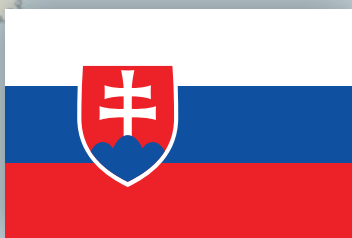




# Security & Defence Technologies Catalogue



## Slovak Republic



## **Security & Defence Technologies Catalogue**

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## BASIC INFORMATION ABOUT THE SLOVAK REPUBLIC

Area: 49,035 sq. km  
Population: 5,459,781 residents  
Capital city: Bratislava  
Official language: Slovak  
EU member country: since 1 May 2004  
NATO member country: since 29 March 2004  
Schengen area member: since 21 December 2007  
Currency: euro, Euro area member since 1 January 2009  
Gross domestic product: 104.57 billion USD  
GDP per capita: 19 156.89 USD  
Membership in international organizations: UN, WTO, EBRD, OECD, UNESCO, CEFTA, IMF, V4 etc.





## Key Figures

<b>Date of establishment:</b> 1 March 2000	<b>Number of members:</b> 58	<b>Total number of employees in member companies:</b> 11 000	<b>Total turnover of member companies:</b> 1.2 billion EUR
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## Standing Expert Committees operating within the Security and Defence Industry Association of the Slovak Republic:





# OPENING SPEECHES



Ladies and gentlemen,

The Security and Defence Industry Association of the Slovak Republic has been the main partner and contact point for cooperation in the field of the Slovak security and defence industry for more than two decades. Its main mission is to support the development of domestic industrial capacities through a constant dialogue with central state administration bodies and other important institutions of the Slovak Republic and its involvement in finding export opportunities for Slovak manufacturers of security and defence equipment and technology.

The long tradition of defence production in our country, the existence of professional human potential and the constant improvement of conditions for the growth of competitiveness and innovation in Slovak companies are the starting points for successful international cooperation in this industry. In times of globalisation on the one hand and growing number of regional conflicts and cyber threats on the other, the security of the state and especially its citizens is of paramount importance. Responsible countries put forth the greatest possible effort to be constantly prepared to deal with security threats. The Security and Defence Industry Association of the Slovak Republic is ready to be a reliable partner in these processes. It provides professional consultations in establishing cooperation with Slovak industrial entities that offer high-quality products, innovative solutions and the ability to adapt to shifting customer expectations.

The Slovak security and defence industry is export-oriented. Its specific structure and range of capacities exceed the demands of the domestic market of a relatively small country such as Slovakia. Therefore, the role of the Association is to support its members in their entry into foreign markets. It presents Slovak manufacturers at international exhibitions, organises presentation days focused on industrial matchmaking, business missions as well as receptions of foreign delegations. The Association also cooperates closely with foreign associations operating in the security and defence industry.

I believe that the Catalogue issued by the Security and Defence Industry Association of the Slovak Republic will provide you with a lot of useful information about the potential of the Slovak security and defence industry and will be a good base for establishing and developing your successful cooperation with Slovak companies. We will be pleased to help you with specific questions and will give you as much information as we can.

Tibor Straka  
President of the Security and Defence Industry Association  
of the Slovak Republic



Dear readers,

For the second year in a row, we have been overcoming with the coronavirus crisis that has a significant impact on our economy, including the defence sector. In all areas, we are learning to live with the consequences of the global pandemic. To a large extent, Covid-19 has affected not only our families and social life, but also our companies and business activities. In addition to the coronavirus disease, Slovak manufacturing companies are also struggling with rising prices of input materials or their shortage on the market. As Deputy Prime Minister and Minister of Economy of the Slovak Republic, I make every effort to ensure that the pandemic measures taken affect the companies as little as possible and thus have the least possible impact on the economy. In this context, all the departments at the Ministry communicate intensively with the business community and professional organisations in order to improve the business environment. Even in this difficult Covid era, the Ministry of Economy has been aiming to support exports, which greatly help the economic growth of Slovak companies. I am aware that the security and defence industry is fighting hard to stay alive in an environment of significant foreign competition. I know that it is not easy, because trade in security and defence products is strictly regulated and subject to several foreign policy or security restrictions. However, I am convinced that together we will be able to convince foreign markets of the high quality of the Slovak security and defence industry products and that new territories will gradually open up for your members. The change in legislation that we are working on together should also contribute to achieving this goal. We are also continuously expanding the functionality of the information system, which has significantly shortened the process of handling applications related to the licensing procedure.

I am very pleased that, despite the pandemic measures taken, we are able to communicate intensively with the Security and Defence Industry Association of the Slovak Republic, because professional discussion is the basic precondition for us at the Ministry to be able to take decisions that will ultimately benefit everyone. I would like to assure you that, if the security and defence industry prepares projects that will bring effective solutions for Slovakia, I will provide them with the necessary support so that they can be implemented. My aim is for the government and the pandemic not to slow down any profitable activities.

Richard Sulík  
Deputy Prime Minister  
and Minister of Economy of the Slovak Republic



Ladies and gentlemen,

I was very pleased to hear from the Security and Defence Industry Association of the Slovak Republic about the preparation of the Security & Defence Technologies Catalogue. The Slovak defence industry has a rich history and I believe this perspective can continue and even grow further. The defence industry requires high technological inputs into research and development, international cooperation and can hardly prosper by only supplying products to its own market for the needs of armed forces. We understand that our market has a limited potential and saturates rather quickly. Moreover, domestic defence production plays an essential role in ensuring defence and security of our country. It does not mean that we satisfy all the needs of our armed forces through our domestic production. That would not be quite realistic. It means that our defence industry shall be able to maintain in the long term the capacity, performance, competitive technological edge and innovative character. We can contribute to this goal through our responsible pro-export policy and cooperation with our NATO and EU partners, using various mutually beneficial programmes of cooperation. That also means that we cannot remain dependent on the foreign production and imports only. This would be an inappropriate planning of our future, which is not in our strategic interest. Strong and confident Slovakia needs effective defence capabilities and its own defence industry.

The Ministry of Foreign and European Affairs of the Slovak Republic plays an important role and has a competence in promoting the interests of our exporters in foreign markets. This Catalogue will serve as a valuable source of information and inspiration for our diplomats in offering our products to foreign markets as well as a useful tool in supporting our exporters in a strong international competition.

In this context, I would like to mention the subject of arms export control policy, which has its specifics, and within which not only national interests, but also internationally agreed obligations and generally respected rules must be thoroughly taken into account. Slovakia's export policy is a responsible one, in accordance with our international obligations, which we have to abide by and respect. Our commitments are well anchored in our values and foreign policy interests. Although we all contribute to the image of our country abroad, the Ministry of Foreign and European Affairs has this special competence and responsibility to guide our efforts in the right direction.

I have strong confidence in human and technological capital of our country and I equally believe in a robust export potential of our defence industry, of which interests our diplomacy will continue to promote.

Ivan Korčok  
Minister of Foreign and European Affairs of the Slovak Republic



Ladies and gentlemen,

It is an honour for me to bring the Catalogue of the Security and Defence Industry Association of the Slovak Republic to the attention of the professional and lay public in Slovakia and abroad.

The vision of the Ministry of Defence of the Slovak Republic under my leadership is a strong, innovative and dynamically growing Slovak security and defence industry. The industry that serves the needs of our country and, in particular, our armed forces. The industry whose products and services are valued by our partners and allies around the world.

This Catalogue shows that we are moving by leaps and bounds on the way to fulfilling this vision. Today, there are dozens of companies in Slovakia whose solutions and technologies are used at home, in EU and NATO countries, as well as far beyond their borders. An important positive trend is that the tradition of heavy machinery production, which we have been developing in Slovakia for decades, has been complemented in recent years by the offer of products and services based on breakthrough digital technologies.

The nature of security challenges in the world is changing and the Ministry of Defence of the Slovak Republic supports the industry's efforts to respond to the challenges of the times through various activities. It is the only way to permanently ensure our own security and also security in the Euro-Atlantic area. It is also the way to increase living standards in Slovakia: it is this industry that has the potential to bring quality jobs in the long run, develop production with high added value and make a significant contribution to the state budget.

Dear readers, in this Catalogue you will find the best of the security and defence industry that we have at home. I would like to thank the Association for compiling this Catalogue and congratulate it on its publication. I wish all those who present themselves in the Catalogue good luck in expanding into foreign markets: you can count on the comprehensive support of the Ministry of Defence of the Slovak Republic.

