

# Czech Defence Industry & Security REVIEW®

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



2018  
**EUROSATORY**

11 - 15 JUNE 2018 / PARIS



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# EDITORIAL

## Dear readers,

In this issue, several leading defence companies will present to you not only their portfolios, but also innovations which they will show at their stands during the EUROSATORY 2018 international fair taking place between June 11 and 15 in Paris.

The Czech participation at the event will be one of the largest presences at international fairs ever. Czech stands, including a 225 m<sup>2</sup> national stand, will occupy almost 700 square meters, which fact speaks for itself.

The previous issue was published on the occasion of the DSA fair in Kuala Lumpur, IDEB in Bratislava, and KADEX in Astana. You will find an article on the participation of Czech companies inside the magazine. In Kuala Lumpur

too the Czech Republic has the most significant presence in the last six years.

Allow me to wish you many successes in your work and a pleasant stay in Paris during the EUROSATORY fair, and also to invite you to MS LINE's stand (No. B 713, Hall 6).

Šárka Cook  
Editor-in-chief



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# Message by H.E. Petr Drulák

## Ambassador of the Czech Republic in France and Monaco



**It is my pleasure to make a few opening remarks on the occasion of the Czech Republic's presentation at the Eurosatory international exhibition dedicated to the Land and Airland Defence and Security. Eurosatory is one of the most significant defence trade fairs in the World and Czech companies have traditionally been eager to present themselves at this event.**

Total world military expenditure rose to \$1739 billion in 2017. Growing military spending in Europe is a reaction to new threats to global security and uncertainty in international affairs. France is no exception to the rule and responds to

these trends by modernization programs of the French army that create new demand for local and foreign suppliers of military equipment and armament.

Apart from the procurement of the government, French defence sector has also profited from developments in the global defence spending internationally. French arms and defence industry have been recently very successful in selling military material abroad. Consequently, France has become the world's third largest arms exporter last year.

Both trends – increased spending of the French military and strength of the local defence sector – make the country one of the most perspective markets in the upcoming years for Czech arms exports and for industrial

cooperation between Czech and French companies.

The latter is of a particular interest to The Czech Republic. I believe that the recent example of industrial partnership – development of an infantry mobility vehicle Titus manufactured by Nexter Systems in cooperation with Tatra Trucks and the success of self-propelled howitzer CAESAR on Tatra's chassis – is only the beginning of a long-lasting and more complex ties between Czech and French manufacturers.

The above-mentioned potential for cooperation is well reflected by the increasing number of Czech exhibitors at

Eurosatory. This is the main reason why at this year's edition the Czech Republic is represented at its largest official exhibition stand ever with products of 20 companies on display. Another 18 Czech companies promote themselves on individual stands.

Czech industry will offer visitors at Eurosatory 2018 a wide and complex range of products: starting with ammunition from the renowned manufacturer Sellier & Bellot and light arms from traditional producer of military weapons Česká Zbrojovka to monitoring and surveillance systems from EVPÚ Defence, ERA, Retia and Lemax. Czech military vehicles will be presented by Tatra Trucks and SVOS. PBS Velká Bíteš, Infla-tech and Mesit will display their equipment for air defence and aircraft industries. In some specific sectors, such as textiles for military use and protection from chemical warfare, companies Avec Chem, Oritest, Redo and cluster Clutex will represent Czech industry. Last, but not least, Czech heavy machinery specialists, TS Plzeň and Žďas, will exhibit at Eurosatory.

Czech defence industry has never been in such a good shape as today. In recent years, we have seen consolidation, investments and development of new technologies by our leading companies of the sector. I hope, therefore, that Eurosatory 2018 will contribute to the expansion of Czech defence industry abroad and that it will give Czech companies plenty of opportunities to forge new business ties with both French and international customers.

# Opening Speech by Mr. Jiří Hynek

## President of Defence and Security Industry Association of the CR



### Dear exhibitors, dear visitors,

The defence industry of the Czech Republic has always ranked among the best ones in Europe. Its long-standing tradition, excellent experts and their invention and creativity are the properties the Czech defence and security industry can be proud of. Unfortunately, the Czech market is too small for the local defence industry, which is why we cannot do without exports. The exclusive exhibition EUROSATORY 2018 can make

a significant contribution in this respect. It provides a comprehensive idea of the Czech industry's capabilities and its broad portfolio of products and services. Thanks to the high technological standard of the products presented at the exhibition, the Czech defence and security industry can contribute to the elimination of globally growing security risks. Many companies presenting their products and services during this exhibition are members of the Defence and Security Indu-

stry Association of the Czech Republic (DSIA). Since its origin, the Association has earned a deserved place in the defence and security system of the Czech Republic. It has become an important communication hub and platform of cooperation between the industry and the state authorities of the Czech Republic or security structures of other countries. It is an important partner of the Ministry of Defence of the Czech Republic, as well as of other ministries and agencies responsible for national security and defence. Last but not least, it cooperates with the Parliament of the Czech Republic, in particular with the Foreign, Defence and Security Committee of the Senate and the Defence Committee of the Chamber of Deputies.

The Association maintains numerous international contacts with its partner associations or similar organizations in the European Union, NATO member countries and other parts of the world. Representatives of the Association speak in support of the interests of our country in the NATO Industrial Advisory Group (NIAG) and are also present in the structures of the Aerospace and Defence Industries Association of Europe (ASD).

These relations are a springboard for efforts of the Czech defence and security industry to be involved in specific international projects. The quality of products and services of the Czech defence and security industry can be seen not only in the domestic market, but in different parts of the whole world to which the products and services are exported to satisfaction of their users. The satisfaction is always the best reference. I wish to all visitors and exhibitors to enjoy the exhibition and Czech defence and security products and services.



# Invitation to EUROSATORY 2018



2018  
**EUROSATORY**

11 - 15 JUNE 2018 / PARIS

## CZECH PARTICIPATION

4M SYSTEMS  
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AVEC CHEM  
CLUTEX  
COMPO TECH PLUS  
CZECHOSLOVAK GROUP  
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EVPÚ DEFENCE  
EXCALIBUR ARMY  
FK BRNO ENGINEERING  
FUTURE FORCES FORUM  
HQH SYSTEMS  
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LEMAX  
MEOPTA SYSTEMS  
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MESIT DEFENCE  
MILITARY SYSTEM LINE  
OMNIPOL  
ORITEST  
PBS  
PROAMMO CENTRAL EUROPE  
PROTOTYP A - ZM  
RAY SERVICE  
REDO  
RETIA  
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VOJENSKÝ TECHNICKÝ ÚSTAV  
ŽDAS  
ZELENÝ SPORT DEFENCE



# Cooperation between Czech and French Industries

France has been always an important military power with powerful industrial capacities in arms production. Though it may have seemed that France's military potential and arms exports have been languishing in the last decade, the last few years leave no doubt that France is back as a major player on international market. With a new French strategy of modernisation of its Army, there is still more to come. Major changes take place in the sphere of homeland security, too. Threats against civilian targets and new challenges in anti-terrorist combat require increased spending and modernisation of equipment of French law enforcement agencies. Both trends can be of an opportunity for Czech exporters in security and defence industry.



Challenges for French military industry France, just like other countries, has to adapt to the changing environment of security threats. New conflicts changed the view on the required military capabilities of the French army and brought new impetus to the development of France's military industry. Rising demand on world markets contributed to this trend with a similar vigour.

France's military materiel exports have jumped by 14 % from 2011 to 2015. In 2016, France managed to sell arms and equipment for more than 20 billion euros making the country the fourth biggest arms exporter worldwide. This is due mostly to the first successful export of Dassault Rafale multirole fighter jets. 2016 was fruitful for French naval industry, too, as DCNS - Thales won a contract on modernisation of Australian submarine fleet.

lities of autonomous action, increase military spending and promote international cooperation including industrial partnership with other European countries. New investments will focus on enhancing combat readiness, command and control and combat support. Special attention is paid to research & development and new technologies in warfare.

Reinforcement of homeland security Deteriorating security environment in Europe triggers demand for rapid and efficient modernisation of law enforcement agencies. Increase in funding of National police and French Gendarmerie and acquisition of new equipment is nowadays a key priority of the French Government. The range of articles varies from nonlethal weapons, communication equipment, and clothing to firearms, ammu-

Given objective needs, the French Army is quickening the pace of modernisation of its armed forces. In October 2017, the French Government has published its new Strategic Review of Defence and National Security that stresses the need to maintain France's capabi-

lities and special equipment for counter-terrorist operations.

What opportunities for Czech businesses? Increasing modernisation efforts of the French Armed Forces and law enforcement agencies, as well as thriving French weapons industry offer new opportunities for Czech defence sector. Our companies may definitely profit from their credit gained by an already existing cooperation between Czech and French industries.

In the military sphere, mutual projects include Nexter Titus, an infantry mobility vehicle manufactured by French Nexter Systems in cooperation with traditional Czech manufacturer of heavy-duty vehicles Tatra that provides Titus with its unique chassis. Tatra supplies 8x8 chassis for another Nexter Systems' product, the self-propelled howitzer CAESAR, as well.

Czech companies have equally proved to be reliable partners to French law enforcement agencies. Apart from its military use, French Special Forces are currently testing the above mentioned Nexter Titus. Czech light arms manufacturer Česká Zbrojovka supplied Police Tactical Unit of the French National Gendarmerie GIGN with its latest model of assault rifles BREN 2. Last, but not the least, special ammunition for French Special Police Forces is provided by another renowned Czech manufacturer, Sellier & Bellot.

*Tibor Opěla,  
Head of business-economic section,  
Embassy of the Czech Republic in Paris*



REDO is a leading manufacturer of high quality products, particularly of Modular Load Carrying Systems designed for Armed Forces and Law Enforcement. REDO develops and manufactures equipment and gear for the army, the police, the fire service, and security agencies. We use the latest/most modern materials and production techniques. Our product range includes rucksacks, ballistic vests and bulletproof helmets, bags, vests, combat wear for special army units and SWAT units, mobile field beds, amongst other things. REDO is also a distributor of Active Carbon Bandages that is a sterile Bandage with activated carbon in micro-filament form for increased suction capacity.

**CONTACT PERSON** – František Máčalík, Director of Sales

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Hall 5A  
Stand J510  
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ERA (a member of OMNIPOL group) is a leading company in multilateration, multistatic surveillance, and reconnaissance technology. We implement systems for military and civil purposes, deployed in 62 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 Air Defence and Electronic Warfare.

