of 70 sets of optical devices intended for newly purchased MINIMI machine guns from Belgian producer FN HERSTAL. This is a repeat delivery of devices already supplied in 2014–16 to the tune of 300 sets. The 70 sets are headed for completion and are requested by the Czech army later in 2019. Meopta will do its utmost to fill the order and meet the Czech army's needs and expectations.

### The largest tender in the history of Czech army IFVs, and Meopta participates





Speaking of important projects that drew the gaze of Czech military technology producers, including Meopta, it is hard to leave out the Czech army's project to rearm infantry fighting vehicles (IFVs). This attracted maximum attention from the professional public, the media and even laypeople. The reason is obvious — it is the largest strategic order in the history of the Czech army, more than CZK 50 billion. Just as this contract is strategic for the Czech army, it can be considered just as strategic for Meopta. As already mentioned in various media, Meopta, as a worldwide producer of optics and optical systems, is putting forth a valiant effort and is ready to get involved in this project as a strategic domestic production partner of selected electro-optical systems for drivers, commanders, marksmen and others. With this goal in mind, the company is holding concrete talks with several potential manufacturers and suppliers of these systems. The goal of these negotiations is to transfer production technology

to Přerov and establish collaboration with these producers so that Meopta can meet the requirements of the end user, the Army of the Czech Republic. They include maintenance and support of these electro-optical systems over the vehicle's entire life cycle. Given the technologies used, the complexity of the electro-optical devices being considered, the total quantity of devices to be delivered with the purchase of new IFVs — as well as the life cycle of the vehicles acquired, along with the need for technical maintenance, repairs and logistical support — the IFV project is of strategic importance, not only for the military division, but for the whole company. Regardless of the final extent of participation in the project, it will mean creation of new jobs with strong demand for employees qualified in design, engineering, assembly and testing.

Negotiations are currently underway with manufacturers of the new IFVs. In recent weeks, an agreement has been

reached with the Swedish firm SAAB, which makes and delivers the UTAAS marksman sights, a crucial element on CV-90 vehicles from BAE Hägglunds. For this device, possible production and subsequent service will be completely handled by Meopta. SAAB will transfer the necessary production, testing and service technology.

Since there are several supplier candidates for the new IFVs, as well as for the optical devices offered, Meopta still has some challenges and a lot of work ahead. Let's hope all that effort will pay off, and that after all the negotiations and decisions, we can find the solution that best meets the expectations of both Meopta and the Czech army. So keep your fingers crossed and wait for the results.

### Promise in the Middle East and South America

As a company founded on exports, Meopta is seeking its place in worldwide markets. Its business activity is especially focused on Europe, the Middle East and Southeast Asia. Beyond these regions, the company has also aimed at South America, which appears to have huge potential in the field of optics.

Over the past two years, Meopta has gradually succeeded in significantly increasing its activities in the Middle East. At the same time, several interesting projects are on the verge of completion or in the late stages of negotiation. These involve supplies of optical sighting and observational equipment. Some of them are also in negotiations with local partners for production collaboration.

Among them, we could mention the compact, fixed-magnification MeoForce DF 5x40 sight intended for assault and precision rifles (DMR), as well as light machine guns with various modifications. Another is the MeoForce DF



3-12x50 sight with variable magnification and shortened optical structure. It is particularly for precision and sniper rifles intended for police use. Observational optics include the MeoGuard DF S2 spotting scope with variable magnification within a range of 20–70x. It receives very positive reviews from police and the military. Evaluation is currently going on for supply of several thousand of these optical devices.

### Customers appreciate great quality at a good price

Not only for the products mentioned above, customer feedback mainly praises the quality of the products in relation to their prices. They also appreciate the fact that the products offered are secured completely from our own technology and production, which Meopta has constant access to as almost the only worldwide producer of such systems. Development, design and manufacturing of individual optical and mechanical parts, final product assembly and testing are all in house. This is unique today, because most worldwide brands and Meopta's competition are moving their production to the East, especially for economic reasons. However, their inconsistent control of suppliers shows up in their quality. As a supplier of optical devices for the armed forces, Meopta has a clearly established strategy and direction on this issue. In this case, the motto "quality first and foremost" is key, even though that creates a complicated position in price comparisons with some competing products, especially in the collimator sight segment.

However, developments in the past few months show that this is the right path. It has helped Meopta beat the competition from the United States, Germany and Austria, not only with end users, but with small arms producers in various corners of the world. So much, in some cases, that these manufacturers recommend certain products to end users as preferred accessories to their arms.

Longstanding and new weapons manufacturers include STEYR MANNLICHER, STEEL CORE, SERO International, LMT and others.

### Recent successful orders

Even though the military program is not currently Meopta's core (it currently makes for about 10% of the company's revenue), it has recently made several interesting deals.

Random examples include supplies of daylight sights to the Caracal company in the United Arab Emirates, purchase of daylight sights for INSAS assault rifles by the Indian army, and purchase by the Lithuanian army as part of modernizing G36 assault rifles from Hec&Koch.

In the field of collimator sights, initial deliveries have been made to Finnish special forces, and multiyear framework agreements were made with SAAB. Deliveries were made of the first hundred collimators as part of the optical system for Carl Gustav M4 rocket launchers, large numbers of which are owned by the United States Army.

### Preferred solution for large-calibre anti-materiel rifles

Last year, we successfully tested and confirmed the quality of MeoForce DF 6-24x56 sniper sights (equivalent to the original ZD 6-24x56 sight) on some types of 12.7x99 mm calibre weapons. This helped Meopta open new business opportunities in a very specific market segment. One very interesting success is Meopta optics' selection as the best solution for the GM6 Lynx rifle from Hungarian manufacturer SERO International, which is top in the world for large-calibre anti-materiel rifles. This unique weapon has already been integrated into several armies and other armed forces around the world. At the same time, it is worth mentioning that Meopta overcame stiff competi-

on from the main German competitor, which had long been the preferred optics supplier for just this type of weapon.

### Production in the Czech Republic, testing under real conditions

Meopta's machine inventory has been significantly renewed in recent years, and now the research and development capacity has been strengthened. In the field of military optics, Meopta has a long tradition that combines new product development with new design solutions. The company tests the products with professional marksmen and former career soldiers from the Czech army on realistic terrain. We listen to their suggestions and use them to further adjust the products for reliability and easy practical use on the modern battlefield. A further advantage is keeping complete production right in Přerov for monitoring perfect quality, and not moving production to the East. After 87 years, Meopta believes the customers appreciate that.

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





# BARAK MX

*plně flexibilní modulární systém protivzdušné a protiraketové obrany umožňující plnit většinu operačních úkolů pozemní PVO a úspěšně řešit multispektrální ohrožení*



## **BARAK MX (SYSTÉM PROTIVZDUŠNÉ A PROTIRAKETOVÉ OBRANY) - revoluce v protivzdušné a protiraketové obraně**

- úplná flexibilita v řízení bojové činnosti, konfiguraci a integraci systému i dlouhodobém modulárním rozšiřování
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- technologie Plug-and-Fight umožňuje integraci jakékoliv kombinace efektorů a radarů

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# Over 40 Years of Israeli experience with UAVs

## In the Beginning

For four decades Israel has been positioned as the pioneer and leader in the field of unmanned aerial systems (UAS), offering a broad range of unmanned systems operating in the air, on the ground, at sea and in space; all can be traced to a single system borne in 1975.

As part of the lessons learned after the Yom Kippur War in 1973 when Israel was surprised by a combined attack of the Egyptian and Syrian armies, Israel's intelligence decided to enhance its intelligence capability to eliminate any possibility of such a surprise recurring.