Jaroslav Nad'  
Minister of Defence of the Slovak Republic



Ladies and gentlemen,

I am pleased to address you on the pages of the Catalogue of the Security and Defence Industry Association of the Slovak Republic. The topic of security is a priority for the Ministry of Interior of the Slovak Republic, not only in a real but also in a virtual space. Today's hybrid threats, which are aimed at destabilising functioning countries and polarising society, pose a huge risk. Therefore, I welcome the fact that the cooperation between the Ministry of Interior of the Slovak Republic and the Security and Defence Industry Association of the Slovak Republic is at an excellent level. I consider the involvement of Slovak companies in procurement to be natural with regard to the strategic interests of our country or increasing employment. An example of such good joint action is the purchase of handgun and rifles.

I am also pleased that the Police Force is actively involved in multilateral meetings and workshops in the field of technical solutions related to artificial intelligence. One of the main objectives of the application of artificial intelligence is to find a balance between respect for fundamental rights and law enforcement needs. In this area, there is definitely still room for improvement and developing cooperation with the Security and Defence Industry Association of the Slovak Republic, and the only possible way is to work together, so I am glad that we are pulling in the same direction. We are constantly forced to take over new measures so that we are always one step ahead of potential threats. I believe that our cooperation will continue and will benefit the whole country.

Roman Mikulec  
Minister of Interior of the Slovak Republic



Dear readers,

I would like to address you on behalf of the Fire and Rescue Corps. The Security and Defence Industry Association of the Slovak Republic has been engaged in research, development and modernisation of security and military equipment and technology for more than 20 years. I would like to point out that research and development in this area is extremely demanding, long-continuing and systematically coordinated so that it is always up-to-date with the current threats and requirements and demands placed on security forces. The development strategy, for example in the production and modernisation of military wheeled vehicles, is also closely linked to our "firefighting" equipment and technology. Many innovative improvements and solutions to problematic components and materials will certainly be beneficial in the future not only to military, but also to safety or rescue equipment and technology.

In conclusion, I would like to express my conviction that, as a national, independent and non-profit association, the Security and Defence Industry Association of the Slovak Republic will continue to represent the interests of the security and defence industry of the Slovak Republic in the future. And thus create even better and internationally recognised conditions for the advancement and development of the security and defence industry not only in Slovakia but also abroad.

I wish you good luck and success in scientific research on the domestic and international scene.

Pavol Mikulášek  
President of the Fire and Rescue Corps



Ladies and gentlemen,

Not even a century has passed since the local arms industry developed to such a level that the then First Republic could boldly talk about self-sufficiency in this sector.

Czechoslovakia combined the knowledge of its engineers, designers and entrepreneurs to create unique products at that time. It is not for nothing that, on the threshold of the Second World War, some of the creations that came off the production lines of the time could be modestly compared even with the equipment of highest quality manufactured in Europe.

Even after the war, production grew slowly. It often adapted to the needs and visions of the new regime and the military pact the regime had eventually joined. The process of destruction was completed by the division of the republic and the wild 1990s after the fall of the former regime.

However, the volatile history is a thing of the past. Today, we can talk with less caution about the revival of the defence and security industry in our region. Despite strong competition, Slovak companies in this segment manage to enter into contractual relationships with the state, but also on the demanding ground of foreign trade.

In the future, a small country such as Slovakia can undoubtedly benefit in this business primarily from consolidating its efforts at home and abroad. Even the smallest players have a chance to present themselves, for example, in the field of information technology, which is expanding at an enormous pace, and such expansion goes hand in hand with the increased need for its protection.

This is helped in particular by the companies' membership in the Security and Defence Industry Association of the Slovak Republic and their participation in the free market of the European Union, the membership of Slovakia in the North Atlantic Alliance and the parallel efforts of the state apparatus to create ideal conditions for the competitiveness of the Slovak Republic with an emphasis on security.

Roman Konečný  
Director of the National Security Authority



Dear readers,

When establishing the Section of Defence Industry Manufacturers of the Slovak Republic within the Slovak Chamber of Commerce and Industry in February 2017, we believed that Slovak defence companies were able to compete with global manufacturers. They have sufficient production capacities, technological equipment, know-how and real professionals.

Many of these companies had been members of the Slovak Chamber of Commerce and Industry (SCCI), so it was natural to offer them a common platform that would make their voices heard. Today we see that their common voice is very strong. Members of the Section of Defence Industry Manufacturers SCCI form a key production platform of the Slovak defence industry, they operate in almost all its subsectors and employ more than 4,000 people.

Almost all countries focus primarily on domestic production when placing army orders, if this is possible in a given segment. Cooperation with the domestic companies in Slovakia is more efficient in terms of spare parts supply, helps the growth of gross domestic product and supports the diversification of the Slovak industry, which is currently significantly linked to automotive production. Equally important is the social effect in the form of maintaining employment, as defence companies are linked to a number of smaller or larger subcontractors.

However, Slovak defence companies have significant export potential. The Slovak Chamber of Commerce and Industry has recently concluded memorandums of cooperation with the Ministry of Foreign and European Affairs and with the Ministry of Defence of the Slovak Republic, so we could be helpful also in obtaining information that could be useful to defence industry manufacturers in achieving their business objectives abroad.

The Slovak Chamber of Commerce and Industry greatly appreciates the cooperation with the Security and Defence Industry Association of the Slovak Republic. Both institutions intend to continue to support their members in the field of security and defence equipment and technology, armaments, services and materials and to this end they signed the Memorandum of Cooperation in July 2021. I believe that by joining our efforts we will be able to take meaningful steps in the coming years, both at home and abroad.

Peter Mihók  
President of the Slovak Chamber of Commerce  
and Industry

**Security and Defence Industry  
Association of the Slovak Republic**



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## Virtual Reality Media, a.s.

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## Zepelin, s.r.o.

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## Zetor Engineering Slovakia a.s.

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## **ZTS-OTS, a.s.**

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## **ZTS – ŠP E C I Á L, a.s.**

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## **ZVS holding, a.s.**

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phone: +421 42 28 55 111  
e-mail: [msm@msm.sk](mailto:msm@msm.sk)  
website: [www.zvsholding.sk](http://www.zvsholding.sk)

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## About Security and Defence Industry Association of the Slovak Republic

The Security and Defence Industry Association of the Slovak Republic was established in 2000 as an interest association of corporate bodies operating in research, development, production, distribution and marketing services of military and security equipment, material and infrastructure. The Association is a non-governmental, independent, non-political, non-profitable and non-trading organisation.

The main activities include:

- Enhancement and protection of business interests of its members in dialogue with the Government of the Slovak Republic, Ministries and other state administration bodies and other national and international institutions including similar foreign associations and arrangement of contacts among Slovak and foreign subjects
- Supporting presentations of production intentions and products as well as involving members of the Association into development and modernization programmes for the Slovak Armed Forces
- Strengthening the export capabilities of its members in the area of defence and security equipment and materials
- Organisational, economic and professional consulting services
- Support and coordination of research, development and testing of military equipment and materials to create environment comparable to the European Union and the NATO Member States
- Enforcement of research and development institutes interests in grants and tenders focusing on research and development of technologies for the production of military equipment and materials
- Organising educational and promotional activities to support the members of the Association

## Partners



Ministry of Defence of the Slovak Republic



Ministry of Economy of the Slovak Republic



Ministry of Foreign and European Affairs  
of the Slovak Republic



Ministry of Interior of the Slovak Republic



National Security Authority



Slovak Chamber of Commerce and Industry



Council of Slovak Exporters



Federation of Mechanical Engineering  
of the Slovak Republic



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Established in 2019

## main activities

3IPK develops software solutions based on blockchain technology for the highly regulated industries such as aerospace or defence industry. 3IPK's blockchain process management solutions enable our customers to become more competitive by reducing overhead costs related to management of complex aerospace processes by delivering powerful blockchain-based solutions allowing for efficient management of deep and wide supply chains, engineering and manufacturing processes as well as quality control.

3IPK develops Product-Centric Blockchain solutions which allows automatic and efficient configuration management for aerospace and defence products across the supply chain. This in turn enables for automation of project and programme management as well as supply chain management and procurement processes reducing process management costs for our customers.

3IPK provides end-to-end digital corporate process management solutions enabled by blockchain technology.

## customers / foreign relations

- ESA: European Space Agency (Europe)
- Airbus (France, Germany, Spain, UK)
- Sogclair Aerospace (France)
- Thales Alenia Space (France)
- SAB Aerospace (Czech Republic)
- HUB71/Gothams (United Arab Emirates)

## business portfolio

- Blockchain software tools for parts, equipment and material Incoming and Outgoing Inspection including First Article Inspections
- Blockchain-augmented software solutions for automated configuration management throughout the full lifecycle of spacecraft, aircraft as well as defence products
- Blockchain-based systems for transparent, automated and efficient digital management of development, engineering, manufacturing and maintenance processes in aerospace and defence industries
- Blockchain-based solutions for traceability and securisation of critical data and demonstration of process compliance for Air Traffic Management and defence applications.