**CONTACT PERSON** – Milan Starý, Director of HR and Communication

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Vojenský technický ústav, s.p. (VTÚ – The Military Technical Institute) is a state-owned enterprise established by the Ministry of Defence of the Czech Republic.

The institute offers services in the area of defence research, development and innovations, production of functional patterns and prototypes, single-piece and small-lot production and accredited testing.

VTÚ provides solutions suitable for army, integrated rescue system (police, fire rescue system, emergency medical service etc.), customs administration, prison service and many other customers.

**CONTACT PERSON** – Jiří Protiva - Director

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**Vojenský technický ústav, s.p**

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E-MAIL: info@vtusp.cz

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



EVPU Defence was founded in 2001, the Company is a member of the Defence and security Industry Association of Czech Republic and is certified with ISO 9001 and AQAP 2110 certificates. The main activities of the company can be divided in own development, design, production and service of following products:

- special electro-optical surveillance systems
- special electro-optical surveillance vehicles equipped with TV, infrared and optical sensors and laser rangefinders
- two-axis Pan/Tilt positioners
- multi-sensor containers
- special electro-optical equipment for armed vehicles, tanks, turrets and weapon stations
- special SW applications designed for control of various electro-optical surveillance systems

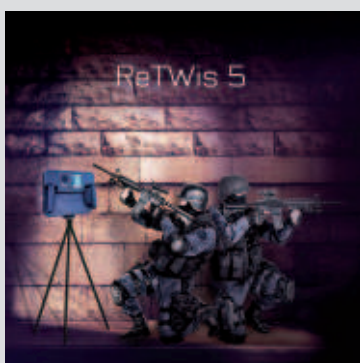
**CONTACT PERSON** – Mgr. Natálie Jakšíková

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RETIA, a.s., is one of the leading Czech manufacturers of special electronic systems for the defence and security sectors. The company focuses on radar technology, command and control systems, and digital recording systems.

ReTWis 5 (Through-Wall Imaging System) is a unique radar detecting living entities behind solid barriers. Compact dimensions, low weight and long operation period make the device suitable for multi-purpose usage for special police and military units.

**CONTACT PERSON** – Jan Volšík, MBA – CEO

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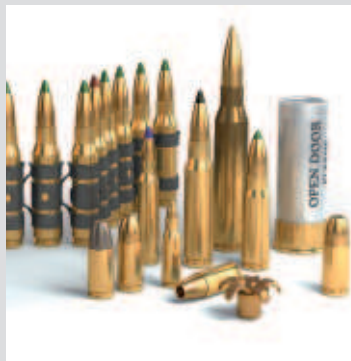
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The company Sellier & Bellot belongs among the oldest companies in the shooting and defence industry. Advanced technology throughout all operations guarantees quality of product portfolio, which includes production of ammunition for pistols and revolvers, rifles, shotguns and rimfires for hunting and sporting purposes. Integral parts of the assortment are products for Law Enforcement and military applications. Quality management establishes ISO 9001, ISO 14001 and military standards accompanied by variety of specific certifications. Focus on research and development brings number of innovations like NONTOX primer mixture, lead-free projectiles or infrared tracer bullets.

**CONTACT PERSON** – Milan Nedvěd – Sales Director

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MESIT is part of the aviation and defense industry for more than 65 years. The company is a well-established supplier to the Czech Armed Forces as well as to dozens of armies worldwide.

Tactical communications – comprehensive and interconnected systems of wireless tactical communication for the support of command and control of military operations.

Vehicle communication systems – intercoms, active noise reduction (ANR) headsets, PA systems and radio audio monitors.

Modernization of airplanes, helicopters and airport equipment – MESIT specializes in upgrading navigation and landing systems, in providing comprehensive logistics support for airplanes, including deliveries of spare parts, overhauls and also training programs.

**CONTACT PERSON:**  
Vladimír Michalík, Business Development

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STV GROUP a.s. is one of the leaders in the Czech defense industry. Being Czech Republic's largest ammunition manufacturer, our product range is wide. From firearms, anti-tank, aircraft and anti-aircraft to large caliber ammunition, and mortar bombs. From firearms ammunition to anti-tank, aircraft and anti-aircraft, mines to large caliber artillery rounds. Recently we have developed TB-7V thermobaric round for RPG-7 grenade launcher or TB-10 thermobaric hand grenade. Moreover, this year we launched the production of 9 mm Luger cartridges on our new, cutting edge production line near the town of Polička. In addition, the company manufactures AK-type assault rifles, RPG-7 and SPG-9 anti-tank weapons, plastic explosives, and demolition charges.

**CONTACT PERSON** – Jan Děcký, Statutory Director

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AADS is an international distributor of the Jeep, and is authorised to convert, accessorise, armor and market Jeep to military customers around the globe. AADS has contracts with the US Department of Defense, and has distributed Jeep Defence vehicles to more than twenty countries worldwide.

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# Quittner & Schimek

## To be a Recognized Supplier in the European Market, this is our Long-term Task

Two years ago we presented an interview with Mr. Jiří Šimek, Managing Director of the company Quittner & Schimek. One of the topics was relocation to the new site and joining of all activities and departments under one roof.

### How has your company been doing since our last interview two years ago?

We are doing fine, we have enough to do, and we have even had to refuse a few attractive contracts related to ground equipment, because our capacities were fully used up. During the period you referred to, we have been focusing on consolidation of in-house processes since the movement of the entire company to a brand new site in Stará Paka, i.e. into a single large hall instead of previous five smaller ones in Nová Paka. The new site has helped us make a number of processes more effective, which means we can start looking around for new projects now.

### What is the greatest strength of your company?

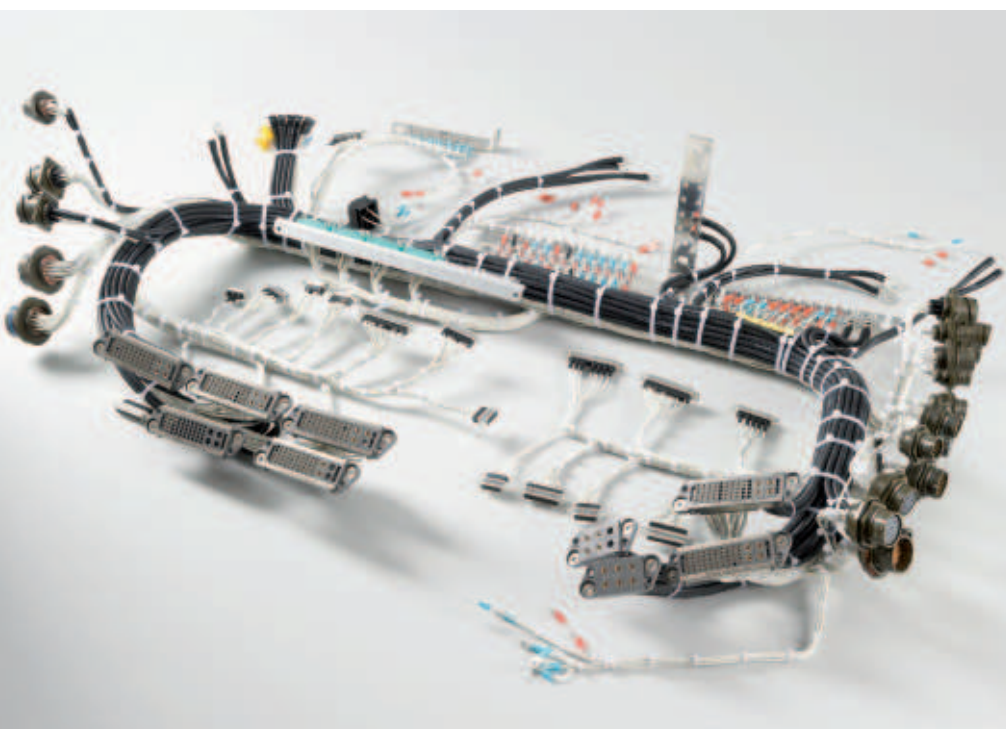
We are one of just a few European companies in our industry which makes use of a combination distribution of components and manufacture of value-added assemblies. With most of our competitors, it is one of the above activities that prevails; the other is usually an additional supplement. With us, the two activities are balanced. We are the official distributor of the world's leading manufacturers, such as Amphenol, TE Connectivity, Glenair, Leach, Nexans, DMC, and others. Our long-term cooperation with them brings us their broad technical and commercial support which we pass on to our custo-

mers throughout the lifecycle of our products, from the development and manufacture to post-sale maintenance and servicing.

The assembly of MIL connectors, which we managed to bring to our plant in Nová Paka some 15 years ago as the first company in the former Eastern Bloc, is very important for our market position. As a matter of fact, connectors designed according to US MIL standards are the fundamental component of all demanding electrical installations, and it is thus essential to have a flexible and cost-effective source of them. The assembled connectors are subsequently used in a very broad range of different applications, including civil aviation, which is why their manufacture and uses are strictly monitored and audited by representatives of US government agencies. The assembly is a process during which a connector is put together from its basic components. At the moment, we are able to assemble overnight some 50,000 different connectors divided into ten modern product lines and containing components from the United States, United Kingdom, and India. We buy components from the world's leading manufacturer of these connectors, Amphenol, and we are now their second or third largest European partner for the segment of aviation and defence products!

### Do you have any other special activity which distinguishes you from other companies?

We have lately been fairly successful in one specific area, namely fiber optics. As a







matter of fact, optical connections appear with an increasing frequency in both aviation and defence products. They are increasingly used at inflight the entertainment area, in systems distributing image and other data signals to every seat onboard large airliners. Military systems, on the other hand, require transfers of increasing volumes of data in the field, and fiber optics can manage them very well.

In this respect, we make use of the partnership with our sister company SQS Fiber Optics, which has been in this business for about twenty years, has more than 200 employees, and thus possesses huge experience in every area of fiber optics. For example, SQS has been the principal supplier of connectors for the former Czech Telecom and its successors since the very beginning of the development of the telecommunications infrastructure in the Czech Republic. We have suppliers which can deliver all modern optical connectors designed for special equipment and we together with SQS can provide highly professional installation and assembly services, including various hybrid versions including metallic connections etc.