In early 1975, when Israel Aerospace In-

dustries (IAI) received the operational requirement from the MOD (Ministry of Defense), the solution was broadly defined. The Israel Defense Force (IDF) wanted 'an eye in the sky', a sensor that would be able to see 'over the hill', or 'beyond the line of sight', providing precise information in real-time.

In 1982, the Scout RPV flew again over South Lebanon, this time in support of IDF ground and air operations as part of Operation "Peace for Galilee". In this operation the IDF conducted an unprecedented campaign against the Syrian air defense missile system deployed in Lebanon. The Scout provided the IAF with a critical real-time view of both threats and targets, enabling its fighter

jets to engage targets from standoff ranges well beyond the pilot's line of sight.

## Israeli UAVs Gaining Acclaim

This impressive performance raised interest in the US and brought about extensive cooperation between Israel and Washington.

The result was an enhanced 'Tactical Unmanned Aerial Vehicle' version of the Scout called Pioneer, designed specifically for US Navy and Marine Corps requirements, which demanded a more robust platform made exclusively of corrosion free composites.

Israel's systems were battlefield pro-





ven in the Lebanese War and were used abroad in several large-scale operations. Additionally, the increasing use of UAVs in Israel and the US attracted increasing interest from other nations, leading to UAV sales to a number of customers in Europe and Asia.

Some customers required unique designs to fit specific needs, which IAI was ready to address. One example was the Swiss requirement for a UAV capable operating from ice-, snow- or grass-covered landing strips. The result was the Ranger, a system tailored specifically for Swiss requirements.



### New Generation of UAVs

Heron proved to be superior to previous versions of Unmanned Aerial Systems (UASs), as it was quieter, was able to carry heavier payloads, and could support missions extending over days and nights.

Due to its superior capabilities and flexibility, Heron quickly won export orders from traditional customers already operating the Searchers, as well as from new clients and operators. By 2007, the IDF had also joined and acquired Heron for its unmanned squadrons. The Heron proved highly reliable in combat missions supporting coalition forces in Iraq and Afghanistan, and operated by the Canadian, French, Australian and German Forces. Today, Heron UAVs are in operational service worldwide with more than 20 users.

Heron became the first UAV offering complete maritime mission integration. Carrying mission payloads comprising radar, Electronic Support Measures (ESM), Communications Intelligence (COMINT) and Electro-Optical (EO) payloads, Heron can take off from land bases and join naval task forces or patrols hundreds of kilometers offshore, using a satellite datalink. Once overhead, the supported vessel takes control over the drone, operating it as part of its mi-

ssion. At the end of the mission, shore-based control can again take over to bring the Heron back to land.

Realizing the great potential of the Heron in Medium Altitude Long Endurance (MALE) missions, the IAF presented IAI with further challenges – namely, to fly higher, and in stronger winds and gusts, and to carry larger and heavier payloads on longer and extended missions. These operating conditions required a larger platform and new, more powerful propulsion – and this led to the turboprop-powered Heron (Heron TP).

Development of the Heron TP began in 2004, leading to the first flight of a prototype in 2006. Heron TP entered service with the IAF in 2010 becoming the largest unmanned aerial system operated by the IDF.

### Enhanced Capabilities of Ground Segments and Applications

Enhanced ground segment capabilities include automatic taxi, takeoff and landing features, and automation for gathering intelligence information in real-time; this provides the end-user with increased operational efficiency and flight safety.

Israel's UAV solutions have come a long way since the 1970s, when a single gyro-stabilized remotely controlled

video camera, strapped onto the drone required five operators and technicians to operate. Over the years this simple, yet effective payload was improved with a special transparent window, and protective shell, to become an integrated electro-optical payload.

As a pioneer in unmanned systems design and operation, Israel is also positioned as a leader in the integration of UAS operations in civil and military airspace, developing Traffic Collision Avoidance Systems (TCAS), and Search and Avoid sensors, while contributing its professional expertise and innovation to the standards being developed in Europe and the US regulatory forums.

### 40 Years Summarized

In conclusion, Israel's present and future UAS solutions are focused on systems of systems, rather than the specific platforms developed since those early days of the Scouts.

Today's platforms employ a high degree of automation and flight safety, carrying multiple sensors, fulfilling complex missions with high level of autonomy. Intelligence Collections, Terrain Dominance or Maritime Surveillance missions are often performed with an integrated array of sensors, including radar, Electro-Optical (EO) and Electronic and Communications Intelligence and Surveillance.

# Rafael

## Air and Missile Defense Systems

Rafael Advanced Defense Systems Ltd. has been designing, developing and manufacturing world-leading missile systems for more than 70 years, and is considered Israel's missile systems house. Its ground-breaking missile systems have been designed for a variety of air, land, and naval applications.



One example of such a system is the company's famous Spike Family of precise, tactical, electro-optical missiles that can be launched from air, land and naval platforms to ranges of up to 30km. Spike has been sold to 31 countries with over 30,000 missiles delivered to-date, including to the Czech Armed Forces.

Defense of the home front and of military installations and infrastructure from

short to medium range aerial, missile and rocket threats has increasingly become a strategic imperative.

Since its establishment, Rafael has taken a leading position as a skilled developer and manufacturer of advanced weapon systems in the air-to-air and air defense market. Rafael offers a complete and integrated air and missile defense system of systems solution.

Rafael's most advanced air-to-air missiles are the Python-5, a fifth generation air-to-air missile that provides the pilot engaging an enemy aircraft with a full sphere launch capability and the I-Derby, an active radar air-to-air missile that provides fighter aircraft with outstanding and effective performance in both short ranges and Beyond Visual Range (BVR) interceptions. The recently-introduced RF-guided I-DERBY is equipped with a





new software-defined (SDR) active radar seeker developed by Rafael, enabling effective adaption to evolving threats by software updates, providing up-to-date and future capabilities. Using the I-Derby ER extends the air-to-air range of up to 100 km and in air defense configuration with a booster up to 80 km.

Both missiles have full commonality in air-to-air and air defense configurations.

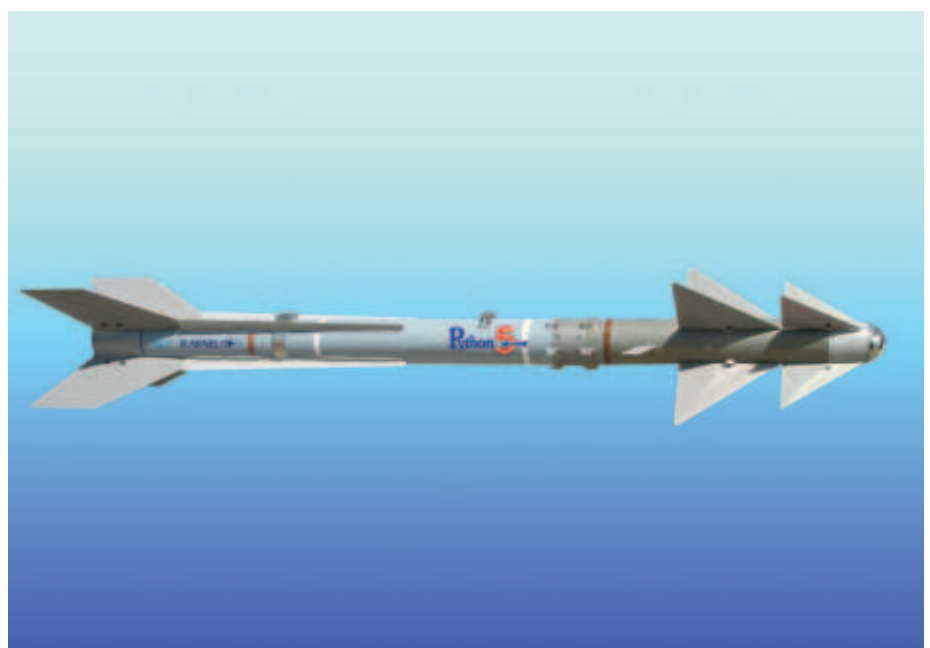
Rafael has adopted its legacy capabilities in the air-to-air missile domain, and has developed and sold around the world its SPYDER Family (Surface-to-Air Python & I-DERBY) short/medium range mobile air defence system. SPYDER is a combat-proven, fully-mature quick reaction, low level SAM missile system designed to counter attacks by aircraft, helicopters, UAVs and precision guided munitions. The SPYDER is an air-transportable weapon package, based on the I-DERBY active radar (RF) and Python-5 dual waveband Imaging Infrared (IIR) missiles and includes the short-range (SPYDER-SR) and medium-range (SPYDER-MR) versions. SPYDER-SR system is centred on a number of truck-mounted Missile Firing Units with Rafael Toplite EO/IR sensor for surveillance, identification and tracking, turrets, carrying any combination of IIR/RF missiles on a rotatable launcher assembly with