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website: www.aliter.com

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Mlynské nivy 71  
821 05 Bratislava



Established in 2007

## main activities

Aliter Technologies provides integration, development and consulting services in the area of information and communication technologies (ICT). Our areas of expertise:

### ICT & Cloud

Main goal is to deploy information systems with an accent on their reliability, availability, high security and efficient operation in the cloud (public, private) or in the on-premise infrastructure.

### Software Development

Software Development team provides our clients with innovative solutions tailored to their needs in line with current trends and standards. Our primary focus is on web solutions and enterprise systems. We build multi-tenant call centres suited for the most demanding conditions, integration platforms and tools for efficient operation, as well as high-added value private cloud management tools.

### Cyber Security

We offer comprehensive services for the detection, analysis, design, integration and operation of secure information systems tailored to the needs of our clients. Our solutions include extensive and efficient technological processes needed to insure the safety of networks, servers, applications and sensitive data from malicious attacks in various areas. We also carry out complex outsourcing of IT operations and security.

### Special Systems

The Special Systems Division develops and delivers sophisticated technologies to support special communication and information systems for military and non-military crisis management operations. We design solutions for armed forces, law enforcement, fire brigades, rescue teams, special operations forces, civil protection and crisis management personnel, and other components or organizations involved in the tasks of state defence, and missions ensuring the security, rescue and protection of the population.

## certification

- National Secret
- NATO Secret
- EU Secret
- Quality management ISO 9001
- Allied quality management SOŠ AQAP 2110
- IT service management ISO/IEC 20000-1
- Information security management ISO/IEC 27001
- Occupational health and safety management ISO 45001
- Anti-bribery management ISO 37001
- Environmental management ISO 14001

## customers / foreign relations

Our success, among others is the continuously growing number of contracts with NATO agencies as well as deliverables for largest air and defence multinational companies just like Airbus Defence and Space, BAE Systems, Ericsson, General Dynamics and Northrop Grumman. We are a registered producer of NATO. The results of our R&D are our own products that have been deployed under severe conditions in foreign missions or create an integral part of complex solutions just like the NATO AGS.

## business portfolio

Products and solutions are used by international organizations as well as global technology companies and suppliers in the field of security and defence. They are customized for each kind of customer and we can implement them all over the world. The services are based on our years of experience and know-how, which is made up of highly qualified staff.



# The Armed Forces Academy (AFA)

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Established in 2004

## main activities

The Armed Forces Academy (AFA) is a modern internationally recognized military educational and training institution that consists of a professional departments which focus on current requirements of practice and the needs of the Armed Forces of the Slovak Republic. It provides higher education for future officers and lifelong education. The main purpose of AFA is to educate them in a spirit of patriotism and to be characterized by values such as responsibility, honesty and prioritize the interests of the homeland over personal interests.

The Professional Military Education Centre and the AFA Simulation Center play an important role in the growth of Defense personnel by providing training for professional soldiers and course participants from NATO and EU members and partner countries through short-term training courses. In addition to education and training, AFA also focuses on the development of science and research, which focuses on supporting the security and defense of the state and the development of capabilities of the Armed Forces of the Slovak Republic.

## certification

Certificate NO: 7780 / TSC TPX-0150 / TT-ACT0179 /  
Ser: NU - Accredited NATO education and training  
institution for further military education.



## customers / foreign relations

- As for international activities, the AFA focuses on development and deepening of cooperation with military and civilian educational institutions of the NATO member states, the NATO PfP and the EU.
- The AFA personnel participate in the NATO STO panels (NATO Science and Technology Organisation) and deal with the wide range of scientific research activities.
- Since 2016, the AFA has been developing cooperation with the Indiana National Guard (NGI), which supports International Staff Officers' Course (ISOC).
- The bilateral agreements between the AFA and foreign military academies and educational institutions as well as the Erasmus+ partnership agreements contribute to strengthening of cooperation with the foreign academies and universities.

## business portfolio

AOS provides higher education in all three levels of education (bachelor's, engineering / master's and doctoral) in four accredited study programmes:

- National Security and Defence
- Electronic Weapon Systems
- Military Communication and Information Systems
- Weapon systems, Weapons and Components



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Established in 1967, newly formed ltd 2017

## main activities

The main production product of CSM is UDS - UNIVERSAL FINISHING MACHINE in various designs. Self-propelled multi-purpose landscaping machine UDS mounted on automobile chassis. The machine is primarily intended for support of engineer troops and finds its application during natural disasters when there is a need for immediate action to save lives and property. It also has an important role in military deployment in securing technical means and structures supporting the army operation. The technological equipment of CSM Industry Ltd enables to produce various parts such as frames, booms, arms and other for its customers and can provide them with comprehensive services from operations as material preparation to final machining, painting and assembly. A part of the production process is also a separate development design engineering center, in which the production process begins. We provide our services to renowned international companies, to which we supply various components, jigs and assembly units.

## certification

- Quality Management Certificate STN EN ISO 9001:2016,
- Slovak defense standard AQAP 2110:2017
- DIN EN ISO 3834- 2:2005,
- EN 1090-1:2012,
- EN 1090-2:2018.



## customers / foreign relations

- Ministry of Defence of Slovak Republic
- Ministry of Defence and Armed Forces of Czech Republic
- Ministry of Interior (Firefighting) Czech Republic, Slovakia, Ukraine
- Foreign markets for UDS Excavator are Hungary, Poland, Germany, Italy, Serbia, Ukraine, Russia, Belarus, Kazakhstan, India, Brazil, Saudi Arabia, UAE and USA.

## business portfolio

- UDS Universal on chassis TATRA, MAN, IVECO, KAMAZ, URAL, MAZ,
- UDS Defense On chassis TATRA, Rheinmetall
- MAN, Iveco Defense Vehicles,
- Multi-purpose telescopic excavator,
- Armoured multi-purpose telescopic excavator on armoured chassis
- Universal demining machine
- All-terrain vehicles
- UDS Rescue and Firefighting and
- UDS Forestry
- Semi-component area



# DECENT Group, a.s.

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Established in 2015

## main activities

DECENT is one of the first global SaaS blockchain companies, with a proprietary blockchain protocol named DCore.

Founded in 2015, DECENT builds upon a track record of early blockchain innovation with its own platform, DCore, empowering users to rapidly create and migrate business-ready, scalable and decentralized applications.

DECENT is dedicated to building a strong ecosystem of projects to encourage the successful realization of the benefits blockchain has to offer for organizations and customers across multiple industries.

The DECENT Cyber Security team has a rich history in designing, implementing, securing and testing the highest security standard blockchain infrastructure and products. Our services and solutions come with SLA and 24/7 support.

## customers / foreign relations

- ESA: European Space Agency, DCore as a blockchain platform for tracking of logs & records for aerospace components
- SLOVAKIA: LYRA GROUP s.r.o., DCore as a blockchain platform for track and trace of complete supply chain of manufacturing components

## business portfolio

- DCore:  
Launched in 2017, the DCore blockchain protocol written in C++ is a stable, customizable, and cost-effective blockchain platform. DCore provides user-friendly software development tools for dApp developers (supported by many APIs and SDKs) and enterprise applications in distributed networks. Our clients can leverage DCore protocol on cloud or on-premises based solutions to build, host and deploy their own private, public or consortium blockchain. Utilizing 6 years of research & development experience in the blockchain industry we see a potential opportunity in applying this technology also in the defence industry; for example, Identification Friend or Foe (IFF Mode 5) and Mode S industry. Blockchain is being applied to the aviation industry as several airlines and their

partners begin experimenting with the technology to create verified audit trails and streamline frequent flyer points. In both manned and unmanned aviation, DECENT can help to implement blockchain augmented with smart contracts to accurately record aircraft and drone interrogator and transponder data and ensure compliance with the safety standards.

- Digital Proof:  
Application for Intellectual Property Protection help innovators, lawyers and authors claim and protect intellectual property instantly and digitally. Blockchain-based hashing and timestamping make for strong and unalterable evidence, permanent on the blocks. All data and actions can be traced back to its source on blockchain, making digital proof auditable for forensic usage. Data confidentiality is protected using the most advanced encryption, your data is restrictedly accessible to you and your designated users only.
- Humanity Token:  
Platform for transparent and measurable donation distribution and spending. By tracking of donation distribution among recipients blockchain technology guarantees transparent and uncorrupted reputation.



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Established in 2014

## main activities

DefTech was founded in 2014 as an Unmanned Aerial Vehicle (UAV) systems development and manufacturing company. We have soon realized that commercially available components rarely offer all the specific features that our clients demand in their applications.

In response, we have immediately committed on expanding our R&D capabilities to the point where they would allow us to develop fully customizable UAV systems from the ground up, all in-house and without relying on third-party mission-critical components.