#### **How have you been doing in electrical assemblies?**

Since about two years ago, our leading customer has been the Czech subsidiary of Zodiac Aerospace, which manufactures galleys for the entire family of A320 Air-

bus single-aisle airliners. We have been involved in the project for quite some time as the principal supplier of electrical panels and connecting cables. The essential components of the panels are precisely dimensioned metal sheets and machined parts for which we have managed to find suitable subcontractors. We also make use of our experience with mechanical components on projects involving ground vehicles, in respect whereof we offer increasingly complex assemblies of various panels and boxes. Our intensive cooperation with the two largest manu-

facturers of ground vehicles in Germany, the Rheinmetall group and Krauss Maffei Wegmann (KMW), continues. Its beginnings are associated with the PUMA modern infantry fighting vehicle for which we supply most cable assemblies of its electrical systems, but we deliver for other projects as well.

#### **How do you see further development of your company?**

We have enough space for further development on our new site, but the main limiting factor, both in the Czech Republic and neighbouring countries, is lack of labour. With our industry being as specific as it is, it is difficult to find and recruit people with required skills and experience. This is why we focus mainly on graduates of schools. We cooperate with schools both near and farther away from us, we try to give students a chance of practicing their skills and other forms of support to win them for cooperation with us even when they still attend school; we will see how we will deal with this difficult situation. We have been in this line of business for 28 years now and, fortunately, we still find something new in it all the time, which is important for us. We learn something from every new project or customer, and this is what gives us energy for further efforts.

*Thank you for the interview, Miloš Soukup*



# Interview with the CEO of Explosia

## The Producer of Semtex, the World's Most Famous Plastic Explosive

Explosia a.s., a Czech company, has recorded a historic achievement. For the first time in recent history, i.e. since 2002, the company has recorded CZK 1 billion (EUR 40 million) in gross sales. It is the producer of Semtex, the world's most famous plastic explosive, yet its portfolio includes a number of other products that can be used in the fight against terrorism or to save and protect lives. This is an interview with Dipl. Eng. Josef Tichý, CSc, the company's CEO, about the current state of the organisation and especially about the future plans of the Czech Republic's leading manufacturer of explosives.



You are right; the first decade of the millennium was harsh on us. There was a major decline in the demand for powders and, due to the downturn in the construction and mining industries, for traditional explosives as well. We had to identify a way out of that situation. As the saying goes, faint heart never won fair lady, so we took advantage of the market shift and began to gain ground in the offer of propellants for modular charges and in the niche for spherical powders. That is why we concentrated on answering those two challenges. Something that helped us greatly at the time was the increase of our capital by CZK 250 million by the owner. At the time, the owner was the Ministry of Finance, later we transferred under the Ministry of Industry and Trade of the Czech Republic. The situation permitted us to carry out principal investments, which assisted us in improving our performance rapidly and responding to the market situation in a flexible manner. In the past four years, we managed to increase our headcount from 500 to 700 staff; the

past six years have seen growth in our gross sales as well as in profit. While our production focuses primarily on the manufacturing of smokeless powders, we are also aiming to develop in promising segments in the production of explosives. Common wisdom says that in the long run, we are better off standing on two legs, not just one.

### **You mentioned investment. What major investments has your company seen in the past two years?**

We decided to use the increase of capital for the stabilisation of production of spherical powders as well as the modernization of our lines for single-base powders. However, the most prominent investment was the construction of our research and development centre for bimodular propellant charges (BMCS). It is a market segment where we were active in the 1980's, but the effects of disarmament processes led us to only keep up with the global leading manufacturers. The new trends in the market have seen the segment coming back into full swing. The line allows us to research and identify the maximum degree of automation in the production of BMCS. Our mission is to be a strong force to be reckoned with in Europe as well as globally.

**Explosia is a name with worldwide recognition. It is common knowledge that it has been through several lean years. However, what shape is the company in nowadays and what contributed to that state?**

The situation permitted us to carry out principal investments, which assisted us in improving our performance rapidly and responding to the market situation in a flexible manner. In the past four years, we managed to increase our headcount from 500 to 700 staff; the

**What role does Explosia a.s. play in the**





#### production of BMCS?

As I said earlier, Explosia has modernised its operations and is becoming one of the world's top five players in the segment; quite an achievement, I dare say. It is due to the security situation in the world, but especially to the experts who have found employment with us and dedicate a large portion of their lives to the company. I can see that it does pay to have people do what they enjoy. In the future, we want to extend opportunities to our current, experienced staff members as well as to present motivating jobs to any new employees who really want to work for us.

#### Are the BMCS your final destination in the future? What are your aims and goals?

It is no secret today that we are a major supplier of modular charges for Poland's Land Forces; other countries are showing interest in cooperation as well. One of our goals is to become a partner for the Czech Armed Forces. It is rather a matter of prestige than of large sums of money. Being a strategic company of the country, we should certainly participate in procurement for the Army. We are not talking just about modular charges but also about other products related to large-calibre ammunition and to the needs of Special Forces. It goes without saying that small-calibre ammunition for the Czech Army should contain our smokeless powder.

#### What is it exactly that your company has to offer to its business partners?

We are a traditional company owned by the government, which is definitely a guarantee of certainty and decent behaviour. We are

known for the quality of our products as our emphasis is not on quantity, but quality. One more reason why we are the right business partner is the wide expert base in our ranks. An important feature is that we managed to keep our own research facilities with tradition spanning more than sixty years even in the difficult years. We also collaborate with the Technical University in Pardubice, which brings us new graduates for the development of our field. A fair place in the communication with our partners is held by the customer-oriented approach. Allow me to illustrate it: when, during floods, Czech firefighters needed to deploy one of our products which they had run out of in the stores, our people came to work at 10 p.m. so that the rescuers had what they needed as soon as possible.

#### The most famous product of Explosia is the plastic explosive, Semtex. What is the situation with it nowadays?

Semtex has been historically connected, at times, with terrorist actions. For us, it is a product that is deployed in the military as well as civilian domains. It is true that it can be harmful in the wrong hands; yet the same applies to kitchen knives, cars and many other items that otherwise make our lives easier. It is our focus to make Semtex an actively helpful product. That is why we have recently introduced the Desintegrator, a novel disruptor in active counter-terrorism measures, which Semtex is a part of. Imagine a model situation: there is a suspicious suitcase left in an airport hall that is likely to contain explosive ordnance. The EOD team are facing two possibilities: to attempt to disarm it right away, or to deploy a Desintegrator unit, hide in a safe location and detonate it remotely. In all tests, the Desintegrator blew up the suitcase with such velocity that the explosive ordnance failed to activate in time. This is what we see in the future. Semtex also helps as a component of the Semtex Razor flexible charge, which is used, for example, by firefighters for the disposal of ice blocks in the spring floods; it is also quite popular with the Police and the Army. Semtex in sheets is often the tool of choice in the fining of metals.

#### You have been active in the field of explosives for over forty years. What do you think is the future of explosives, in the territory of the Czech Republic and worldwide?







The manufacturing of explosives has always been, is and will be a domain that is important for a number of human activities, ranging from mineral mining, via metallurgy, the automotive industry to defence services. I believe that sooner or later, new Nobels will come and use their invention to create something new, something that will shift the paradigm and move humanity to a new horizon. I am talking especially about peaceful use of the fruit of their work.

**What do you wish for? What is your perfect vision of the market and of Explosia's position there?**

What I wish is for Explosia to become a leading company in the country and worldwide, that those who connect their lives with the company can be proud and that the company is a guarantee of their good, stable well-being.

*Thank you for the interview, Martin Venc!*







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# 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 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 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 2000 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 10x10cm, two versions of bandage for military purposes: BAKOP 1 - bandage with one square of active carbon up to 10x10cm and finally BAKOP 2 - two squares of bandage with active carbon up to 10x10cm.

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# ReTWis 5

## The Latest Version of Radar Detecting People Behind Solid Obstacles

RETIA Company from Pardubice is a leading Czech manufacturer of radar technology and special electronics, which is at the forefront of technological development in its field, even on a global scale. Among its newest and most interesting products is a small portable radar, ReTWis 5.

RETIA introduced the first version of the small portable radar ReTWis (RETIA Through-Wall Imaging System), which is able to track people's activities behind solid obstacles, as early as 2008. However, the designers continued to develop the concept and today the ReTWis 5 is available. The radar is able to detect live beings behind the wall, both in motion and without moving.

The ReTWis 5 radar uses the ultra-broadband (UWB) radar technology. UWB technology is specific with its high resolution ability, difficult to be disturbed and virtually does not interfere with other radio systems.

Another advantage is an easy signal breakthrough, through the wall or through other non-metallic barriers. The visual outputs of the hidden objects behind the walls are displayed on the basis of impulses processing which are emitted from them. The signal processing of the radar ReTWis 5 is optimized to detect small changes caused by human or animal movement, allowing the location of, for example, a person just by breathing.

The use of ReTWis 5 is versatile – it can be used, for example, by security and armed forces. It can provide the police or soldiers with a situational overview of the number and location of people in a room or in a building before any intervention; giving them tactical superiority while reducing the risk of their own losses and negative consequences for civilians. ReTWis 5 can be also used for long-term, hidden surveillance of certain areas, which is enhanced by the possibility of remote transmission of signal and data on the display units. Moreover, the radar signal is difficult to detect thanks to the Step Frequency Continuous Wave (SFCW) technology. The radar is also very useful, for example, to control the presence of hidden people in trucks, and it is not necessary to physically open the truck's semitrailers while using it. Thanks to the Stand-off capability,

it is possible to create an improvised transit control post using the ReTWis 5 radar.

The visual output from the ReTWis 5 radar can be displayed in 2D or 3D with a range of up to 40 m and can be positioned up to 20 m from the obstacle behind which searched persons become visible. The radar is a highly mobile device and with its weight of 3.25 kg it is easily portable and quick to use. In addition to the manual manipulation, the radar construction also allows the installation of a telescopic rod, on a tripod or on special remote-controlled reconnaissance robots. The radar construction is water and dust resistant and complies with the IP 67 standards. It will be possible to transfer the radar output remotely to various display and data devices, so that is not will be a problem to connect a computer, notebook, smartphone or tablet using LAN or Wi-Fi connection. The software and hardware equipment allows up to two hours of recording and then it is possible to work with these records, for example to transfer them to external devices for their playback or further processing. The Radar is ready for use only 20 seconds after it is switched on and with its powerful batteries it is able to operate continuously for 5 hours. An external charger is also available as an option. ReTWis 5 is also resistant to interference, so several radars can be used at the same time to monitor the same space.