four canisters, and a Command and Control Unit, and comprising an ELTA EL/M-2016 MMR air defense radar. SPYDER-MR differs mainly by its longer-range versions of the two missiles (thanks to an added booster), near-vertical 8-cells launchers and longer range ELTA EL/M-2084 MMR radar. The SPYDER-SR and MR weapon system engagement ranges have been enhanced respectively to 20 and more than 50 km. Featuring 360°, day/night, all-weather, simultaneous multi-threats ca-

mixing the two version elements and introducing new components, such as C2, vehicles (e.g TATRA), etc.

Rafael is offering the Czech Republic MOD the „SPYDER“ Family as part of the country's air defense modernization program along with the MADR program for procurement of eight ELTA MMR radars.

pabilities, the SPYDER family offers Lock-On-Before-Launch (LOBL) in the SR variant, and Lock-On-After Launch (LOAL) modes of operation in both variants. The SPYDER family is publicly known to be in service with the Republic of Singapore (SPYDER-SR) and India. SPYDER has been acquired or is in service with other unnamed customers around the world. Based on an open architecture, the SPYDER system configuration can be tailored to customer's needs. Such a mixture can include short and medium range systems or V-SHORAD and SHORAD systems and missile systems or



# RETIA Pardubice will present a hot new product at the IDET 2019 fair – the ReGUARD radar

RETIA is one of the leading Czech manufacturers and suppliers of radar technology and special electronics. Over the more than 25 years of its existence, it has developed a range of unique and cutting-edge systems that have been used in the military sector as well as by civilian users. The latest innovation from the Pardubice based company is the ReGUARD radar, which will have its Czech premiere at the trade fair IDET 2019.

RETIA is a traditional exhibitor at the IDET trade fair in Brno and will not be missing this year. In addition to its proven products, it will also exhibit a novelty in the form of the multi-role 3D radar ReGUARD.

It is designed for the detection and tracking of ground targets and slow low-flying objects with a small radar cross section simultaneously. A specific feature of the novelty is that it searches the space of interest by utilizing electronic beam steering and mechanical rotation of the radar head.

The design of the ReGUARD radar is flexible and exclusively uses semiconductor technology, which ensures high reliability of the system, including parts redundancy. ReGUARD belongs to the category of pulse-Doppler 3D radars, which brings the advantage of a great range and better resolution in the distance compared to fixed wave radars. The versatility of the ReGUARD radar is underlined by the possibility of using it either as a standalone sensor or as an integral part of a higher system.

ReGUARD works in two basic modes, sector or rotational. The modes differ from each other in the way they scan the area in azimuth. In sector mode, the radar beam is steered only electronically in azimuth and elevation. In rotational mode, the radar sensor head revolves on a turntable at a speed of 15 revolutions per minute and the



electronic steering of the beam is primarily used in elevation. Steering in azimuth provides rapid confirmation of detection when initiating track and enhances the quality of tracking while scanning.

The new radar enables simultaneous monitoring of ground and air targets and can capture a wide range of objects. It is therefore suitable, e.g., to protect borders or important infrastructure, and it will work well in anti-drone systems, e.g. for the protection of airports, but also in the air defence systems.

ReGUARD can be delivered in portable, stationary or mobile configurations. In the portable configuration, the radar head is mounted on a tripod allowing for easy location changes. In the stationary configuration, the radar head is fixed at a stationary location like a building or on a pole. In the mobile configuration, the radar head is fitted on a vehicle or other movable platform. ReGUARD is characterized by its compact dimensions and low weight, e.g. the radar head weighs only 65 kg. To reduce the maintenance demands, increase durability and enable deployment in harsh weather

conditions (e.g., dusty environment) the RETIA designers chose passive cooling without fans.

The deployment and start-up time does not exceed 10 minutes while the radar can operate continuously for an unlimited period. Thanks to the ability of electronic steering of beams, ReGUARD allows quick scanning of the area of interest, so it can identify and track priority targets within a few seconds. In the case of objects with a small radar cross section (LSS), its range is 18 km with an altitude coverage of up to 3 km, while in the ground target mode the instrument range is also 18 km.

The radar evaluates the information about targets

using advanced signal and data processing and thus can effectively suppress clutter. The radar also has a built-in automated self-diagnostics system, which facilitates its maintenance and guarantees high reliability. Part of the ReGUARD radar is a compact workplace for the equipment operation and diagnostics, which can be placed in remote areas from the radar sensor position depending on the nature of the deployment.





## Active radars from Pardubice cover more and more of the world

The company ELDIS Pardubice, s.r.o. signed an important contract for the delivery of radar systems for Civil Aviation Administration of China. The company should deliver thirteen radars before the end of the year 2020.

Based on the won tender, the leading Czech producer of active radars was awarded a contract for delivery of brand new radar systems to 13 sites in China. This culminated from several years effort of the company to promote the products in this country. "This contract will be fulfilled by 2020 and we believe that its successful delivery can help us with further opportunities in the Chinese market. This is the first delivery of ELDIS radars to China, which was preceded by a long certifica-



tion process," Andrej Čírtek, spokesperson of ELDIS Pardubice.

The supply includes 8 secondary radars MSSR-1, 2 primary radars RL-2000 and 3 collocated radars RL-20001/MSSR-1. China has thus become one of the most important customers of ELDIS Pardubice,

which has during 27 years of experience delivered the radar technology to more than 25 countries worldwide. Recently, the company dominates the airport radar market in the Czech Republic, Poland, India or Pakistan.