As a result of this decision, we have acquired a solid foundation in the fields of electrical, software, mechanical and materials engineering. In 2018 we have decided to bring our innovative design approach into the automotive industry by introducing the DefTech WOLF & HRON armored vehicles.

Within our respective fields, we now have the ability to deliver tailor-made solutions which fit the exact specific needs of our customer's scenarios, without compromises. Whether they require a radio transceiver the size of a sugar cube, or a 15-ton

armored vehicle designed to protect their mission against the adversities it may face.

## certification

- ISO 9001 : 2015
- ISO 14001 : 2015
- ISO / IEC 27001 : 2013
- NCAGE Code – 1513M

## business portfolio

- Armored Vehicles
- Ballistic Armor & Blast Protection
- Through-Wall Imaging Radars
- Unmanned Systems
- Long-range Audio, Video & Data Transceivers
- Specialized Microminiature Electronics
- Electronic Warfare Solutions
- Microwave & RF Systems Design
- Software & Firmware Engineering
- Mixed-Signal PCB Design
- Prototyping & Manufacturing



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Established in 1991



## DELTECH

Deliveries of Electro Technologies

### main activities

DELTECH is made up of a team of specialists who have been creating an ever more modern and safer world for three decades now. We bring solutions in the area of comprehensive high-voltage and low-voltage electro - technologies and technical protection of sites. As a supplier for investment groups, we create optimum technical solutions in the area of carrying out small and medium sized constructions.

#### CRITICAL INFRASTRUCTURE

This segment is one of our most dominant areas of high security and importance in which we operate. During the implementation of the Integrated Security System (ISS), we use state-of-the-art technologies to achieve the required security and protection. ISS is a comprehensive security system that combines personal, technical and organizational elements and measures. It integrates several safety subsystems: PERIMETER, ACCESS CONTROL SYSTEM, INTRUSION ALARM SYSTEM, FIRE DETECTION AND ALARM SYSTEM, CCTV CAMERA SYSTEM. At the beginning we analyse the environment, we continue by elaborating feasibility studies, then we prepare the design documentation. After concluding the contracts, the implementation phase will follow, which ends with the training of service personnel and the inclusion of a new ISS into the service system, performed by our company through 24/7 service dispatching.

#### ELECTRO INSTALLATION

Our team of experts has experience with the design and implementation of high-voltage and low-voltage electrical installations in large and complex projects.

#### We focus on:

- High and low Voltage electrical services for sites and buildings
- Electrical energy sources
- Automation Controls
- Fire - Safety Equipment
- Security, protection of property
- Structured cabling
- Perimeter security protection

#### MAINTENANCE & SERVICING

Care and maintenance are among the most important activities for the proper functioning of all technologies. This is even more true for security technologies, as the safety of property and people depends on them. Systematic inspection, modification, upgrading or replacement of equipment is therefore important.

#### We provide:

- Special inspections and revision
- Warranty and post warranty, operative maintenance
- Reconstruction and modernisation
- Remote assess
- Regular inspection in terms of Slovak Technical Standards and EN standards
- Guaranteed service 24/7 for contractual partners
- Training of operators

We offer complete maintenance services for technologies, warranty and post-warranty service for contractual and non-contractual customers.

### certification

- ISO: 9001 14001 27001, 45000
- NATIONAL SECURITY AUTHORITY: FACILITY SECURITY CLEARANCE CERTIFICATE
- NATIONAL SECURITY AUTHORITY EU & NATO FACILITY SECURITY CLEARANCE CERTIFICATE
- Technical inspection: SPECIAL INSPECTIONS AND REVISION
- Technical inspection: MANUFACTURE OF TECHNICAL ELECTRICAL EQUIPMENT
- Regional presidium of polices forces: TECHNICAL SERVICE
- Transport authority: ASSEMBLY, REPAIRS, MAINTENANCE, RECONSTRUCTIONS, TESTS AND REVISIONS OF DESIGNATED TECHNICAL ELECTRICAL EQUIPMENT
- Transport authority: REVISION OF DESIGNATED TECHNICAL ELECTRICAL EQUIPMENT
- TÜV SÜD Slovakia: SERVICES IN THE MINES



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Elektrotechnický výskumný  
a projektový ústav Nová Dubnica, a.s.

Established in 1968

## main activities

EVPÚ a.s., Nova Dubnica is already more than 50 years specialized in research and development, manufacturing and supply of power electronic equipment, defense systems, control and adjustable circuits, designing and testing. EVPÚ a.s. is the leading company in Slovakia. Our Company mainly develops activities in designing, producing and supplying solutions as an OEM:

### • Fire control systems and control electronic

The efficiency of modern weapon systems, except for the fire power, is dependent on the efficiency of fire control system. The fire control system consists of electronics of fighting vehicles, on which is put the highest demands. Fire control system and main gun stabilization system for modernization of tanks T72, infantry fighting vehicles BMP-1, BMP-2 and OT significantly increase their fighting power. Our solutions are fully integrated into the original vehicle design like MBT, armored personnel carriers, infantry fighting vehicles as well as to mobile and static surveillance and reconnaissance devices. Set of components for anti-aircraft twin gun ZU 23M brings the modernization of automatic control system with a computer, the integrated laser rangefinder, search through the recognition of moving objects, the automatic target tracking and many others. All original components and functions remain functional as a backup mode. EVPÚ also designs and produces light remote controlled weapon stations with gunner sight and machine gun caliber 7,62 mm or 12,7 mm (NATO/

Russian caliber) or grenade launcher AGS-17. Our remote-controlled turret TURRA 30 represents with an integrated automatic 30 mm gun (NATO/Russian caliber), with a 7,62 mm machine gun, smoke grenade launcher, ATGM, gunner and independent commander sight, the highly effective way of elimination of armored vehicles or low-flying objectives up to a distance of 2 500 meters. The systems are remotely controlled and designed for use on wheeled or tracked armored vehicles. Primarily the systems are a part of the battle superstructure of light wheeled armored vehicles designed for completion of fighting and special tasks within the field formation of friendly troops or in depth of the enemy field formation.

### • Components and systems for monitoring and optoelectronics protection

The control and the protection of large areas belong to the challenging safety roles, especially at night and under conditions of bad visibility. The optoelectronic surveillance systems are light modular systems designated for monitoring, detection and visualization of the targets – identification disturbers for a long distance, at day and night and even under bad weather conditions. The optoelectronic surveillance systems are designed for different conditions, according to specific customer's requirements.

### • Deployable optoelectronic systems

The system can be easily moved from one location to another and provides optical guarding in a flat terrain. This guarding can be performed in day/night and under bad weather conditions. System can be used in the open field without any need of the external power supply. Complex control software and hardware is part of the system.

### • Mobile optoelectronic systems

Special surveillance and monitoring vehicle is designed for detection, recognition and identification of persons and vehicles, or other objects in border areas, airports and other high security areas. Modular conception allows day and night functionality even under bad weather conditions.

### • Stationary optoelectronic systems

Systems are based on the modular conception and their main purpose is to optically protect high security areas and property. Optoelectronic systems work 24/7, day and night and also under bad weather conditions.





**EVPŮ<sup>®</sup>**

Elektrotechnický výskumný  
a projektový ústav Nová Dubnica, a.s.

## certification

- ISO/TS 22163:2017
- ISO 9001:2015
- SOŠ AQAP 2110:2010
- ČSN EN ISO 3834-2:2006
- System Qualification Certificate SPIKE LR and SPIKE LR-2 for VMLS

## customers / foreign relations

- TURRA 30 – Slovakia – Slovak Army
- Turret Management Computer for T-72 – Slovakia – Slovak Army
- Turret Management Computer for T-72 – Czech Republic – Czech Army
- Turret Management Computer for T-72 – Middle East
- Turret Management Computer for T-72 – India – Indian Army
- Remote Controlled weapon station ZSRD 07 – Czech Republic – Czech Army
- Remote Controlled weapon station ZSRD 07

- Slovak Republic – Slovak Army
- Remote Controlled weapon station ZSRD 08 – Slovak Republic – Slovak Army
- Components for upgrade of ZU-23 – South East Asia
- Components for upgrade of ZU-23 – Africa
- Stabilized Pan / Tilt Heads for Long range Surveillance system – Europe – Hensoldt

## business portfolio

- Remote Controlled weapon station – TURRA 30
- Remote Controlled weapon station for 7.62mm or 12.7 mm calibre – GLADIUS
- Remote Controlled weapon station for 7.62mm – ZSRD 07
- Turret Management Computer for T-72 – TMC, K1M5
- Components for upgrade of ZU23 – Modernization Kit for ZU-23
- Stabilized Pan / Tilt Heads for Long range Surveillance system – MST01, MST02, MSU01, MSR



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Established in 1994 – in Slovak Republic, 1984 – Mother Company in Norway

## main activities

Company FOSS is designer and manufacturer of Fibre Optic connectivity products, with in-house design team. We are capable of providing Design and Development of Fibre Optic connectivity, sample volume production and also high-volume project deliveries. Portfolio varies from small inside equipment optical cable assemblies to ruggedized harsh environment/industrial assemblies. With strong relationship with suppliers and partners we can support nearly any type of Fibre Optic Cable assemblies in both design/sample phase as well as high volume manufacturing.