The features and capabilities of the radar ReTWis 5 are at the top in their field due to the high level of development and production capabilities of the RETIA Company, based in Pardubice. RETIA has been building its position and its abilities for a long time; this year it is celebrating its 25th anniversary of the company's establishment. In 1993 it was founded by engineers from the former Tesla from Pardubice. During its existence, RETIA has

focused on the development, manufacture and modernization of radars, anti-aircraft rocket systems, electronic command and control systems, recording systems, UWB locating devices and communication systems. These products are supplied to the Army of the Czech Republic, as well as to NATO allied armies, directly to the North Atlantic Alliance and to other military and civilian customers in the Czech Republic and in more than 40 countries.

Last year, for example, RETIA completed a long-term contract for radar sensors ReVISOR for the Czech Army, or completed deliveries for the unique system Alliance Ground Surveillance (AGS) of North Atlantic Alliance, which serves to monitor the ground situation in a designated area and to locate land and sea targets. RETIA also cooperates with the Israeli company ELTA on the current radar project for the Czech Army – MADR. In the past, RETIA upgraded for the Czech army, for example, the anti-aircraft missile systems 2K12 KUB or developed, manufactured and ensured the implementation of the fire command and control system RACCOS.



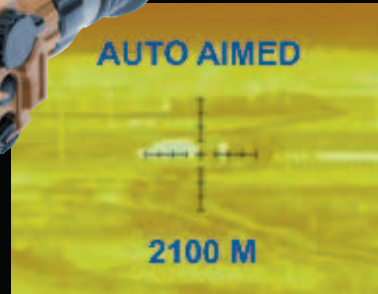


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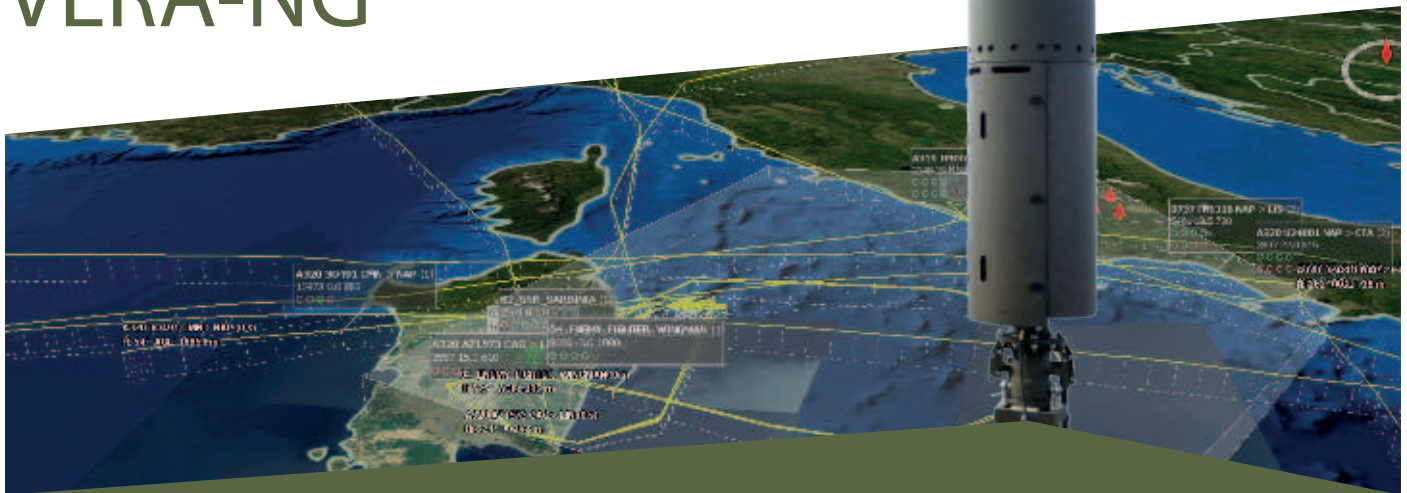
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# VERA-NG



## VERA-NG simulator – training tool for the Passive ESM Tracker

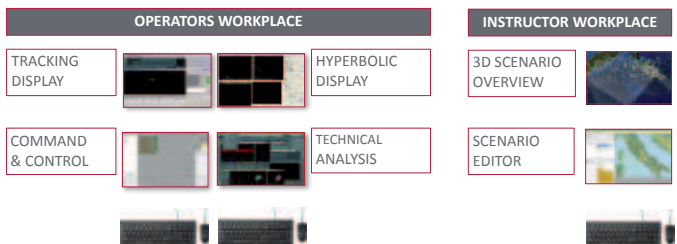
The training simulator is a military reconnaissance tool, which provides training of passive tracking and electronic intelligence systems. The simulator system consists of the VERA-NG console as a workplace for operators (trainees), a simulator console as a workplace for instructors (trainers), a central processing station and receiving universal military module. The training simulator significantly decreases the time needed for new users to obtain needed experience without affecting the performance of the operational system. The training can be carried out using data from prepared scenarios or data from one receiving station. Off-line data from another VERA-NG system can also be replayed.

ERA (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:

Navigation flights, Dog fights, AWACS monitoring, Air support JTAC, Area mapping, Border crossing

### BENEFITS:

- ✓ One receiving station to analyze real signals for advanced training.
- ✓ Any type of battlefield scenario (airspace, ground or navy)
- ✓ No need to deploy the entire system with four site stations
- ✓ Developed in cooperation with the Department of Radiolocation at the University of Defense in Brno



VERA-NG addresses critical elements in today's military and security 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“.

The system's design is fully deployable in all three versions ERA offers to military bodies all over the world. The sensors could be placed either on masts of two different heights (12 and 25 metres) or light weighted tripods or quadpods. They can be easily transported either in the special lorries of different brands as an integral part of the delivery or in general purpose

vehicles. It has been delivered in a “roll-on/roll-off” configuration including a fully configured mobile command centre containing all the processing, analysis and observation equipment. This passive system emits zero electromagnetic energy making it invisible to anti-radar missile systems. Traditional active surveillance solutions, while effective at detecting, locating and tracking targets, are susceptible to detection and either jamming or even destruction due to their active nature. Moreover, traditional radars are unable to detect all targets, particularly targets based on low observable technology and electronic countermeasures to trick or deceive traditional radar. There has consequently been a long-term need for a covert, effective, mobile, solution to the surveillance requirement. The above mentioned benefits make VERA-NG to be the last line of defence if primary radars are destroyed in a conflict situation.





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# PK4 (Kaga)

## Mobile Field Kitchen is Awarded Prix IDEB 2018 in Bratislava

At this year's International Trade Fair of Defense Technologies IDEB in Bratislava, the company Agados presented a newcomer in the world of field kitchens - PK4 (Kaga). The kitchen of the future was awarded the Prix IDEB 2018 in the category Security and protection of persons. Last year, it received a similar award at the Trade Fair of Defense and Security Technologies in the Czech Republic - the Golden IDET 2017.

### PK 4 (KAGA) – Mobile Field Kitchen

#### For full-menu catering for up to 350 persons

##### Advantages:

- Chassis allows redeployment of PK4 in difficult terrain
- Fast and simple preparation of PK 4
- Usage of modules on the trailer and also set up separately
- Modular design for flexible application and wide meal preparation versatility

##### General description

With its modular structure, the PK4 is a trailer cooking system capable of adjustment to the cooking habits of any user group

in field operation. The special feature of the PK 4 are four free places on the off-road single-axis trailer can be freely configured to individual requirements. The system can be ready for the operation within 30 minutes and depending on the equipment configuration, the PK 4 system is suitable for cooking a complete menu for up to 350 people. For rescue operations, depending on the equipment configuration up to 900 persons can be served a simple meal. All the cooking modules of PK 4 are made of a high grade, stainless steel and they meet the highest hygienic requirements. The rounded corners of the cooking module and their seamless design permit convenient cleaning using a minimum of time and detergents in compliance with the HACCP- concept. The PK 4 can be used with different burners, e.g. pressure, atomization and a gas or solid fuel burner. All of them designed by Karcher Futuretech.





# Special projects

## PK 4 (KAGA) MOBILE FIELD KITCHEN

FOR FULL-MENU CATERING FOR UP TO 350 PERSONS



## PK 6 (KAGA) MOBILE FIELD KITCHEN

NUMBER OF PORTIONS ACCORDING TO THE KITCHEN CONFIGURATION



## UVA 500 WATER TREATMENT TANK

INTEGRATED MOBILE DEVICE - WATER CLEAN SYSTEM



## NAVA 2000 WATER TANK

MOBILE WATER TANK FOR TRANSPORTING 2000 L OF DRINKING WATER



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# OPTOKON Centralization of Services and Applications in Infantry Combat Vehicles

The system described in the last edition of CDIS Review requires a high-performance computing system based on the LMCP-28H/41H Land Mobile Computing Platform. This is a robust rugged server platform specially developed for the needs of mobile defence establishments for the security forces. It allows the operation of different virtual servers and, therefore, user applications and services that were not previously possible under the given operating conditions because of space, high power input, and insufficient computing power.



LMCP-7HP compact small dimensions computing platform

## LMCP-7HP compact small dimensions computing platform

The power supply can be from any DC voltage within the range 10.5 – 36 V DC input design. Sealed against dust and debris, our Rugged Line stands up to shocks, vibrations, and a wide temperature range.

## Ruggedized field full Gigabit switch

When installing mobile optical networks, it is necessary to solve the requirement to connect a large number of connection nodes: servers, workstations, IP cameras, IP phones, monitors, and other devices.

Advantageously, Ethernet-based devices are used at 10/100/1000 Mbps transmission rates, future systems assume the use of a 10 Gbps uplink transmission speed.

The cables used in the vehicles, shelters, and containers are usually metallic, CAT5E and CAT6 UTP cabling. The interconnection between the individual network nodes for vehicles is preferably carried out using optical fiber cables. Therefore, the individual network resources are usually equipped with both types of interfaces: RJ-45 for UTP cabling and HMA-J for fiber optic cables. Switches in the LMSW-80M series are fully Gigabit, available in different configurations of RJ-45 and HMA-J ports. The RJ-45 ports support the PoE IEEE 802.3at standard for powering connected devices.



LMCP-28H - high-performance mobile computing platform

## LMCP-28H - high-performance mobile computing platform

However, not all applications require such high computing – server performance, memory, and disc capacity are ensured by the use of a fully equipped LMCP-28H/41H Computing Platform. On the other hand, space in some combat vehicles or containers is sufficiently limited to prevent the installation and operation of the LMCP-28H/41H.