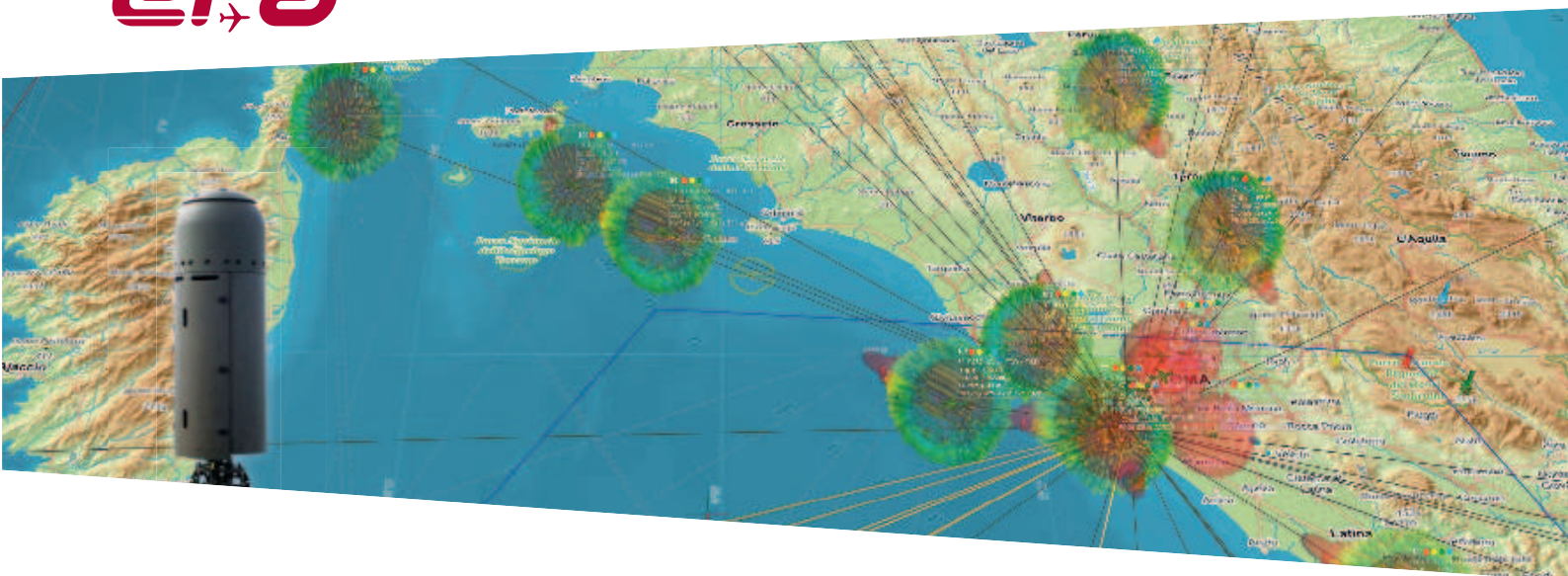
### Experienced team of professionals is constantly growing

The company ELDIS Pardubice employs about 180 professionals in various positions

and currently enlarges the production capacities to meet the demanding requirements of customers and to offer them reliable and high quality products. This is also evidenced by a number of prestigious awards, which the company and its products have received in recent years.



MORE THAN SENSORS



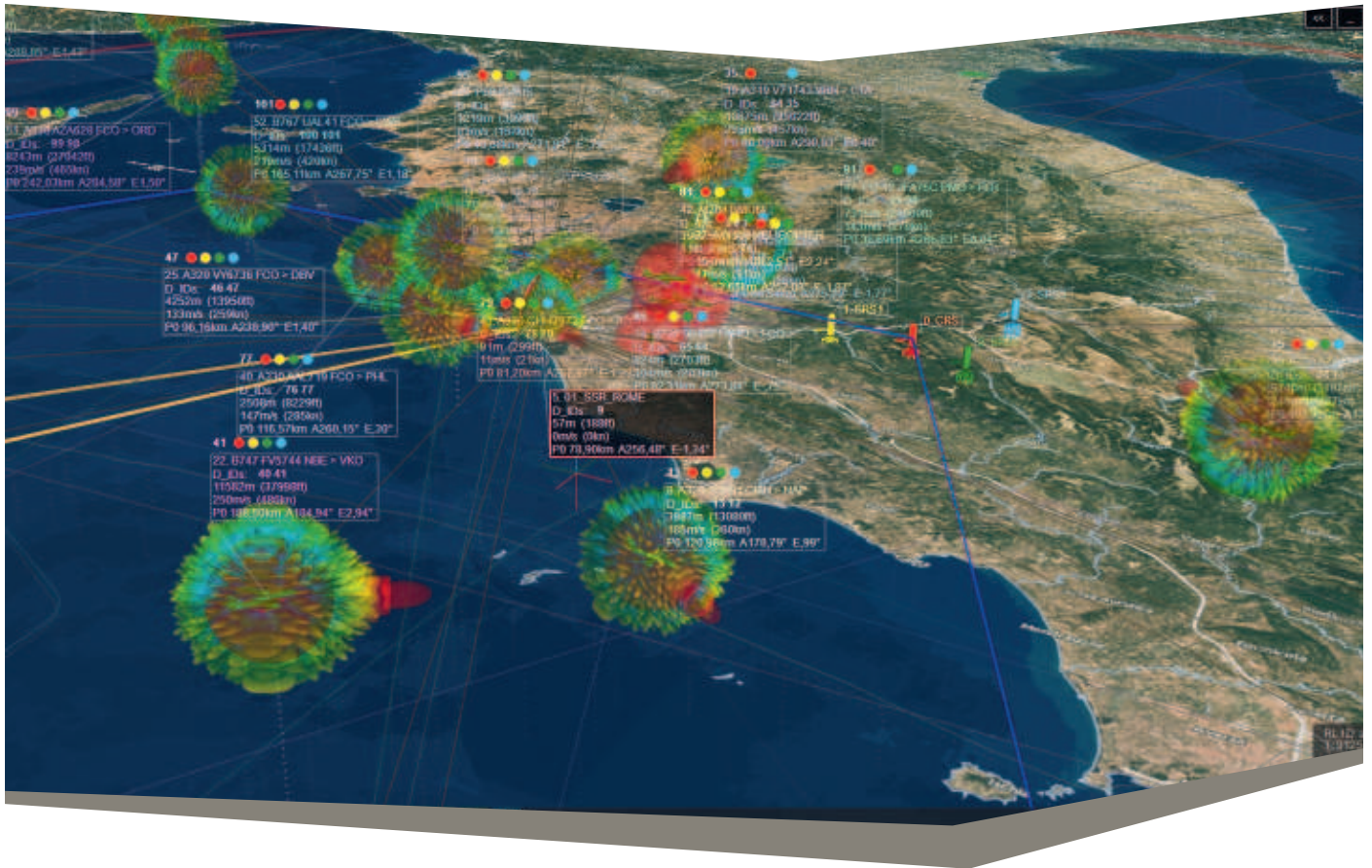
## Passive ESM Tracker Simulator

Training tool for the Passive Surveillance Systems (e.g. VERA-NG)  
 – simulating any type of battlefield scenario: airspace, ground or navy.



# VERA-NG Simulator

## Training tool for the Passive ESM Tracker by ERA company



The training simulator is a military reconnaissance tool, which provides training of passive emitter tracking systems and electronic warfare. The training simulator significantly decreases the time needed for new users to obtain needed experience without affecting the performance of the operational system.

ERA Company (a member of OMNIPOL group) can deliver various scenarios reflecting the following themes or ERA experts can create any scenario on demand to create situations which might be extremely rare or almost impossible to find in the real environment, such as: navigation flights, dog fights, AWACS monitoring or border crossing. The training can be carried out using data from prepared sce-

narios for targets of all kinds – airborne, maritime or ground in different battlefields and terrains.

The simulator system consists of the VERA-NG console as a workplace for operators (trainees), a simulator console as a workplace for instructors (trainers), a central processing station and receiving universal military module.

VERA-NG addresses critical elements in today's air defence and electronic warfare operations by providing the most advanced and state-of-the-art Passive Surveillance System designed for detection, location, identification and tracking of air, ground and naval targets. VERA-NG is Passive ESM (Electronic Support Measures) Tracking (PET) technology, which

uses advanced techniques to conduct cross-border long-term and long-range surveillance without alerting neighbours. It effectively „sees without being seen“.

ERA is a leading company in multilateration, multistatic surveillance, and reconnaissance technology. We implement systems for military and civil purposes, deployed in 65 countries on 5 continents with 24/7 operations. ERA has developed unique passive system VERA-NG tailored for air, maritime and land target surveillance and reconnaissance for AD and EW. In parallel, ERA made air traffic control history when deploying the first multilateration system and introducing gate-to-gate surveillance.