## certification

- ISO 9001-2015
- Seikoh Giken OEM certificate
- Reichle & De-Massari OEM certificate
- QPC value added reseller certificate

## customers / foreign relations

- Local Internet Service Providers
- National Telecom and Mobile Operators
- Research institutes and universities
- Local and Foreign Defence and Military companies
- Oil and Gas industry sector

## business portfolio

- Complete portfolio of standard passive fibre optic cable assemblies (patch cords, pigtails, trunks, fanouts)
- Pre-terminated modular solution for data centres based on multifibre MPO/MTP connector
- Modular solution for WDM applications (CWDM, DWDM, ...)
- Industrial and Harsh Environment assemblies for Oil, Gas, Off-shore, and Military applications
- Inside equipment assemblies
- Own designed ODFs and splice/connection boxes



# FREQUENTIS Solutions & Services s. r. o.

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website: www.frequentis.com



Established in 1991

## main activities

### Areas of specialisation:

**FREQUENTIS Solutions & Services s. r. o.**, founded in 1991, is the FREQUENTIS AG subsidiary in Slovakia that supports the Frequentis Group in its mission to make the world a safer place. The Slovak subsidiary operates in areas of research & development, system delivery, consulting & sales, maintenance and other large scale of services.

**FREQUENTIS AG**, headquartered in Vienna, is a global supplier of communication and information systems for control centres with safety-critical tasks. Such 'control centre solutions' are developed and marketed by Frequentis in the business sectors Air Traffic Management (civil and military air traffic control, air defence) and Public Safety & Transport (police, fire brigade, ambulance services, shipping, railways). As a global player, Frequentis operates a worldwide network of branches, subsidiaries, and local representatives in more than 50 countries. Products and solutions from Frequentis can be found in over 40,000 operator working positions and in more than 150 countries.

Frequentis has been providing the **defence market with missions-critical communication, information and surveillance systems** for over seven decades. The fully redundant, highly-available communications framework is used by joint and combined forces in today's command centre operations – be it in the air, at sea, or on land.

### Serving all forces with leading solutions.

Stakeholders across the four domains trust Frequentis to satisfy use cases by equipping them with the right tools for mission-critical operations – from situational awareness to tower automation, surveillance to secure communications and networks. This cross-segment approach enables the Defence organisation to address the market need for interagency collaboration. The offering also includes end-to-end system integration and turnkey delivery capabilities, allowing customers to focus solely on their core mission.

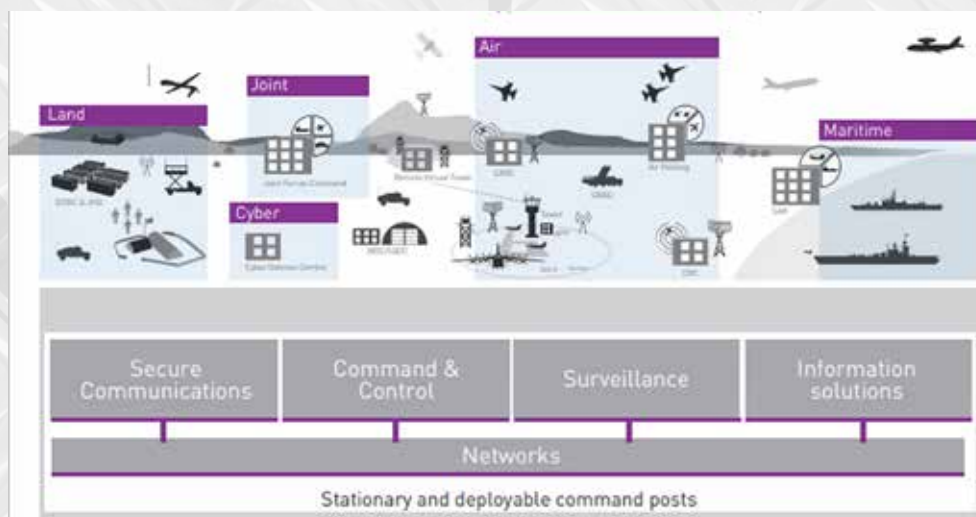
### Network-based, mission-critical command centres.

Providing actionable intelligence that enables faster decision making, the Defence portfolio serves the needs of all forces. As the ecosystem of customers evolves towards secure IP-based technologies, Frequentis leads the way with innovative solutions that ensure network-based capabilities for all mission-critical command centres.

## business portfolio

### Secure communication

When it comes to mission-critical communications, secure voice and data exchange is paramount. Military organisations and civil air authorities worldwide require trustworthy solutions they can rely on during both standard operation, as well as their missions. What is needed is field-proven technology that provides a 24/7, zero-fail availability, while handling multiple security domains. Such products



and solutions must also be interoperable with existing IT infrastructure and legacy systems, while adhering to the latest safety and security standards.

## Networks

The needs of air defence networks go beyond the classic requirements of an air traffic management system. In particular, operators, weapons platforms and other military units need to exchange tactical data securely. The network concept stretches far beyond formal air traffic management or command and control centres. Network Enabled Capabilities are becoming a must-have: modern military engagements and activities demand coordinated and informed decision making based on fast, reliable, usable information and communication systems.

## Remote Tower

Inefficient and insufficient ATC staffing, operations with limited visibility, vulnerabilities of deployable ATC towers and new challenges, such as non-cooperative drones, require modernisation of military air traffic management. In addition, air forces need to embrace innovations driven by increased automation, connectivity and data fusion at air bases. The remote digital tower solution is a flexible and scalable solution that improves efficiency, safety, and ensures mission success. It increases flexibility and situational awareness, while keeping controllers out of harm's way by locating them in secure environments.

## Military Air Traffic Control

Military aviation commands around the world are facing more and more challenging demands associated with military missions, drone operations, increasingly stringent regulations and rising cost pressures. Improving the situational awareness is a crucial task for any ATC officer looking to ensure safety in air traffic control. Frequentis offers wide-ranging ATC

communication and automation solutions, which can be highly integrated, as well as completely modular. This enables military aviation commands to address their requirements for system upgrades or replacement while keeping the focus on mission fulfilment and safety assurance.

## Surveillance

Besides communications and navigation, surveillance lies at the heart of air traffic management. The aim of all surveillance infrastructure is the provision of safe, efficient and cost-effective air navigation services. Optimised surveillance infrastructure allows routes to be brought closer together resulting in an increase of capacity. Frequentis Comsoft - the competence centre for surveillance within the Frequentis Group - looks back on a long history of experience with the supply of innovative surveillance solutions. The product portfolio includes ADS-B sensors, multilateration systems, surveillance data distribution and processing systems, and surveillance displays.

## Aeronautical Information Management (AIM)

The Frequentis group's aeronautical information management (AIM) solution is a complete system landscape of modular components that provide full interoperability along the digital aeronautical data chain. Consistent with the latest AIM standards, as outlined in ICAO Annexes and Manuals, as well as with European and national regulations, we created these solutions to enable a smooth and cost-effective migration from AIS to AIM. The modular system design facilitates a step-by-step replacement of existing AIS infrastructure.

## Aeronautical Message Handling Systems (AMHS)

Connecting more than 50% of the ATM communication centres around the world with AMHS and through its instrumental contribution to the development of SWIM,



such as the involvement in SESAR, Frequentis provides leading-edge ATM communication and information management solutions and is able to safely manage the evolution from AMHS to SWIM. The offering covers products and services which are SWIM-ready today.

## **Situational Awareness**

Today's military forces face constantly changing environments. To safeguard troops and their physical assets, these organisations must be able to react at a moment's notice, which is not possible without effective situational awareness, cooperation and collaboration. Aside from working across different military commands, modern forces recognise the need to share information with non-military organisations including public safety, civil aviation, maritime organisations, as well as governmental and non-governmental organisations (NGOs).

## **certification**

- Approval for the use of aeronautical ground equipment in military aviation (Military Aviation Authority), type of approval: Č./No: ÚVL – 9.3.3. – 43/2021
- ISO 27001 : 2013 Information Security Management System (FRQ AG)
- ISO 9001 – 2015 Quality Management System (complying with requirements of Standards)
- ISO 14001 . 2015 Environmental Management System (FRQ AG)

Frequentis currently holds several dozens of patents, such as:

- Method and apparatus for the transmission of confidential and non-confidential data,
- Method for production and preparation of security-critical information,
- Method for transferring Voice Communication.