In these cases, it is possible to deploy the LMCP-7 type where the smaller dimensions enable deployment in a limited space. The dimensions are 165 x 115 x 165 mm (6.5" x 4.5" x 6.5"), compared to 294 x 353 x 130 mm (11.6" x 13.9" x 5.1") in the case of the high-performance version of the LMCP-28H.

The OPTOKON compact, ultra-durable LMCP-7HP server is equipped with a 6<sup>th</sup> Gen Intel® Core™ CPU, SSD disc, and 4x Gigabit Ethernet ports. The LMCP-7HP supports up to 20 GB of DDR4 memory, resulting in a reduction in overall power consumption compared to DDR3-based servers.

The LMCP-7HP offers military-grade features in rugged housing making it the ideal platform for applications in harsh and rugged environments. The LMCP-7HP can operate in harsh environments under a temperature range of -20 to +60 °C.



LMSW-83M



LMSW-80MD





The switch supports a variety of management functions, including STP/RSTP/MSTP and ITU-T G.8032 Ring<50 ms recovery time, advanced PoE management functions such as PoE device auto-checking and auto reset, layer 2 Ethernet IGMP, VLAN, QoS, Security, IPv6, bandwidth control, port mirroring, cable diagnostic and Green Ethernet. The switch is able to fit all the common 12/24 V DC and 230 V AC power systems simultaneously (redundant power supply). The switch operates in a wide operating temperature range -40 to +70 °C. The switch can operate as a stand-alone device or, in addition, the 19" brackets allow switch installation into a 19" rack.

**Ruggedized serial interface converters**

Many connected devices and sensors are not connected by Ethernet protocol but require communication via serial interfaces RS232,422,485. In these cases, a serial interface converter of the VICM-213.SR type is specified. Similar to the previously described VICM-213 and LMC-02 Ethernet media converters, this is housed in a robust metal box and provides Expanded Beam connectors for fiber optic cable and copper twisted pairs ports for harsh environmental conditions. The LMC rugged design extends the use of serial links in military, aerospace, broadcasting, petrochemical and harsh industrial applications. It meets the demands for mobility, easy installation, and the mechanical resistance necessary for tactical deployment in the field. The LMC converters provide the freedom to extend asynchronous RS-232, RS-485, RS-422 serial transmissions up to 2 km over multimode fiber or up to 50 kilometers if using single mode fiber.



VICM-213



VICM-06

The optical and electrical ports converters are terminated at separate connectors, HMA type for FO, 2x rugged RJ-45 for serial interfaces. The power supply is ensured via a 3-pin rugged connector.

The VICM-213 can be connected to RS-232 (3 wires), RS-485 (2 wires, half duplex) or RS-422/485 (4 wires full duplex).

If multiple serial interfaces are needed, the converters can be grouped together into a 2U frame with a common power supply of 10.5 - 36 V DC, type VICM-06.

**Field IP telephony systems**

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

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



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**HARSH ENVIRONMENT CONNECTORS**



Connectors and cables for extreme temperatures ranging from -60°C to +85°C

**OPTOKON NATO SUPPLIER CODE: 1583G**

**HARSH ENVIRONMENTAL HYBRID FERRULE CONNECTOR**

- SFF ferrule termination procedure
- Excellent transmission parameters
- Hybrid connection (FO/copper wires)



New hybrid HMA connector

**HARSH ENVIRONMENTAL EXPANDED BEAM CONNECTOR**

**HMA-J series  
HMA-S series**



- Advanced expanded beam technology
- MIL-DTL-83526 specification
- 2 - 8 fiber channels (fiber and electrical channels)
- Singlemode and/or Multimode
- Hermaphroditic interconnection
- No adaptors necessary

**HARSH ENVIRONMENTAL EXPANDED BEAM CONNECTOR**

**HMA-JF series**

- SFF ferrule termination procedure
- Excellent transmission parameters
- Hermaphroditic interconnection



**CABLE DRUMS**





LMPT-41, rugged IP phone set

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

### Perimeter security system

The principles of protecting the perimeter of stationary and mobile sites with fiber optics were described in the last edition of CDIS Review.

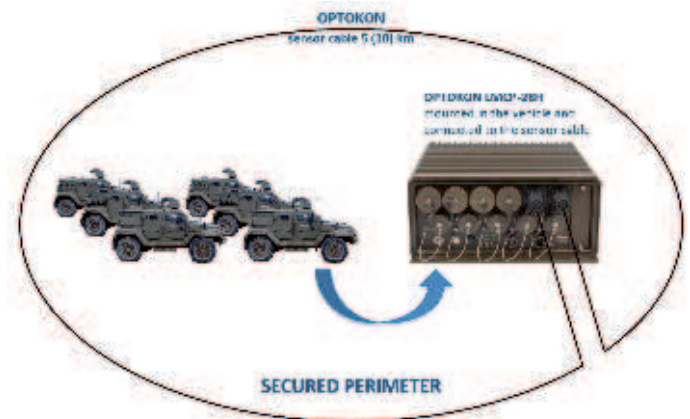
OPTOKON introduces the distributed optical fiber temperature and strain sensing system, which is a complex system based on a number of patented technologies integrated with optical, mechanical, electronic modules and software algorithms. It features excellent technical specifications and user-friendly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

- Power line monitoring
- Pipeline monitoring
- Border security monitoring
- Railway operation and physical security monitoring
- Airport security monitoring
- Civil engineering structure monitoring (tunnels, bridges, dams.....)
- Ensuring the security of mobile military assets

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

### Features:

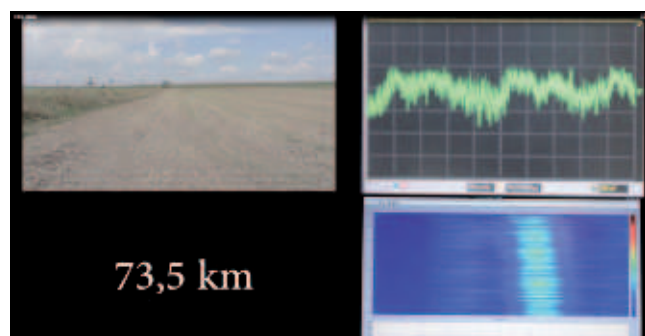
- Sensing fiber : Single mode fibers
- Distance Range Up to 20 km (40 km; 80 km; 150 km)
- Spatial Resolution: 0,1 - 0,5 m (depending on measurement condition)



Ensuring the security of mobile military assets

Ing. Pavel Pospíchal  
 Technical Director  
 OPTOKON, a.s.

For more information about the LMCP platform or further solutions, please email [info@optokon.com](mailto:info@optokon.com)



## THE ECOC EXHIBITION

EXHIBITION 24-26 SEPT  
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We are pleased to inform you that OPTOKON will be participating at ECOC 2018, Italy - 24.9.-26.9.2018 - OPTOKON stand: 449



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# OPTOKON at the IDEB 2018 International Defence Exhibition

The IDEB 2018 International Exhibition of Defence and Security Technologies was held in Bratislava from 16 to 18 May 2018. Among the exhibitors was OPTOKON, a.s., who introduced the deployment of its technologies on the KBV-12 PATRIOT tactical military vehicle along with its command and control post solution on the VÝVOJ Martin, a.s. exhibition stand.

OPTOKON, a.s. in cooperation with VÝVOJ Martin, a.s. gave a live demonstration of the C4ISR Martin, which ensures full interoperability with NATO coalition partners at all command and control levels.

"The goal was to showcase the features

of our developed LMCP-28H system, which is the core of the tactical site for planning and managing operations," says Jozef Karbas from OPTOKON and adds that "the subject of the presentation was a complex and fully modular solution that meets the demanding requirements of future users. It is not only intended for the Czech or Slovak market as we are able to supply this modular system to foreign armies together with our partners while we are able to integrate it for those users of previously established systems". The system presented, which in addition to the companies mentioned above the companies Delinfo and Interlink CS also participated in the construction of, features:

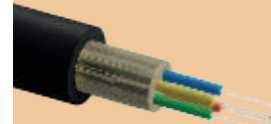


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**High-class Rugged IP Phone**



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- Wideband audio for crystal clear voice communications

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**Ruggedized Field Switch**



- 2 fiber optic ports, 6 UTP ports, 2 FXS ports
- complies with STANAG 4643 standards

**LMCP-28H  
MOBILE COMPUTING PLATFORM**

**Mobile server  
for audio, video  
and data signals**



- 2 fiber optic ports, 6 UTP ports, 2 FXS ports
- complies with STANAG 4643 standards

**LMSB SERIES COMMUNICATION NODES**

LMSB-series  
CIM COMM ALL

- Communication and Information Module



**LMC SERIES  
COMPACT MEDIA CONVERTERS**

- 10/100/1000 Mbps data transmission
- FO connectivity up to 2 km for MM, 80 km for SM
- MIL-STD tested



**Czech Army  
Technical specifications: TP-OPT-1981-2004**

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- A comprehensive solution for inter-connecting modern tactical radio stations.
- A comprehensive Combination of Combat Vehicle Systems (System for Commander, Operator, Driver, and Remote controlled weapon stations).
- The creation of a tactical command and command post with support for C2 STAFF.
- Multilateral Interoperability Programme MIP 3.1 for planning and operating operations and connects with combat vehicle systems as well as dismounted soldier systems.

The practical and lively LMCP (Light Mobile Computing Platform) demonstration highlighted the complexity and versatility of the system, which also introduced the following options:

- Video server that stores and distributes the image of the vehicle's camera system, observation devices, weapon stations and external devices (UAVs, etc.).
- Creation of a 1Gbit tactical data network in the vehicle and at command sites.
- 13 x Ethernet interfaces.
- VOIP server for up to 100 IP (PoE) phones.
- Time server.
- Server virtualization to run other systems (surveillance, cyber security, etc.).

The Ministry of Defence awarded the GRAND PRIX for the category of Information and Communication Technologies to the C4ISR Martin Communication System at the IDEB 2018 exhibition.



### Cyber security of C4ISR Martin systems

**On May 17, 2018, the "CYBERNETIC SECURITY" conference was held in Bratislava, where participants discussed the current cyber threats, the possibilities of eliminating the threats, and also the challenges related to this issue. The event included the presentation by representatives of OPTOKON, a.s., who also highlighted the fact that C4ISR systems also need to address cyber security.**

"CYBERNETIC SECURITY" was held at the IDEB 2018 International Defence and Security Technology Exhibition and was organized by AFCEA Slovakia in cooperation

with representatives of the Armed Forces of the Slovak Republic and a number of commercial companies. Representatives of OPTOKON, a.s. as part of their presentation, presented the C4ISR system built on their LMCP-28H devices and also focused on cyber security issues within operational tactical networks.