**NEW**

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## **ReGUARD**

Multi-role 3D radar for the detection and tracking  
of ground targets and slow low-flying targets

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Instrumental range for ground and LSS targets up to 18 km

Altitude coverage up to 3 km

Easy integration on masts, rooftops, poles or mobile objects



# Modelárna Liaz, spol. s r.o.



## The main activities

- The production of highly complicated parts from special materials for the aerospace, defense and automotive industries.
- The construction and manufacture of molds and fixtures for the aerospace, defense and automotive industries.
- The production and complete delivery of the UAV helicopter komplex SkySpotter 150. Ready-made solutions tailored to the customers needs.
- The negotiation and delivery of monitoring according to the customers needs.

## Economic index

Type: LTD company

Turnover: 300 mil. CZK

Equity: 162 mil. CZK

Company foundation: 1996

## Foreign Relations

Business contacts with many countries in Europe, Africa, Asia and South America.

## Commercial offers

- The research and development work in the area of monitoring
- The development and production of UAV helicopters
- Offers of development and construction works in the industry aerospace
- The delivery of UAV complex SkySpotter
- The delivery of parts from specific materials and production technologies
- The delivery of tools and fixtures for the production of parts



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Dynamit Nobel Defence



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- Long Range Multi-Purpose High Explosive
- Anti-Tank (HEAT/HESH)
- Anti-Structure
- Smoke
- Illumination



## RGW 60

- HESH
- HEAT
- HEAT-Multi-Purpose
- Anti-Structure

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# Achievements of Explosia Pardubice

Explosia, the manufacturer of explosives and propellants in Pardubice, begins to prepare for a big celebration. In March 2020 it will be exactly one hundred years since the establishment of the Joint stock factory for explosive substances. Explosia is not just Semtex plastic explosives and similar products. Through the Semtín factory gate we also distribute products used in stone quarries, as well as by fire fighters and police forces. Our products for military purposes are also in demand.



## Fight against terrorism

The Research Institute of Industrial Chemistry, which is a part of Explosia a.s. and celebrates its 65<sup>th</sup> anniversary this year, developed a means for combating terrorism. It is called Semtex Desintegrator. It is a special charge for "opening" suspicious luggage. The spokesman of Explosia a.s. Martin Vencl explains: "Desintegrators are offered in two variants. The smaller one is used for the professional opening of objects with limited rigidity, e.g., suitcases or backpacks, by explosives. The second, more powerful, variant

is designed for opening of harder packages, e.g., metal barrels or wooden crates. The Desintegrator can pierce steel up to 4 mm thick."

The Desintegrator uses so-called physical cloud impact, which transfers energy onto the object through heavy powder material. Objects at shorter distances can be pierced, but at longer distances (up to approx. 150 cm) energy is lost and poses no danger to the surroundings by fragmentation. Because of the use of such a low amount of explosive, it is safe to use in urban areas.

In 2016 the EOD service of the Police of Czech Republic expressed interest in these special charges and tested them. "We are currently working on the details so the Desintegrator meets the requirements of its users," says Martin Vencl. Similar interest like that of the Czech Police is expected from special forces of the Czech Armed Forces, the Integrated Rescue System, and the Fire Rescue Service of the Czech Republic.

## Explosive Detection Kit

The DETEX detection kit includes six basic





agents for the detection of explosives. Individual agents, divided into six parts and their combinations, are used for the identification of unknown explosives. Successful demonstration of evidence requires correct application of a sample of the tested substance on a disc of smear paper, which is a part of DETEX kit. "If an unknown substance (solid, liquid) found, e.g., in some luggage, is available, it can be applied to the smear paper, then proceed according to the user's manual of the detection kit," Josef Tichý, Explosia a.s. General Manager, describes about this new item. The second alternative used, e.g., during airport checks, is smearing various materials (directly from persons or luggage, etc.) with paper. It is an indirect method of sampling.

Any place where the presence of explosive is expected is wiped with the paper disc. Apply 2 drops of the first agent from the dropper bottle. If a change of colour occurs, traces of explosive are present. If no change of colour occurs, add another agent from the other two bottles. For example, a pink colour indicates the presence of explosives including nitroesters or nitramines. Proceed the same way to detect other possible misuse of explosives.

Explosia strives to assist in the combat of terrorism with this product. The Company utilises its knowledge of the environment where, as a traditional manufacturer of explosives, it can very quickly identify explosives according to their composition. The detection system is based on the experience with older detection systems used by the Czech Police, Czech Armed Forces and other

foreign users. The detection systems currently used at airports have a disadvantage because they are often overloaded during use. The restoration of their function requires dozens of minutes. DETEX responds immediately.

#### Explosion against icy danger

We see these frequently apocalyptic images every year – fire fighters working on Czech ice-covered rivers, because ice floes on rivers or wedged beneath bridges pose a risk to our safety. Explosia offers rescue services several options to remove these ice obstacles.

The simplest way to free chunks of ice or even entire surfaces is to use explosives, e.g., Perunit. Just place a charge on the ice and initiate it. The issue of this solution is the high consumption of explosives and noise exposure to the surroundings. "Within minutes the water is clear", says Ladislav Říha, a researcher of Explosia a.s. Another solution is to install a charge beneath the ice. Because the explosive is sealed with water, it will transfer more energy, so much smaller amounts of explosive than in the previous option are required. The time consumption is the disadvantage. Since the precise amount of explosives is hard to estimate, this method of ice obstacle removal poses a risk of flying ice. This type of blasting usually utilises dynamite, which is relatively water proof for a certain period of time and more affordable.

The use of a charge placed on the ice, covered with a water bag, is an interesting option. Explosia, in collaboration with Scientific Re-

search Institute of Coal in Radvanice, have studied this issue in recent years. "The use of bags creates a situation similar to the explosive being submerged in water, making the transfer of the explosive energy more efficient. The advantage is that you can use an amount of explosive almost as small as if it was placed beneath the ice", says Říha. The water-filled bags also minimise the spray of ice fragments, limiting it to a few metres. The technology is currently being implemented in practise by fire fighters, who are very satisfied with the test results of the bags.

The fourth solution is the use of flexible long cumulative Semtex Razor charges, the performance of which is similar to those charges covered with water bags. Its installation is simple and the spray of ice is relatively small; however, the price is substantially higher. Success depends on correct placement of the charges, yet the result is precise, quick and safe.

#### No stone left unturned

One of the important fields of business of this Pardubice company is the production and sale of explosives for opencast mining. This is associated with comprehensive services offered by Explosia to mining companies. "We provide drilling works using our own drilling machines, we also have mixing and loading trucks that produce the explosive directly above the bore, which is then loaded by the operators", describes Josef Tichý, General Manager of Explosia. The explosives are loaded using mixing and loading trucks, saving approx. 30% of the cost of the drilling works. Another important advantage of this loading method is increased speed of blasting preparations, savings in transportation and storage of explosives, but most importantly increased safety and hygiene at work.

Explosia has dedicated the Fospol division for these purposes, which provides mining companies with the combination of drilling, blasting and loading of the mined material into primary crushers. In recent years the Company has annually provided the blasting and supply of almost 5 million tons of broken material at 18 locations in the Czech Republic.

With its origins beginning in 1920, Explosia a.s. is both a traditional and the most important Czech manufacturer of explosives. It is 100% owned by the Czech Government and is an individual business corporation with an important position in the commercial explosives market.

# Nanotechnology in the service of the armed forces

Our company ELF Logistic, s.r.o. specializes in nanotechnology-based technical products since 2012. Today we offer special lubricants, anti-corrosive and electro-insulating products, fabric and leather protectors, and environment-friendly cleaners. Our products are available through a wide network of stores under the brands Nanoprotech, Inproducts and GNP. Our users, besides regular consumers, include a range of customers from across different sectors of industry, agriculture and the armed forces.