## **Selected references – defence communication and information solutions**

### **U.S. Army, USA**

Part of a multi-year agreement with the Federal Aviation Administration (FAA) under the IVSR contract. Over 20 sites at critical U.S. Army Aviation bases have been equipped with the defence VCS, including Air Information Centers (AIC), Army Radar Approach Control Centers (ARAC), Army ATC Tower (ATCT).

### **U.S. Navy Shipboard ATC, USA**

Single provider of the Shipboard ATC Control (SATCC) system to the U. S. Navy aircraft carriers and

amphibious helicopter fleet. Successfully tested and certified defence voice communication system (VCS) to most stringent shipboard ruggedisation standards.

### **Mindefensa, Colombia**

First nationwide air defence network for Joint Forces (Army, Air Force, Navy). The largest IP-based air defence network in the nation's history has a decentralised architecture, boasts synchronised recording of voice, video and radar, as well as communication networked via landline, VSAT and microwave.

### **Ministry of Defence, United Kingdom**

All VCS requirements for the Marshall programme in order to modernise locations in the UK and overseas – including airfields and ranges – and enable long-term, safe operational of all main MoD bases, airfields, and air weapon ranges.

### **Bundeswehr, Germany**

Bundeswehr has been using Frequentis systems for military ATC, air defence, search and rescue task and missions. The National Air Policing Centre uses the company's Air Policing solution based on its incident management system for multi-agency collaboration (Air Force, Police, Public Transport). A customer-tailored-VCS provides all military ATC services at 20 German military airfields and two mobile towers.

### **Armed Forces, Austria**

Frequentis delivered the ground-air-ground communication system with RED/BLACK separation to two fixed Military Control Centres, one deployable and all remote radio sites, while also supplying communication systems to all military airbases nationwide and providing and integrating systems in the control tower of the main airbase.

### **Slovak Air Force**

Extensive modernisation programme, providing Slovak Air Force with NATO compliant ground-to-ground and ground-to-air communication.



# HANSEATIC PROJEKT s.r.o.

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Established in 2017

## main activities

HANSEATIC provides to customers forwarding services, airfreight, seafreight, road transport, railway, project transports. Part of services is arranging insurance, customs services. HANSEATIC provides also tailor made packaging, warehousing in own warehouses.

## certification

IATA Dangerous Goods

## customers / foreign relations

HANSEATIC has a vast network of forwarding partners worldwide, with focus mainly on sea freight, airfreight

and project transports. HANSEATIC is member of networks of forwarders which cover majority of world: The Cooperative Logistics Network, CLC Projects Network. HANSEATIC provides forwarding services for general cargo as well as for dangerous goods.

## business portfolio

- Forwarding
- Sea freight
- Air freight
- Road transport
- Warehousing
- Packaging services



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Production facilities: IPM Industries, s.r.o. areal PPS Group 1718, Detva 962 12

## main activities

IPM Industries, Ltd. is private Slovak company focusing on prototypes production and production of small and mid-sizes series of vehicles and assemblies, special vehicles modification, production of the customized shelters and containers, military vehicles service and logistic support. IPM Industries, Ltd. offers a production of spare parts for military vehicles (BMP1, BMP2, T-55, OT-62 Topas etc.), civil engineering, steel construction production, consultancy services, trade with special and defense material, export/import services.

## certification

NATO producer code - NCAGE 1455M  
ISO 9001:2019 certificate  
AQAP2120:2019 certificate  
Company security clearance certificate - class "confidential"  
License of trading with military material – no. PO3/2021/1050

## customers / foreign relations

Official distributor for DYNASAFE for Slovak and Czech Republic  
Official industrial partner for C.E.S Advanced Composite Products for Slovakia and Czech Republic  
Official partner for AGP Group for Slovakia and Czech Republic  
Official distributor for VALLON GmbH for Slovak Republic



## business portfolio

- complete prototype production, small series and mid-sizes series of vehicles and assemblies
- special vehicles modification and modernisation
- production of the customized shelter and containers
- military vehicles service and logistic support
- production of spare parts for military vehicles (BMP1, BMP2, T-55, OT-62 Topas, etc.)
- civil engineering and steel construction production
- consultancy services
- trade with special and defence material
- export/import services



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website: www.jalog.sk



Established in 2020

## main activities

Providing of complex freight forwarding services for general cargo, project cargo and Defense Industry conventional products of all kinds.

## business portfolio

- Freight forwarding by all modes of transport (airfreight, ocean freight, inland transport)
- Advisory support beginning from contract planning initial period towards the efficient and on time goods delivery
- Carriers chartering for defense industry goods, forbidden cargo included
- Dangerous goods transportation
- Packaging and labeling
- Cargo insurance
- Transit permits arrangements
- Cargo protection with on route escort services
- Support by sufficient agents worldwide network and partners in more than 100 countries
- Exhibition cargo forwarding with ATA carnets
- Major worldwide destinations: Europe, Middle East, Far East, Afrika, North America...



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## KERAMETAL

Established in 1969

## main activities

Since 1994 the company is active in the defence segment.  
The portfolio includes products that were engineered, developed and produced in Slovakia:  
ALIGATOR, TATRAPAN, ZUZANA, TALET.

## certification

NCAGE 1271M

## customers / foreign relations

Czech Republic, Indonesia, Malaysia, Vietnam, India, Sri Lanka, Pakistan, Kazakhstan, Iran, Iraq, Kuwait, UEA, Turkey, Greece, Cyprus, Egypt, Argentina, Peru, Chile, Bolivia, Columbia, Cuba, Austria, Slovenia, France, Germany, Finland, Denmark, South Africa, Saudi Arabia and Canada.

## business portfolio

KERAMETAL develops and delivers products for domestic and foreign armed forces:

- Light Weight Armoured Vehicle ALIGATOR 4x4, in various modifications.
- Complete Swimming Drive System for Amphibious Vehicles.
- Amphibious Armoured Vehicle ALIGATOR 4x4, Master II, A1254.
- 60, 80 and 120mm mortars and ammunition.
- 120mm and 155mm ammunition.
- 155mm Self Propelled Howitzer ZUZANA, wheeled and tracked versions.
- Aircraft Hauler TALET T30 - towing tractor designed for towing and push-back of aircrafts with total weight up to 50.000kg.
- TATRAPAN - Armoured command and staff all-terrain vehicle.
- Artillery Fire Control Systems.
- MAR-Multipurpose Ballistic Computer.
- Modernisation of 152mm DANA howitzers.
- KERAMETAL is also active in the segment of refractory materials, minerals and ores.



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Established in 1953

## main activities

KONŠTRUKTA – Defence, a.s., operating under control of DMD GROUP, a. s., is primarily Design, Development & Testing Authority dealing with defence oriented materiel. Gradually and systematically it has been extending its operation into area of production, repair, and maintenance processes of military equipment in order to provide excellent services to the Armed Forces demands worldwide.

## business portfolio

- Family of 155mm 52cal. Self-Propelled Artillery Systems in variants: ZUZANA 2 and EVA 6x6 or 8x8
- Artillery Command and Control Systems
- Design, Development and Manufacture of variety of weapon systems, electronics and control systems
- Modernization, Upgrade Programmes, Maintenance and Repairs of equipment operated by Armed Forces
- Services of Specialized Testing Performance (mechanical, environmental, climatic and shooting testing, weapon and ammunition testing, CE certification for pyrotechnical articles and explosives for civilian usage etc.)
- Extension of Ammunition Service Life



# Letecké opravovne Trenčín, a.s.

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Established in 1949

## main activities

LOTN is a traditional aircraft Repair, Maintenance and Overhaul (MRO) company that has been in the market since 1949. Throughout its operation the company has served a number of Air Forces worldwide and overhauled hundreds of both fixed-wing and rotary-wing aircraft of multiple OEM platforms. Some of the primary aircraft types serviced by LOTN include Mi-8/17 family of multirole transport helicopters; L-39 multirole subsonic trainer jet aircraft; and L-410 short-range twin-engine turboprop transport aircraft.

Following major aircraft fleets modernization programs currently undertaken by the Slovak Ministry of Defense, LOTN is the designated MRO partner to work with Sikorsky and Lockheed Martin to provide maintenance, technical and logistics support services for UH-60M Black Hawk helicopters and F-16 BLOCK 70 fighter aircraft acquired by the Slovak Air Force. Through these programs LOTN is extending its already

ample capabilities that will benefit not only the Slovak Air Force but also other operators of these aircraft platforms in the EU and NATO.

## certification

LOTN is duly certified EMAR 145 and PART 145 MRO by the Slovak Military Aviation Authority (MAA) and Civil Aviation Authority (CAA) respectively. In addition, the company holds ISO/AQAP Quality Assurance certificates and a NATO Facility Security Clearance certificate.