"The aim of our solution is to deliver to the user not only the greatest possible range of C4ISR functionality in the highest possible quality but also a system that will be safe and reliable at all times," said Jozef Karbas of OPTOKON, a.s. who continued, "Our company builds its cutting-edge technology and thinks through each and every detail while building on the high quality of Fidelis Cybersecurity, as with other cyber-security features. We have to realize that just as it is possible to destroy command and control posts in a conventional way, the same sites can now be attacked through the IT network."

OPTOKON has become a gold partner of the company Fidelis Cybersecurity and together with representatives of this company, successfully tested the integration of the Fidelis Network module with the Fidelis Sensor, Fidelis Collector and K2 user console components and the LMCP-28H device with a memory expanded by 64 gigabytes RAM to the maximum possible 128 gigabytes.

*Dipl. Eng. Jozef Karbas  
OPTOKON, a.s.  
Director of ICT systems*







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# MESIT Vehicular Communication System News

The MESIT has been actively participating for many years in a wide range of projects for the army, supplying the ground and air forces with various communications systems. The branch of military communication systems is based on own design, development and production of Tactical Radio Communication Systems, Vehicle Intercom Systems, Battlefield Announcement Systems, Radio Accessories and Personal Headsets.

In the 1970's, the company introduced its own intercom system as well as the first personal headset primary used within the L410 aircraft. MESIT has been subsequently produced several communication systems generations like VICM 100 mainly intended for the ground military applications up to state of the art **VICM 200 COMBAT** Intercom System (IS). Based on this experience the company achieved the rank of the world's most advanced manufacturers with thousands of units exported all over the world during recent years.

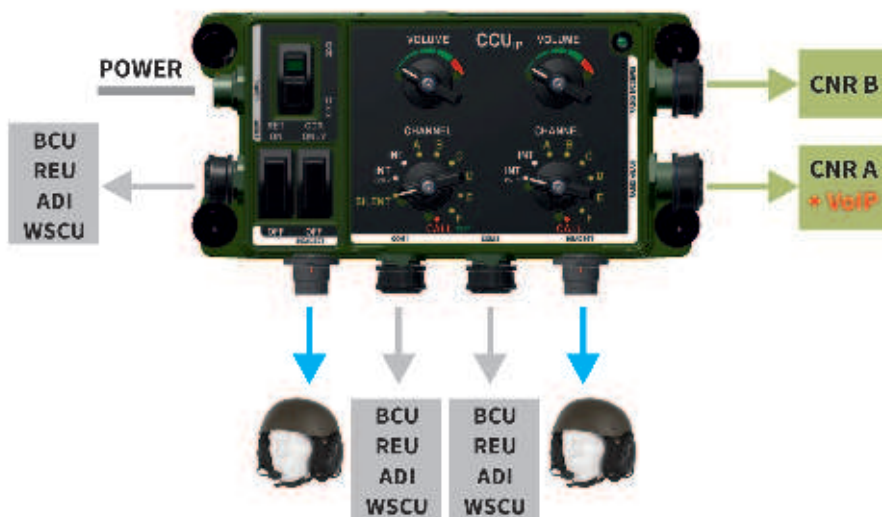
The VICM 200 COMBAT is composed of a whole range of system units like Central Communication Unit (CCU), Basic Communication Unit (BCU), Audio & Data Interface (ADI), Wireless Segment Control Unit (WSCU), Radio Extension Unit (REU), Intercom Communication Unit (ICU), Field Telephone Interface (FTI), Loudspeaker Unit (LU) and Personal Communication Interface (PCI). These units allow to connect various types of vehicle tactical/combat net radios (CNR) from various manufacturers as well as headsets, loudspeakers, battlefield announcement systems, field telephones, battle management systems, sensors etc. Due to its modular and software-based design IS can also be extended

with a broad range of new supplementary units providing additional functionality.

The advanced **Central Communication Unit** named as **CCU<sub>IP</sub>** may be deployed as a standard intercom system and/or a gateway for tactical integration on military Session Initiation Protocol (SIP) Voice over IP (VoIP) networks with embedded call management which provides the

se users via dialling pre-configured telephone numbers to set up the VoIP call. Inversely, the VoIP network users can call a specific group that may include a radio net, a field telephone, crew or a combination between them.

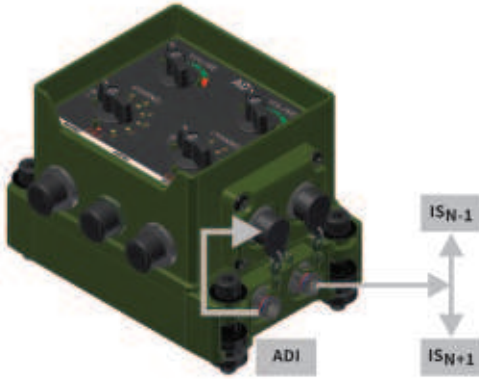
The CCU<sub>IP</sub> supports a built-in SIP registrar with integrated Internet Protocol (IP) Private Branch Exchange (IP PBX) features. It provides seamless access to and from non-VICM connected network SIP devices based on standard VoIP/SIP protocols. The CCU<sub>IP</sub> can also dynamically interwork with an external SIP server which provides access, control and call routing to and from other SIP devices in the IP network. IP over the air is possible using IP enabled radios.



crews with call handling functions (dial tone, busy tone, automatic call answering, white/black list, call recording etc.). The CCU<sub>IP</sub> is a simple solution for military application requiring a single platform for analogue voice and VoIP networks transparent communication. The CCU<sub>IP</sub> features built-in VoIP telephony switch enables the integration of tactical radios, field telephone, audio warning messages and vehicle crew into a VoIP network. It enables automatic routing/access of the

The **Audio Interface Module (AIM)** was introduced as a new extension unit to provide the ability to interconnect several Intercom Systems in linear network topology using a cable. This solution was primary required by the user of the self-propelled amphibious bridging vehicles used for the projection of tanks and other vehicles across water obstacles. These vehicles are equipped with VICM 200 COMBAT including AIM unit. It creates daisy chain (IS<sub>N-1</sub> – IS – IS<sub>N+1</sub>) in which





all vehicles/Intercom Systems are wired together in sequence. Intercom full-duplex communication channels from all interconnected vehicles are linked together using a single electrical bus. Each AIM connects the intercom channel of the vehicle as well as it repeats and amplifies shared communication channel.

This solution allows the wired interconnection up to 10 vehicles mutually communicating with each other in both directions regardless of their order, there is no need for a bus terminator on the last device in the chain. Even if any single interconnected IS fails, communication is not interrupted for the rest of the systems. AIM can be placed in vehicle as a separate unit connected to the ADI or it can also be installed under the ADI as an additional layer to provide the user with the compact solution saving space in the vehicle.

the Intercom System. This compact unit features one rotary selector switch for independent volume control of received audio/communication channel which is defined either by the configuration utility or by the channel selector position of the connected main VICM unit – it provides full

access to the intercom communication channel and this remote/additional crew member can also operate pre-selected radio communication channel. The RCU is a very compact and lowcost solution for the crew which is located further from the standard IS units adaptable to a wide range of installation needs including its location outside the vehicle.



MESIT has also introduced the **FILL GUN (FG)** which is the device intended for the uploading user configuration into individual VICM 200 COMBAT Intercom Systems. The FG can be either used as a standard VICM configuration cable interconnecting the Personal Computer (PC) with the application "VICM Configuration Utility" and CCU to configure connected IS (the current configuration is stored in internal FG memory) or it can be used a device which is able to upload presaved/stored/default configuration to other ISs in the field by pressing the integrated control button without PC. The successful IS configuration is confirmed by the integrated visual status indication.



The another new VICM 200 COMBAT extension unit reflecting the specific user's requirements is the **Remote Communication Unit (RCU)** which enables the connection of the crew Active Noise Reduction (ANR) or passive headset to

Dr. Tomáš Mazúrek,  
R&D Project Manager  
[www.mesit.cz](http://www.mesit.cz)



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# International Activities of the Ministry of Interior – Directorate General of the Fire Rescue Service of the Czech Republic

The text below is intended to give readers an insight into international activities of the Ministry of Interior – Directorate General of the Fire Rescue Service of the Czech Republic, with an emphasis on the years 2017 and early 2018. These activities may occur in various forms, including participation of members of the Fire Rescue Service of the Czech Republic at international exercises, training courses, or seminars, the Czech Republic's membership in international organizations, or bilateral cooperation.

## Civil Protection and Civil Emergency Planning

Insofar as this area is concerned, the Department of Civil Emergency Preparedness and Strategies acts as a representative of the Czech Republic, particularly toward the European Union and NATO, taking part in meetings and cooperating with the Permanent Representation of the Czech Republic to the EU and Perma-

nent Delegation of the Czech Republic to the NATO in Brussels. The Department also is, inter alia, the contact point of the European Programme for Critical Infrastructure Protection.

As to the EU Council, Civil Protection issues are dealt with by the Working Party on Civil Protection (PROCIV), the mission of which is to improve Civil Emergency Preparedness at national, European and

international level. The Working Party is led by the presidency of the EU Council.

As to the European Commission, Civil Protection issues are dealt with mainly by the Civil Protection Committee (CPC). The Committee assists the European Commission in implementing Decision No 1313/2013/EU of the European Parliament and the Council on a Union Civil





Protection Mechanism, which has been adopted to enhance cooperation in the area of Civil Protection and to ensure an effective response to disasters inside and outside of the EU. The European Commission also organizes meetings of other expert working groups, which meet on an ad hoc basis and deal with, for example, prevention, collection of data on disasters, training programmes, forest fires, joint communication and information system for emergencies, etc. Participation in these meetings is arranged by the Department of Civil Emergency Preparedness and Strategies in cooperation with other relevant departments of the Fire Rescue Service of the Czech Republic.