Our solutions are not aggressive towards either treated or surrounding materials, provide long-lasting protection from the first application and significantly reduce maintenance and service costs. All our solutions contain nanoparticles that better penetrate into the structure of materials, fill even the smallest microcracks and create an invisible film lasting months or years which reduces friction, displaces impurities, and perfectly repels water and moisture.

## Nanoprotech Gun

- a unique cleaning, lubricating and preservative spray;
- cleans all firearm discharge residues (copper, lead, zinc, carbon, etc.);
- each application lasts for up to 1,000 shots, reduces the adherence of dirt, displaces water and reduces friction, keeping the gun lubricated and protected against corrosion;

- withstands long-term exposure to temperatures from  $-80^{\circ}\text{C}$  to  $+160^{\circ}\text{C}$ ;
  - the solution is wiped off after application, so the gun is always dry and ready to fire.
- Applications: short and long firearms, automatic firearms

## GNP Electronics

- a special dry electrical insulating spray;
  - cleans oxidation and displaces water from all equipment for at least one year;
  - suitable for printed connections, motherboards and fine electronics;
  - can bring water-affected equipment back to life and provides long-term protection.
- Applications: walkie-talkies, torches, lasers, night-vision devices, etc.

## Inproducts fabric protectors and waterproofing

- give garments lasting protection against water, dirt and UV radiation;
- are colourless, odourless and free of chemical additives;
- withstand repeated washing and do not affect the breathability and flexibility of materials;
- expedite the drying of materials should they become drenched under extreme conditions;
- a single application protects your clothes for months.

Applications: all garments and accessories made of textile, leather and synthetic materials, including membrane fabrics

## Nanoprotech AutoMoto Anticor

- a lubricating, anti-corrosion and release spray intended for the varying conditions inside cars
  - provides exceptional protection against salty and acidic solutions and is remarkably resistant to temperatures from  $-80^{\circ}\text{C}$  to  $+160^{\circ}\text{C}$ ;
  - one application lasts for at least a year, depending on the mechanical load
- Applications: stressed components of the chassis and exhaust, locks, and all other mechanical parts or surfaces afflicted by corrosion

## Nanoprotech AutoMoto Electric

- a cleaning and electro-insulating spray intended for the varying conditions inside cars;
  - provides exceptional protection against salty and acidic solutions and is remarkably resistant to temperatures from  $-80^{\circ}\text{C}$  to  $+160^{\circ}\text{C}$ ;
  - removes oxidation and displaces water from electrical contacts or devices;
  - one application lasts for at least a year.
- Applications: car battery contacts, alternators, headlights, traffic lights, etc.

More information about our technologies and products can be found at [www.nanoprotech.cz](http://www.nanoprotech.cz).







# K120 FULLY RUGGED TABLET

- 8th Generation Intel® Core™ i7 / i5 Processor.
- 12.5" FHD LumiBond® 2.0 Display with Getac Sunlight Readable Technology (1,200 nits) and Capacitive Touchscreen.
- Enhanced Enterprise Security with Optional Intel vPro, Windows Hello Face-authentication Camera, and Multi-factor Authentication Options.
- Multi-mode Usage Streamlined by Extensive Accessory Selections
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Battery charger



Full Setup



Keyboard Dock



Hard Handle



## Established in 1995

The Koutný spol. s r.o. Company is a successful family business with a Czech capital only. We focus on high-quality suits, jackets, trousers and tuxedos.

We also specialize in the manufacturing of professional clothing for state administration institutions.



### CLIENTS

- The Dutch Army
- The Austrian Army
- Army of the Czech Republic
- Ministry of Defence of the Czech Republic
- Police of the Czech Republic
- Prison services of the Czech Republic
- Custom Administration of the Czech Republic
- Fire Brigades throughout the Czech Republic
- Voluntary Fire Brigades
- Prague Airport
- Czech airlines
- Private Aviation Companies

### SPECIALIZATION

Koutny specializes in the manufacturing of professional clothing for government departments and other state administration institutions of various countries which require high quality of products supplied. Our uniforms include all types of gentlemen's and ladies' garments such as suits, jackets, trousers, skirts, waistcoats, sports jackets, overalls, special combat clothing, etc.

### QUALITY REQUIREMENTS

We prefer high quality materials, flexible deliveries and individual approach. We systematically develop our abilities to secure and respond quickly to individual requirements. Modern techniques include the latest garment manufacturing technologies.

### SIZES AND MATERIAL

We offer our products in a wide range of sizes. We have developed a special measurement system for suits, jackets and trousers, including a wide range of design and material variants. In addition, our clients have the possibility opportunity to place an individual order according to their specifications and requirements such as: cuts/design, color, patterns, materials, special sizes and tailor-made clothing.



### COMPLETE ASSORTMENT

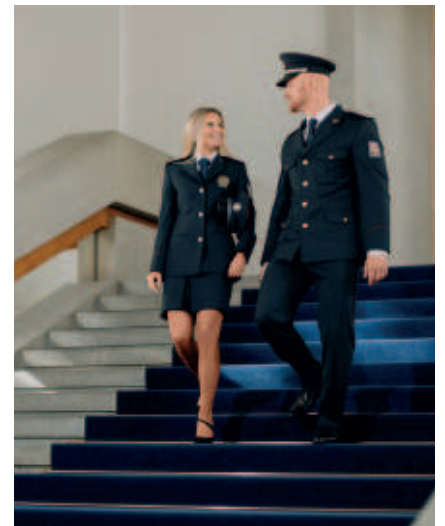
We offer our customers products that enable them to equip their employees with full range of professional clothing for any season or climate.

### MATERIALS

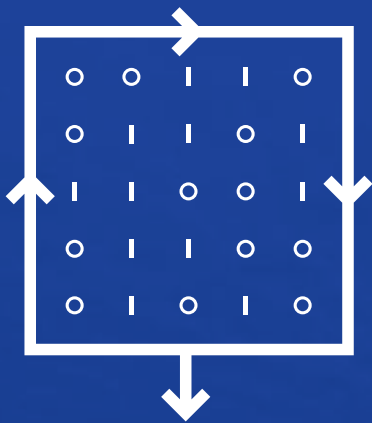
Since the quality of our products is our main priority, it is necessary to use top quality and durable materials. We use materials mainly from Italy, France and Spain.

These materials are known for their softness, pleasant touch and resistance to wrinkling.

100%-wool materials, 100% cotton or mixed with polyester, polyamide, flax or elastan are used. 100%-wool materials are most suitable for areas with subtropical and tropical climates.







# Information systems for military logistics

30

1989 – 2019

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We have 30 years of experience in the development and integration of information systems for logistics and NATO codification for armed forces and defence industry in tens of countries on 5 continents.

# EXCALIBUR ARMY



EXCALIBUR ARMY (EA), member of the CZECHOSLOVAK GROUP (CSG) holding, is a Czech manufacturer and seller of heavy military vehicles, spare parts, weapons, ammunition, and other military equipment. It focuses on the development and production of modern vehicles, service, refurbishment, and modernization, including major upgrades of primarily ground military equipment. The company, whose 2018 turnover was CZK 3.1 million, has customers all over the world and cooperates with renowned world producers of security technologies, such as General Dynamics European Land Systems (GDELS). At IDET 2019, there EXCALIBUR ARMY will present its wide range of ground equipment. For example, its bridge vehicle AM-70 EX on the Tatra Force 8x8 chassis will be presented in its exhibition premiere. The AM-70 EX is designed to support military units' mobility through the quick bridging of both land and water obstacles. The bridge load capacity corresponds to the MLC 70 class, i.e. about 70 tons. The AM-70 EX features its 13.5-meter-long folding bridge component to bridge 10 to 12.5-meter-wide obstacles. The particular bridge components can be merged together and by struts form long bridge with required length. Another premiere exhibit will be the new Patriot II 4x4 APC vehicle version. It is a modular concept vehicle belongs

to the 13 to 17,5 tonweight category. At the fair, the Patriot II will be presented with its new SLAT-type armour, the Hensoldt observation system and ARX-20 remote weapon turret. The robust vehicle design is based on the durable Tatra 4x4 chassis. Thanks to its versatility and modularity, the Patriot II is suitable for armed and security forces, and civilian users as well.