## business portfolio

Supported aircraft platforms:

- Mi – 8/17 multi-purpose transport helicopter
- UH-60M multi-purpose transport helicopter
- L-39 multi-purpose training jet aircraft
- F-16 Block 70 fighter
- L-410 multi-purpose transport aircraft



# LYNX – spoločnosť s ručením obmedzeným Košice

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website: www.lynx.sk



Established in 1991

## main activities

LYNX – spoločnosť s ručením obmedzeným Košice is among longest present Slovak companies. It has operated on the market since 1991. Through these years it has stabilized its product portfolio, solidified its market position and profiled itself as enterprise providing top-class services for its clients in area of:

- Complex Security Solutions
- Content analytics
- Emergency and crisis management
- Simulations and trainings
- System integration and infrastructure
- Custom development

### Complex Security Solutions

We perceive security within any organization as a comprehensive framework that begins with an appropriate strategy, for which we provide the following services:

1. Analysis, assessments and audits
2. Security projects
3. Security policy documents
4. GDPR and ISO compliance
5. Methodological assistance
6. Consulting and support services during implementation of the documents

We look at the security of the organization in terms of protection of all perimeters like ground, air and cyber perimeter. We build specialized or fully integrated command and control centers like:

1. Physical and building security command and control center
2. Anti-unmanned aerial systems (Anti-UAS) command and control center
3. Cyber security operations center

We implement various security solutions for each type of perimeters:

Physical and building security

1. IP camera systems
2. Advanced video analytics systems for various tasks
3. Detection and sensor systems
4. Alarm systems
5. Access control systems

### Anti-unmanned aerial systems

Together with our partner Teamsales s.r.o. we provide complex portfolio of detection and defense solutions.

### Cyber security

Cyber security is one of our key domains. We provide various solutions and services like:

1. Corporate IT Data Centers and Private Cloud Solutions Development
  - Protection of target infrastructure from sophisticated Internet attacks
  - Segmentation of physical, virtual and cloud infrastructures
  - Central access control
  - Secure remote access (IPsec / SSL VPN, VDI or WiFi)
  - Mobile access
2. Processing of sensitive information infrastructure development
  - Authentication and control access
  - Protection of end-point devices
  - End to End Encryption
3. Various cyber security solutions like:
  - Protection against viruses and spam
  - Protection against malware
  - Protection against running unauthorized code or applications
  - Protection against unauthorized configuration change
  - Monitor and block suspicious activities on the system (HIPS)
  - ... and many other solutions

### Content analytics

The volume and diversity of customer digitized data is growing dramatically, but the processing of these data is lagging behind the options that standard information technology provides. For our customers we supply products, which are able to process and evaluate various data formats (text, video, pictures, sound etc), data from a variety source and the Internet. For a big data processing and its analytical load, we set up and deploy products, which automatically extract information from the data provided along with its automatic valuation according to specific customer needs and requirements. For our solution, we are preparing recommended evaluation data set also, based on the areas of customer's action on and customer's market specifics. Part of the solution is creation and the evaluation of the information and the social networking links with a focus on customer's issues and requirements. The user can define the statistical data, analytical or predictive reports to support your decision making.

## Emergency and crisis management

In case of emergency and crisis management we focus on:

1. Building of crisis and emergency management command and control centers
2. Development and implementation of emergency communication systems
3. Simulations and trainings (see more details below)

With our experience with building the command and control centers, system integration, secure IT infrastructure, secure communication and custom development we can provide or participate on national, regional, municipal or corporate emergency management projects.

## Simulations and trainings

Simulation technology is one of our most prominent areas of expertise. We offer various types of training and simulation solutions for better managing of many types of situations. There is much long-year experience employed when supporting CAX-type military exercise, including newest knowledge and technologies in process, but also new digital terrain preparation and expanding simulations systems capabilities.

Selected training and simulations solutions:

1. Crisis management
2. Simulation models for chemical of radioactive contamination, flooding, traffic accidents etc.
3. Crowd behaviors
4. Fire spreading, firefighting, water resupply...
5. Control Tower Simulator
6. Constructive, live and virtual simulation systems
7. Shooting ranges – live, virtual, hybrid

## System integration and infrastructure

We build on innovative approaches and advanced integration platforms. For developing proposals for integration's architecture, we are looking at technical and domain specificities. A concrete proposal of integration's architecture corresponds to the specificities of both technical as well as domain, at the same time the architecture's complex solutions based on the principles of service-oriented Architecture service-oriented (SOA) or architecture managed events (EDA).

## Custom development

As a guarantee for customer expectations to be met as closely as possible we place emphasis on agile software solutions development. Enclosing customer in this process is a necessity. We are trying to create an easily understandable analytical outputs for the customer. We place emphasis on making prototypes of solutions early for getting feedback. We rely on high-quality team of experienced architects, analysts and developers, who are able to transform client ideas into solutions and cover the entire software development process. We emphasize not only their technical skills, but also domain knowledge and ability to quickly understand and delve into specialized domain issues.

## certification

- Certificate of Quality management systems STN EN ISO 9001:2016
- Certificate of Quality management system in projects STN EN ISO 10006:2017
- Certificate of Environmental management systems STN EN ISO 14001:2016
- Certificate of IT Service management system ISO/IEC 20000-1:2018
- Certificate of Business continuity management system EN ISO 22301:2019
- Certificate of Information security management systems STN ISO/IEC 27001:2014
- Certificate of Occupational health and safety management systems STN ISO 45001:2019



# Matador Industries, a.s.

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Established in 1995

## main activities

We are a mechanical engineering company, which provides a wide array of manufacturing services. These consist of accurate CNC machining, elaborate development and engineering supported by high qualitative standards. We are well established in the field of machining, providing boring, milling or turning services. The modern machine park in the hands of our experienced employees allows us to handle projects from various materials with complex shapes and medium to large sizes.

## certification

ISO 9001  
AQAP 2110  
ISO 3834-2  
EN 1090-2  
ISO 14001  
VDA 6.4

## customers / foreign relations

Hungary – Mediso – Healthcare Industry  
Slovakia – KONŠTRUKTA – Defence, a.s. – Defense Industry  
Germany – Krones – Food Industry  
Germany – Continental – Tyre Industry  
Germany – Reifenhäuser – Nonwoven Industry

## business portfolio

- Production capacities
- R&D Services
- Material machining
- Welded assemblies
- Cutting, Turning
- CNC milling
- Grinding
- Sandblasting
- Installation & assembly
- 3D measuring
- Surface treatment
- Project management



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Established in 1993

## main activities

MOLPIR has been involved in the development, manufacture, supply, installation and service of air conditioning and heating for various types of vehicles since 1993. With specialization to air treatment for commercial and defence mobile and stationary equipment MOLPIR is a recognized expert in the field of collective protection of persons, where it offers a wide range of highly sophisticated devices for collective protection against chemical, biological and radioactive substances ensuring comfortable and safe stay of persons in hermetic space of the vehicle. Thanks to qualification and security approvals of its experts, MOLPIR is capable to design&develop, verify and produce final products in accordance with applicable standards and regulations AECTP, MIL-STD, AEP, STANAG, ČOS etc.

## customers / foreign relations

- Vojenský výzkumný ústav s.p.
- KONŠTRUKTA – Defence, a.s.
- Tatra Defence Vehicle a.s.
- MSM LAND SYSTEMS s.r.o.
- Zetor Engineering, s.r.o.
- TATRA TRUCKS a.s.
- Vojenský opravárenský podnik s.p.
- Hasičský záchranný sbor ČR
- MATADOR Industries, a.s.
- TALOSA s.r.o.
- ERA a.s.
- CSM Industry s.r.o.

- Pavelka – kontejnery s.r.o.
- DefTech s.r.o.
- Excalibur Army spol. s r. o.
- Zepelin, s.r.o.
- SVOS spol. s r.o.

## business portfolio

- Special thermal & CBRN applications
- R&D Services
- Complex design & calculation of thermal characteristics and capacity of the application
- Production, supply, assembly & installation
- Aftersales services & regular inspections
- Sheet metal processing – Laser cutting & CNC bending
- Testing & Certification
- Project management



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Established in 2012

### main activities

MSM GROUP is a leading global manufacturer of artillery ammunition, covering subsidiaries with a portfolio in the segment of the defense and civil engineering industries. The goal of the group is the strategic management of subsidiaries to effectively obtain and manage orders within their offer and to deliver reliable and top products and services to their customers. The main portfolio of companies belonging to the group covers the entire life cycle of ammunition, production of medium and large-caliber ammunition (including ammunition for tanks, artillery and mortars and rocket launchers with the flagship 155 mm artillery ammunition family), radio navigation systems for airports, the production of special custom containers, mobile and air traffic control towers.