Today's flagship of NATO's Civil Emergency Planning is an agenda linked with enhancing resilience of the Alliance's member nations, so that NATO's deterrence and defence policy remains credible even in changing security environment. In 2016, the Allies agreed on further developing their capacities in seven areas of civil preparedness. To make the process more effective, the Allies prepared evaluation criteria for these seven areas early in 2017, which were subsequently approved by the North Atlantic Council (NAC) in February 2017. The Ministry of Interior – Directorate General of the Fire Rescue Service of the Czech Republic, as the national authority responsible for civil emergency planning, started the process of national self-evaluation at the 36<sup>th</sup> coordination meeting of representatives of ministries and central administrative agencies cooperating with planning groups of NATO's Civil Emergency Planning Committee (CEPC) held on November 9, 2017. The process of national self-evaluation of the Czech Republic will be concluded by the end of 2018 and an evaluation report will be submitted to the Civil Emergency Planning Committee.

Civil Protection and Civil Emergency Planning issues are also discussed with other international organizations, such as the United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), or the Visegrad Group (V4).

#### **International exercises of Integrated Rescue System components**

In the international area, the Ministry of Interior – Directorate General of the

Fire Rescue Service of the Czech Republic focuses on practical cooperation of experts and rescue teams of the Fire Rescue Service of the Czech Republic that are predetermined to deal with emergencies resulting from large-scale disasters. The most frequent form of training of rescue personnel are international exercises organized within the Civil Protection system of the European Union. Under the auspices of the Ministry of Interior – General Directorate of the Fire Rescue Service of the Czech Republic, eight members of the Fire Rescue Service of the Czech Republic took part in seven EU international exercises in 2017, acting as experts, observers, or organizers. Furthermore, the Ministry of Interior – Directorate General of the Fire Rescue Service of the Czech Republic dispatched three rescue teams to three international tactical exercises, and 10 representatives of rescue teams to four international staff exercises. The United Nations Office for the Coordination of Humanitarian Affairs with its International Search and Rescue Advisory Group (INSARAG) is also an important partner for cooperation and improvement of experts' know-how. Two members of the Fire Rescue Service of the Czech Republic took part in exercises organized by UN-OCHA. In February 2017, a European exercise took place in Estonia under the title "Modex-Falck 2017"; it was focused on teams trained to search for and rescue people trapped in collapsed buildings, so-called Urban Search and Rescue (USAR) teams. The exercise's scenario was a devastating earthquake which has caused landslides and partial or complete collapse of most buildings. The USAR team dispatched by the Fire Rescue Service of the Czech Republic consisted of members of the Fire Rescue Service of Capital of Prague, a surgeon of the Trauma Hospital in Brno, and dog handlers earmarked for international rescue operations. Other EU Civil Protection modules participated as well – the Central Austria team (SARUV), a team from Hungary, a coordination team of EU experts (EUCPT – European Union Civil Protection Team) and its supporting unit (TAST - Technical Assistance and Support Team). The four-day exercise with the teams deployed without any interruption for 36 hours was focused on mutual cooperation in ruins of buildings and surrounding areas, safety of the teams during move-



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ments, and also on communication with the public and media.

The topic of the “CZECH MODEX 2017” international exercise organized by the Fire Rescue Service of the Moravian-Silesian Region in November 2017 were floods in a fictitious state of Modulistan and its “Chacharia” region. Its participants included three high-capacity pumping modules from Poland, Romania, and Italy, a four-member special team for the detection of hazardous substances from the Netherlands (Environmental Assessment Unit), and the EU coordination team (EUCPT – European Union Civil Protection Team) and its supporting unit (TAST - Technical Assistance and Support Team) comprising experts from Lithuania and Latvia. The purpose of the exercise was, in particular, to verify cooperation and coordination capabilities of the Fire Rescue Service of the Moravian-Silesian Region during floods, as well as the coordination of foreign humanitarian and rescue assistance provided by other nations within the EU Civil Protection system. The CZECH MODEX 2017 exercise involved 48 hours of continuous deployment of the teams, and was organized with the assistance of experts from the Fire Rescue Service of the Czech Republic.

To enhance capabilities of Nordic EU modules, the Finnish Crisis Management Center organized an international exercise for commanders of EU USAR modules in the town of Sodankylä (800 km north of Helsinki, north of the Polar Circle). The exercise was focused on survival and operation in extremely cold conditions. After theoretical preparations, its participants underwent three days of training at temperatures ranging between -8°C and -20°C, to verify their newly acquired knowledge, such as how to protect oneself against subzero temperatures, how to build a fire, how to maintain vehicles and equipment, or how to sleep and move about in the snow. The participating nations included, in addition to the Czech Republic, Finland, Denmark, Norway, Poland, Lithuania and Latvia, Hungary, Italy, and Greece. The instructors were soldiers from the Sodankylä Jaeger Brigade, a unit designated to conduct combat operations in Arctic conditions.

#### Important events and visits abroad

In September 2017, an international fire-



fighting sport contest took place in the town of Villach, Austria. It was attended by 50 members of the Fire Rescue Service of the Czech Republic and approximately 270 voluntary firefighters. The Czech Republic won the highest number of medals and became the most successful of 28 participating nations.

In May 2017, a meeting titled “Global Platform for Disaster Risk Reduction” took place in Cancún, Mexico. One of the main items on the agenda was early warning and monitoring of risks. Participants from the whole world presented their national approaches and achievements in the area of disaster risk reduction and the implementation of the Sendai Framework.

In June 2017, a meeting of the Executive Board of the United Nations International Children’s Fund (UNICEF) took place in New York, during which the Permanent Mission of the Czech Republic organized a parallel event on disaster risk reduction (DRR). The Ministry of Foreign Affairs asked the Ministry of Interior – Directorate General of the Fire Rescue Service of the Czech Republic to attend the event and to deliver a presentation on practical experience of the Czech Republic in this field.

In November 2017, a meeting on the amendment of the “UN-OCHA Field Manual” took place in Prague, which was attended by 14 selected experts of UN

agencies from France, Poland, Switzerland, and the Czech Republic, including the Czech ambassador to the United Nations.

In the Framework of Czech membership in the V4, three meetings were held in 2017. In May 2017, the 17<sup>th</sup> meeting of Directors General for the Civil Protection of the V4 countries took place in Czestochowa, Poland. In August 2017, there was another meeting, also in Poland, which was focused on sharing of experience in the field of Prevention and education. In November 2017, the Ministry of Interior – Directorate General of the Fire Rescue Service of the Czech Republic hosted a V4 meeting the purpose of which was to share experience in the field of provision of psychological and social assistance to people affected by a disaster and provision of post-traumatic care to fire-fighting and rescue personnel.

Since 2015, the Fire Rescue Service of the Czech Republic has been implementing a project of foreign development assistance with the Office for Civil Protection and Emergencies of Moldova, which focuses on operations and interventions involving the presence of hazardous substances. Detailed information can be found in Issue 4 of 2017. In 2018, the project will concentrate on protection against floods.

– FRS CR –





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# Czech Companies at DSA 2018 Defence Exhibition in Kuala Lumpur

On 16th-19th April, 2018, over 40 representatives from sixteen Czech companies (Omnipol, ERA, Retia, Česká zbrojovka Uherský Brod, Sellier & Bellot, Mesit Defence, Mesit Aerospace, Ray Service, Optokon, Lemax, Oritest, 4M Systems, AVEC Chem, Excalibur Army, Meopta, LANEX) participated in the international defence exhibition DSA 2018 in Kuala Lumpur, Malaysia. The Pavilion was provided by the Ministry of Industry and Trade of the Czech Republic under the Official Participations of the Czech Republic programme.

History of DSA, which takes place biennially, started in 1988. This year's sixteenth installment marks the 30<sup>th</sup> anniversary of this exhibition, which is widely recognized as one of the top five in its field in the world. The exhibition was held for the first time in the brand new Malaysia International Trade & Exhibition Centre - MITEC. The exhibition area spanning 43 000 m<sup>2</sup>, hosted 1500 companies from 60 countries and estimated 50 000 of trade visitors.

This year, the Czech pavilion of 218 m<sup>2</sup> showcased the sixteen Czech companies, such as Česká zbrojovka Uherský Brod (firearms), Sellier&Bellot (ammunition), Excalibur Army (system integrator, upgrades/overhaul of military vehicles), Meopta

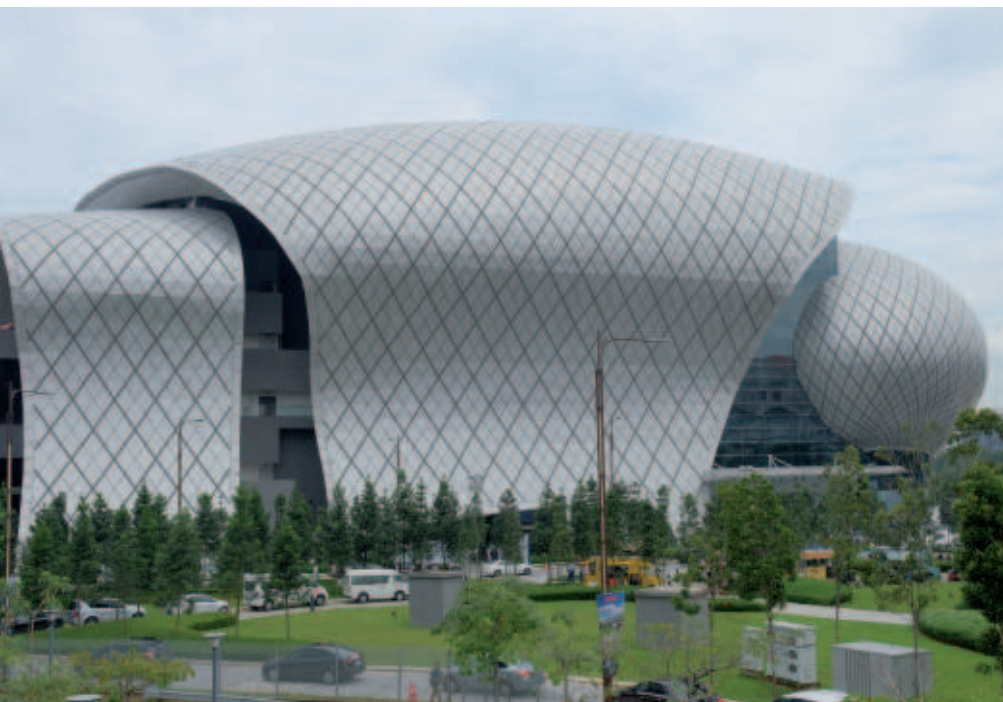
(military and civilian optics), Retia (radio-location), MESIT Defence, MESIT Aerospace (communication systems for military vehicles, planes and helicopters), OMNIPOL (system integrator), ERA (passive flying object detection), AVEC Chem (air purification and breathing protection systems), Lemax (portable searchlights), LANEX (ropes), ORITEST (detection of chemicals), 4M Systems (tactical equipment), Optokon (ruggedized optical networking solutions) and Ray Service (electrical systems for armed forces and aerospace). Czech companies were represented by more than 40 delegates from the Czech Republic and their local representatives.