At IDET 2019, EXCALIBUR ARMY will also exhibit modernized DANA M2 wheeled howitzer, featuring improvements that push its proven weapon system to the level of modern artillery systems. These include, for example, higher vehicle durability, improved dynamic performance due to its improved engine and transmissions or quicker deployment through the firing process automation and digitization. The fire accuracy and efficiency result from a new ballistic computer and electronic fire control system, and newly developed ammunition increases the firing range.

The 8x8 chassis of Tatra Force series is also used for the brand new TREVA recovery and towing vehicle. The 34-t vehicle based on the proven AV-15 vehicle is capable of towing immobile vehicles with weights of up to 40 tons. The TREVA has 15-t crane and reel with its two pulleys and tensile force of up to 44 t. The vehicle is fitted with a four-door exten-

ded cabin, which also accommodates the towed machine crew.

EXCALIBUR ARMY, in collaboration with its traditional partner, GDELS, and other CSG holding companies, will also exhibit at IDET the new IRB pontoon bridge set with the Tatra Force 8x8 chassis along with the Birdon BEB boat. The M3 amphibious pontoon vehicle will be displayed as well.

The IRB set mounted on the Tatra Force platform with universal hook loader through BAP adapter supports tracked vehicles in the MLC 80 weight category and wheeled vehicles in MLC 96 category. In addition to the pontoon components, the whole set includes the Birdon BEB boat, FCR3 road builder, and standard ISO containers with accessories. The pontoon components can be merged together and create a floating bridge or ferry boat.

The M3 is a unique amphibious vehicle capable of transporting all the types of NATO main battle tanks and other equipment by water, combining the self-propelled pontoon bridge component and boat, that is self-propelled on the ground as well. Thanks to an adapter, the M3 is compatible with the IRB, FSB, and SRB pontoon bridge systems, while the great pontoon bridge assembly speed and flexibility represent its great benefit.





# TATRA DEFENCE VEHICLE

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# EA

## EXCALIBUR ARMY

### OSVĚDČENÝ KONCEPT S AUTOMATICKÝM NAVÁDĚNÍM ZBRANĚ



## DANA M2

 **LEVEL 1**  
STANAG 4569

 **A.S.A.P.**  
SYSTEM

**90** KM/H  


 **NEW**  
PRODUCT

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

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**EXCALIBUR  
ARMY**



**HIGH LOAD CAPACITY**

MLC 70 load-carrying capacity according to STANAG 2021 ensures support to heavy or extremely heavy combat vehicles.

**FLEXIBILITY – INTERCONNECTABLE BRIDGE SECTIONS**

Gradual connection of bridge sections can span a gap up to 106 m wide.

**BRIDGE SECTIONS COMPATIBILITY**

The new M-70 EX is compatible with former M-50 and M-70 EX generations.

**MODERN HEAVY DUTY TATRA T 815-7 CHASSIS**

Ultimate terrain crossing and easy maintenance.

**OPTIONAL CABIN BALLISTIC PROTECTION**

The cab can be optionally protected with an armour up to STANAG 4569 LEVEL II.

**AM-70 EX**

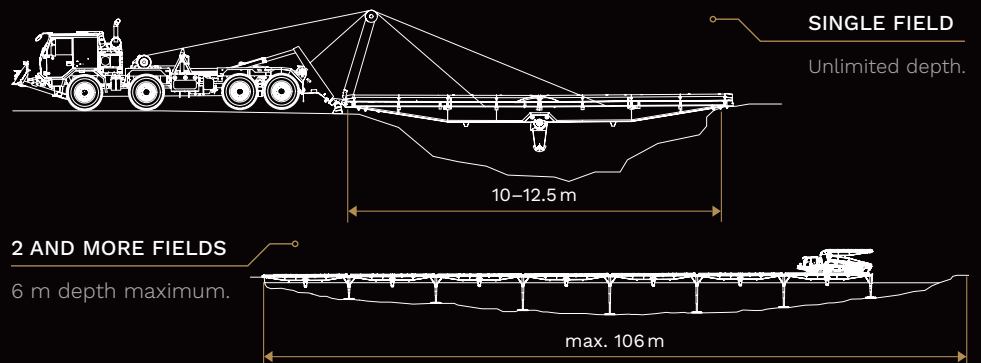
**BRIDGE LAYER**

THE NEW BRIDGE LAYING VEHICLE FEATURING MLC 70 HIGH LOAD CAPACITY BASED ON THE WELL-PROVEN TATRA CHASSIS.

★ **NEW PRODUCT** | **3 CREW** | **90 KM/H** | **TATRA** | **EA**

The AM-70 EX Bridge Laying Vehicle is a new mobile vehicle-launched bridge designed to provide the necessary maneuverability to military units by fast deployment over dry or water gaps, featuring above all the MLC 70 class high load-carrying capacity. Thanks to the ability to interconnect individual bridge sections, the AM-70 EX offers an insuperable flexibility and a maximum width of spanned gap.

The AM-70 EX is a successor to the well-known successful AM-50 EX and conceptually also to the formerly produced and proven AM-50 and AM-50 B vehicles still in use with many armed forces worldwide. The new scissor type 4-girder light construction of the M-70 EX bridge is also fully compatible with older bridge generations. Equipped with a full bridge deck and curbs the AM-70 EX bridge may also be applied in civil rescue operations or building industry and forestry.







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- [ land command and control information systems - LAND C2IS ]
- [ air command and control information systems - AIR C2IS ]
- [ integration of LAND C2IS and AIR C2IS ]
- [ air traffic management systems ]
- [ integration of military and civil air traffic management systems ]
- [ sensor data integration and processing ]
- [ certified cryptographic devices for the protection of classified information ]
- [ certified secure communication in both local and global computer networks ]
- [ certified information systems for the processing of (not only) classified information ]
- [ solutions for collaboration ]
- [ participation in LLAPI and MIP alliance programs, application of the FMN initiative ]

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# VOP CZ PROJECTS

VOP CZ is a state owned company issued by Czech MOD and oriented to defence and security area. The company is focused on development, manufacture, service, modernization and entire lifecycle support of military ground equipment, especially for the Czech Army.



## Preparation of the project for acquisition of IFV for the Czech Armed Forces.

Several interesting events have taken place during the first quarter of this year in relation to the project for acquisition of new infantry fighting vehicles. At the beginning of January the Minister of Defence entrusted management of all armament to a new person - Filip Říha, who will be responsible for the smooth progress of selection of a supplier of new tracked armoured fighting vehicles, with whom a contract is to be signed in September this year.

A month later, specifically on 30 January, VOP CZ and the Ministry of Defence of the Czech Republic signed a partnership memorandum in relation to the project for acquisition of new infantry fighting vehicles.

This was an event that emphasised the enterprise's key role in this project. The memorandum clearly defines the enterprise's role, which it is to perform from the strategic aspect in relation to deliveries and servicing of new tracked infantry fighting vehicles. At the beginning of March the Minister of Defence of the Czech Republic visited VOP CZ, toured the enterprise's manufacturing areas and met with employees. Director of VOP CZ Marek Špok assured the Minister that the enterprise is prepared to manage the project for replacement of IFV from the aspect of staffing and manufacturing.