The Czech pavilion was visited by a multi-

tude of notable officials from Malaysian, as well as other regional armed forces. The guests included as the Malaysian Chief of Defence Forces Gen. Mohamed Affandi bin Raja Mohamed Noor, Malaysian Chief of Air Force Affendi bin Buang, Inspector General of Royal Malaysian Police Mohamad Fuzi Harun and Malaysian Deputy Chief of Army HJ Ahmad Hasbullah bin HJ Mohd Nawawi. Czech business people have also met with leading representatives of defence forces of Thailand, Brunei, Sri Lanka, Pakistan and others. The Czech pavilion was also visited by the Crown Prince of Selangor Tengku Amir Shah, who showed a vivid interest in the products of Česká Zbrojovka Uherský Brod.

The Embassy of the Czech Republic in Kuala Lumpur supported the Czech participation at DSA 2018 by providing logistical support for the whole duration of their visit. Ambassador of the Czech Republic to Malaysia, Rudolf Hykl, hosted at the Residence a networking cocktail for the Czech participants, their local representatives and business partners, with more than 70 guests attending.

The Czech pavilion was financed from the Official Participations of the Czech Republic programme of the Ministry of Industry and Trade of the Czech Republic. The keen interest of the Czech companies required more exhibition space to be purchased with the financial contribution of the CzechTrade agency.



*Vojtěch Hromek*

*Embassy of the Czech Republic Kuala Lumpur*





EVPÚ Defence Gunner and Commander sight are compact, modular and tailored systems providing short to long-range target detection recognition and identification with high efficiency and accuracy. Versatile for tanks, turrets, armoured vehicles and weapon stations, EVPÚ Defence ensures successful mission.

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# FUTURE FORCES FORUM

**17 - 19 October 2018**  
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- ✓ International platform for trends and technologies in defence and security
- ✓ Exhibition and expert events (conferences, workshops, NATO/EU working groups)
- ✓ Dynamic presentations, Live Hacking Zone
- ✓ B2B, B2G, G2G meetings – industry, R&D, academia, government, national and international organisations
- ✓ Armed and Security Forces, Police, IEMS, Prison Service, Customs Administration





# New Jeep Military vehicle

## World premiere of the new Jeep Military vehicle by AADS at EUROSATORY



AADS is an international distributor of the Jeep, and is authorised to convert, accessorise, armor and market Jeep to military customers around the globe. AADS has contracts with the US Department of Defense, and has distributed Jeep Defence vehicles to more than twenty countries worldwide

AADS conversions offer a range of military products on one platform, including Command Vehicles, Troop Carriers, Ambulances, Armored Vehicles, Light Patrol Vehicles, and Utility Variants. Bespoke conversions can be developed, within reason

Moreover, AADS and FCA attach the utmost importance to sustainment of military vehicles long term. AADS has a full After Sales support service, and AADS trainers have carried out over 70 Training Programs in the last few years

We look forward to welcoming you to Stand Number **C430**, where you will be able to preview the next generation of Jeep Defence vehicles, to be launched in 2019.

Fiat/ Chrysler (FCA) and Africa Automotive Distribution Services (AADS), will be showcasing Jeep Military Vehicles at Eurosatory 2018. Jeep Defence vehicles

are the latest incarnation of the legendary Willys Jeep, "the vehicle which won the Second World War".

<https://www.aads-gib.com/>





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

CZECH  REPUBLIC

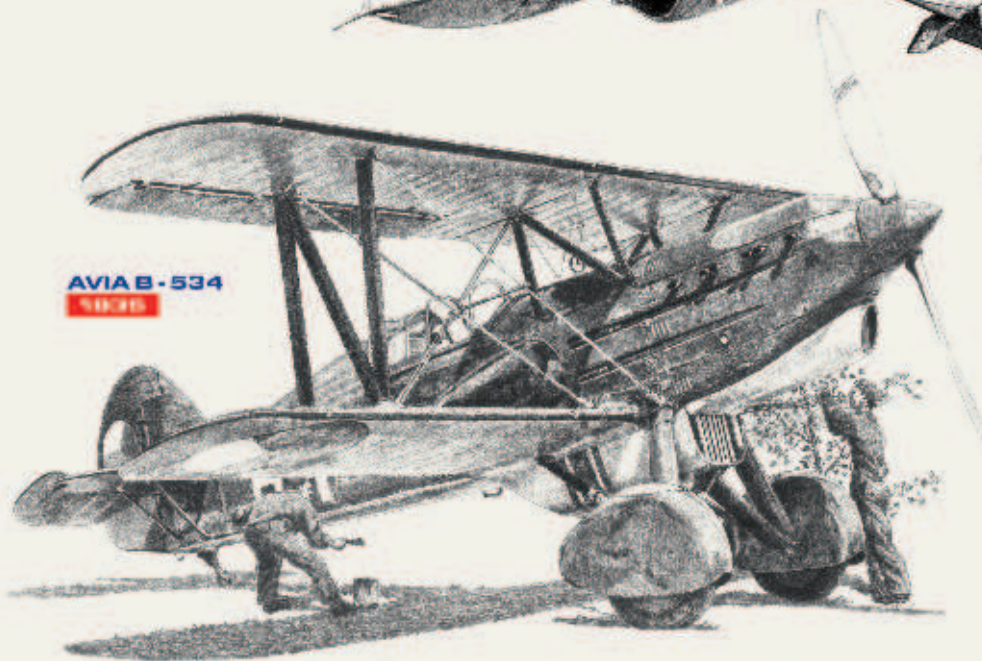


SLĘZSKÉ ZEMSKÉ MUZEUM

JAS 39 GRIPEN  
2005



AVIA B-534  
1938



**15 - 16 SEPTEMBER 2018**  
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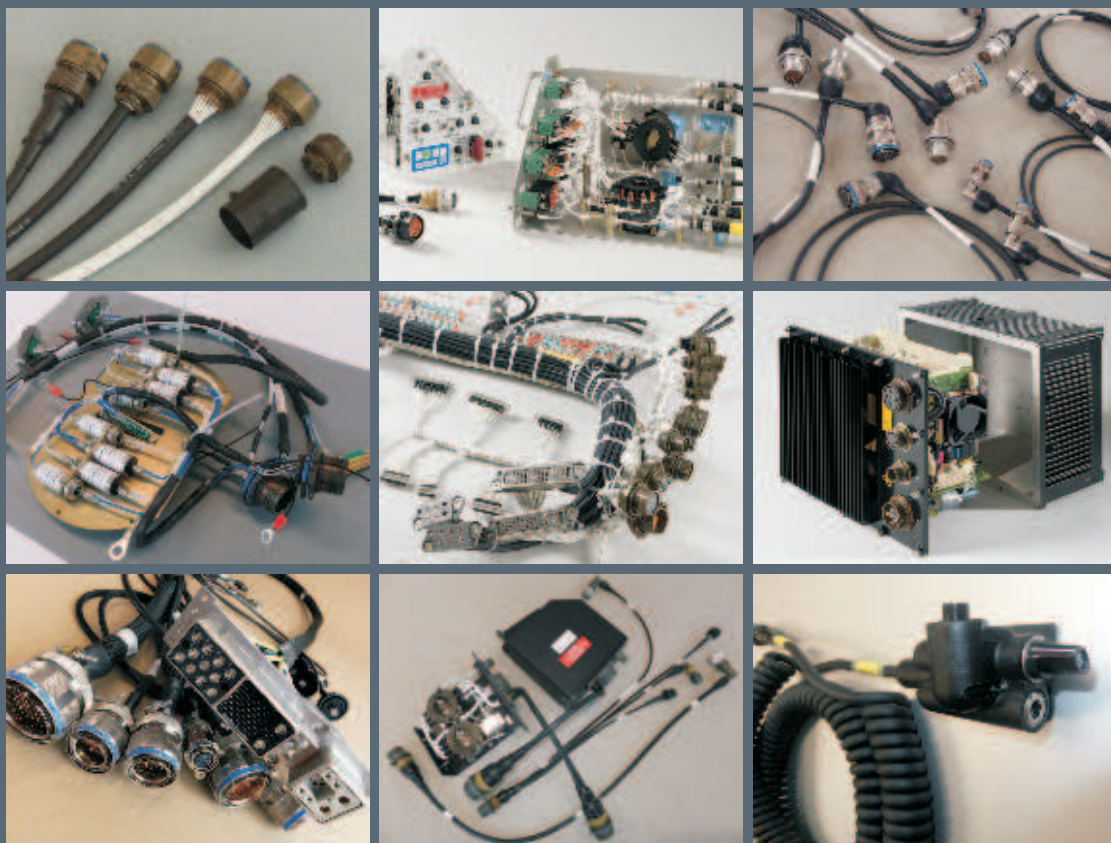


**DEFENCE & AEROSPACE**



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# **INTERCONNECTIONS**



**WIRE HARNESSSES**

**ELECTROMECHANICAL**

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**FIBER OPTICS**

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**COMPONENTS & TOOLS**





## Visit our stand at EUROSATORY Paris 2018 Hall 5A stand J510

REDO is a leading manufacturer of high quality products, particularly of Modular Load Carrying Systems designed for Armed Forces and Law Enforcement. REDO develops and manufactures equipment and gear for the army, special forces, police, firefighters, and security agencies including rucksacks, ballistic vests and bulletproof helmets, bags, vests, combat wear for special army units and SWAT units, cases and packaging for ammunition, rearms, and various equipment, mobile field beds, etc.

### The Active Carbon Bandage is a sterile bandage with activated carbon in micro-filament form with increased absorption induced by an osmotic gradient.


Comprehensibly, it is a bandage based on carbon which, due to its absorption properties, effectively stops bleeding, cleans varicose ulcers, closes wounds, and thus prevents secondary infection of the damaged tissue. It prevents inflammation and alleviates pain. It is also a low-cost cure.



#### It's inventor, Václav Bauer says:

*"It is not a medicament in the true sense of the word:  
My bandage works due to its strong cleaning  
potential. In essence, it is only a bandage,  
but its potency astonishes physicians.  
Everything heals five to eight times more quickly."*

### Contact:

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