What's next? The tender is currently being launched, it was registered with the Ministry of Finance on 5 February and four

potential bidders received the detailed documentation containing the Czech Armed Forces' requirements at the end of March. This documentation and the answers to potential queries by the manufacturers will be translated during the oncoming months. We would like to repeat that companies interested in the contract are the German PSM Company, which is a consortium of Rheinmetall and KMW, with the Puma vehicle, Rheinmetall itself with the Lynx vehicle, the British-Swedish BAE with the CV90 vehicle and the European branch of the American General Dynamics Group with the Ascod vehicle.

## UGV TAROS

The Department of Research and Development at VOP CZ started work on designing



and manufacturing two undercarriage platforms for the UGV-Pz unmanned ground vehicle and one platform for the SOM6 last year and employees applied knowledge from development of the TAROS tactical robotic system in both projects. The contract is being executed for Vojenský technický ústav, s.p., which is a dislocated plant of VTÚVM Slavičín, which manufactures special-purpose superstructures for both these undercarriages. All the functional parameters will be verified during company, inspection, approval and military testing, which is planned for next year. The functional parameters of the undercarriage platforms including the superstructures will be verified during these tests. Final handing over for use by the Czech Armed Forces is planned to take place at the end of 2020.



**Collaboration with ARQUUS**

VOP CZ collaborates with the ARQUUS Company (formerly RENAULT Trucks Defense - RTD) on the basis of a servicing contract, which is based on the Global Framework Contract signed in April 2018. A key framework for this partnership is servicing, including assurance of the life-cycle,

of ARQUUS vehicles, and also research and development collaboration on various projects or on manufacture or assembly of individual components for vehicles of marques falling under ARQUUS. The concluded servicing contract defines the terms for collaboration in two key areas - sales and distribution of ARQUUS original spare

parts and accessories by means of VOP CZ, and provision of services, i.e. servicing, repairs, maintenance and training in regard to products that ARQUUS sells to end customers.

The ARQUUS Company offers a wide range of armoured vehicles, which are intended for armed forces and law-enforcement agencies. These vehicles are used by the French Armed Forces and also several other NATO armed forces. The individual series of ARQUUS vehicles have a high proportion of mutual use of the same components, which is a great advantage from the aspect of subsequent assurance of spare parts, logistics and management of the life-cycle of the machines. ARQUUS, the agent for the entire Czech Republic and VOP CZ have jointly realised three presentations of the Sherpa Light Higuard and Trapper vehicles so far. These vehicles can also be seen at exhibitions in a joint display by VOP CZ and ARQUUS, last year at FUTURE FORCES and this year at IDET 2019. These vehicles are a suitable alternative to modernisation of the Czech Armed Forces' ground technology.



# AGADOS

## is coming up with a special amphibious off-road trailer

An amphibious off-road trailer has been added to AGADOS's portfolio of special projects. It will be presented at the IDET International Trade Fair of Defense and Security Technologies in Brno, which is taking place from 29th to 31st May 2019. It was at this fair two years ago where the PK 4 KAGA mobile field kitchen from our company was awarded the Golden IDET 2017.

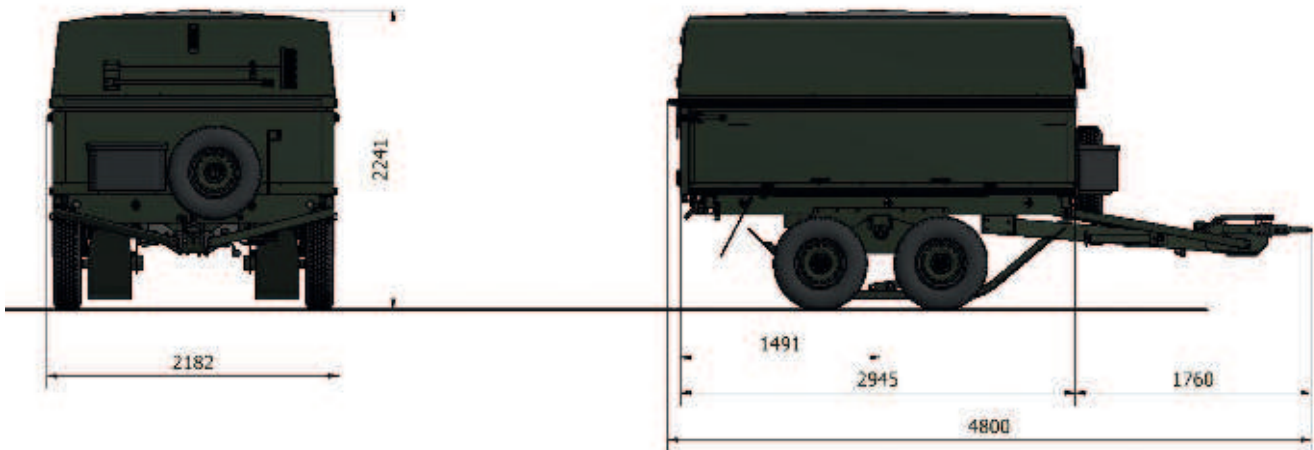
The amphibious trailer is primarily designed for wheeled and tracked vehicles for all types of terrain. The patented system of independent suspension in each wheel is an indisputable advantage. While using unique skis, the trailer can be easily operated in difficult terrain such as snow, mud and rocky terrain. The advantage of this newcomer is also the ability of overcoming sources of water, when the trailer

is able to float behind a towing vehicle. The useable load area, whose payload capacity is up to 1500 kg, is made up of interchangeable modules for various uses not only in extreme conditions. It is a two-axle suspension trailer with four fifteen-inch wheels with a total weight of 3500 kg. The trailer is equipped with a height-adjustable drawbar that enables towing by vehicles of different types.

The new trailer, which are already being used by foreign armed forces, can serve as a waterproof box, tank, open plateau, 8-10-foot container carrier and tilting superstructure flatbed with tarpaulin. It is also ideal, for example, to transport a generator. The modules are attached to the bottom frame at four anchoring points and secured with pins. The trailer has two salvage eyes at the rear.







**Advantages**

- Possibility of transporting all kinds of military material
- Variable anchoring of transported military material
- Possibility of using the trailer in all types of terrain, even overcoming sources of water
- Possibility of blocking overrun brake for off-road transport
- Patented system of independent suspension in each wheel
- System of superstructure modules

**Technical parameters**

- Dimensions (L×W×H) 4800 x 2182 x 2240 mm
- Total weight 3500 kg
- Payload: 1500 kg
- Braked, two-axle trailer (4 half axles)
- 15-inch wheels including spare wheels



Other special products introduced by AGADOS in the past include, besides the new amphibious trailer, were the PK 4 KAGA mobile field kitchen, the larger PK 6 field kitchen, the NAVA 2000 mobile tank, the UVA 500 water treatment plant or the freezer box for preserving fresh food even in extreme conditions. Furthermore, the company offers chassis for gensets and a 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 - half of the production is exported. Over just a year, more than 20,000 trailers were produced. AGADOS's production grows year by year due to growing interest in its products and at the same time the company expands its rich portfolio.

# REDO

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

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

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

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

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

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

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

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

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

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







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

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

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

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

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

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

dental procedures.

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

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

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

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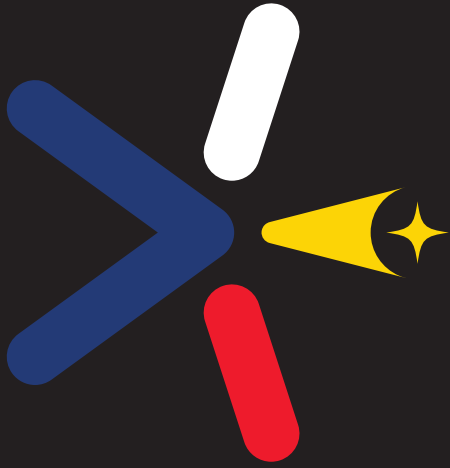
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