### certification

ISO and AQAP certificates for all companies within the Group

### business portfolio

- 155 mm artillery ammunition
- medium caliber ammunition
- mortar ammunition families
- artillery ammunition
- tank ammunition
- rockets
- impact fuzes
- ammunition components
- entire life cycle of ammunition
- ERA – Explosive Reactive Armory
- military shelters/containers
- containers for firefighters
- power sources



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Established in 2001

## main activities

The company MSM LAND SYSTEMS s.r.o. is a manufacturing and repair company that specializes in repairs of military tracked and wheeled equipment for state forces (army, police, fire and rescue services), modernization of military and special vehicles, engine repairs, sale of spare parts and the production of ISO 1C series mobile containers. The company is also an authorized service of TATRA TRUCKS, a.s. In the field of civil production, the company focuses on the production of special containers, special-purpose superstructures, repairs and inspections of flow meters for tank vehicles, flow meters of all types, filters, monoblocks, pumps and separators, verification of all type-approved flow meters in authorized testing laboratories.

## certification

- AQAP 2110:2017
- ISO/IEC 27001:2013
- EN ISO 9001:2015
- EN ISO 14001:2015
- ISO 45001:2018
- certification level CL1 according to EN 15085-2
- certificate for vehicle service and sale of original TATRA parts

## customers / foreign relations

MSM LAND SYSTEMS s.r.o. is active in a wide range of activities on domestic and international markets. The key services are:

- Modernization of tracked vehicles BVP
- Repairs of tank vehicles for the Ministry of Defense of the Slovak Republic
- Production and delivery "Prefabricated hall ÚT 26x36 including technology", option 3 pcs for Czech MoD
- Modernization of DANA M1 chassis GM 568, GM 578, BM-21 and RM-70 M1
- Repairs of tracked vehicles BVP-1, 2 for REAL TRADE PRAGUE
- Repairs of belt technology for the Ministry of Defense of the Slovak Republic
- BVP-VPV tracked vehicle repairs for EXCALIBUR ARMY
- Production and delivery of 26 chassis for special off-road vehicles
- Alligator Master I - production of 54 pcs for MOD Slovakia and MOI - Police
- Mobile shelter military base - production for MOD

Slovakia and also for MOD Czech Republic - 65 types more than 300 pcs for Czech Republic and more than 1000 pcs for MOD Slovakia (in 2004 - 2013)

- Hatches and rear doors of Patria vehicles - production more than 100 sets (in 2007-2009)
- DEKVOZ (decontamination vehicle for battle group) - production of 4 pcs for MOD Slovakia (in 2008-2009)
- Production of special Tatra vehicles for MOD Slovakia - 45 pcs (in 2014-2015)
- Howitzer Dana M1 - production of 36 pcs for Elbit (in 2016-2018)
- Rocket launcher RM-70 M1 - production of 18 pcs for Elbit (in 2016-2018)
- Modernization of BMP-1 - production of 35 pcs for MOD Slovakia (in 2016-2019) ZU-23-2, ZU-23-4
- Howitzer Zuzana 2 - production of complete chassis for MOD Slovakia - 25 pcs (in 2020-2022)
- Sales of military wheeled and tracked vehicles and spare parts
- Maintenance and repairs of military vehicles (PANDUR, T-55, T-72, GM 568, 578, BMP 1 a BMP 2...)
- Field hospital and application of solar energy
- Water treatment plant
- Production of military vehicles and their spare parts
- Research & development
- Expedition of vehicles and spare parts
- Servicing at customers' premises
- Environmental-aware disposal of equipment

## business portfolio

- Production and delivery of mainly TATRA vehicles and chassis of different military types (8x8, 6x6, 4x4)
- Wheeled IFV 8x8, 6x6 and 4x4
- More than 65 types of ISO 1C Containers
- Field hospitals
- Repairs and modernization of different military tracked and wheeled equipment



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## NG AVIATION

Established in 2016

## main activities

Comprehensive software solution for aeronautical information digitization and data exchange among key aviation stakeholders and civil / military aeronautical information exchange in native AIXM 5.1 data format.

## certification

The solutions presented are a clear and uncompromising response to the legislative framework set forward and created in connection with the transformation of aeronautical information services into aeronautical data management not only at the ICAO level and the transformation of Appendix 15 but also the European Union and its regulations 2018/1139, 139/2014, 73/2010 and later 2017/469 evaluating them in the prism of airport operators. As such the processes support and are certified by ISO: 9001:2015 and ISO: 14001:2015.

The presented solution offers an answer for several problem areas of demonstrating compliance with several regulatory requirements, which are also imposed on the airport and airspace operators. However, the synergistic effect causes direct process optimization, raising general awareness of the state and critical areas of airport infrastructure and obstacles in and around.

Finally, the simplification of the entire chain of life of aeronautical information from its creation, quality control, verification, distribution, to the means of suitable presentation for use at the end-user, thus clearly contributing to increasing the level of operational safety (aeronautical) of aviation and airport operations.

Currently used single orientated solutions in ANSP operation, airport operation, maintenance, strategic development and communication with air traffic service providers, supervisors and, last but not least, airport users themselves, NG Aviation integrates and offers in one comprehensive solution.

## customers / foreign relations

Since its establishment, NG Aviation has put an emphasis on good collaboration with the international community and its partners. Some of the projects are mentioned below.

- Official Speaker for ICAO Electronic Obstacle Data
- Official Speaker for ICAO AIS to AIM Transition
- EUROCONTROL - Digital Airport Guidelines
- EUROCONTROL - Advanced Flexible Use of Airspace
- EUROCONTROL - Airspace Working Group Participant
- NASA - Ames Research Center Cooperation
- NATO (STANAG) - Civil / Military Data Exchange
- ESA - Smart Airport Project
- ESA - Use of GNSS Data in Aviation
- OGC - Aviation & Unmanned System Working Group
- OCG – Aviation API Data Fusion Services
- GROUP ADP – NG-AIME system implementation at Charles de Gaul and Paris Orly International Airports
- EANS – NG-AIME system implementation at Estonian Air Navigation Services
- DANS – NG-AIME one year Trial implementation at Dubai Air Navigation Services
- MOLDATSA – NG-AIME six month Trial implementation at Moldova Air Navigation Services



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phone: +421 903 193 798  
e-mail: novafenz@plotynovafenz.sk  
website: highsecurityproducts.sk



Established in 2008

## main activities

NOVAFENZ s.r.o. – High Security Products, is the general representative of Perimeter Protection Group in the Slovak Republic. PPG's history dates back more than 65 years (to 1951) and it is a market leader in perimeter protection solutions for strategic and critical infrastructure around the world. Our portfolio includes products with the highest degree of safety, such as anti vehicle mitigation gates, wedge barriers, bollards, road blockers, barriers.

Part of our activities is also the provision of information in the form of presentation, consultation and training, not only about the process of integrating such devices into new, but also existing projects to clients who are interested in learning about such devices.

## certification

Company: EN ISO 9001:2015, certificate of National Security Authority (NBÚ)

Products: IWA 14-1, PAS 68, ASTM F2656-07

## customers / foreign relations

Slovnaft, a.s., Ministry of Interior of the Slovak Republic, Jaguar Land Rover Nitra, Česká zbrojovka.

## business portfolio

- Internationally crash rated and certified gates
- Internationally crash rated and certified barriers
- Internationally crash rated and certified bollards
- Fences, security fences and accessories



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010 08 Žilina  
Slovak Republic

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e-mail: info.zilina@rayservice.com  
website: www.rayservice.com



Established in 2018

## main activities

Ray Service is an innovative manufacturing and trading company providing outstanding solutions in cable harnesses, electromechanical assemblies, electronic equipment and cable components for a wide range of defence and Aviation customers. Our company is a reputable system integrator of many world manufacturers of cable components – such as TE Connectivity, ITT Cannon, Habia Cable, Positronic, Brady, Kissling and others. The company has been successful and proved reliable in the highly demanding military, aerospace and industrial technology markets. On the Slovak market it is now significantly involved in the programs of development and modernization of military equipment of the Slovak Army.

## certification

CSN EN ISO 140001:2016  
POA CZ.21G.0044  
AS 9100, Revision D  
COS 051672 (AQAP 2110)  
VG 96927-2  
EN ISO 900001:2015  
IEC 61340-5-1

## customers / foreign relations

Kraus-Maffei Wegmann, Rheinmetall Defence, John Cockerill Defence and others

## business portfolio

- Engineering and production of cable harnesses and electromechanical assemblies
- System integrator of cable components
- Mil Standard Cable Harnesses
- Electrical Boxes
- Driver Panels
- Control Panels
- APU
- Testers
- Fire Extinguishing System
- Custom Products
- Interconnection Cables
- Engine Harnesses
- Distribution of Connectors and Adapters, Wires and Cables, Harness Protection, Insulation Materials, Moulded Parts and Adhesives, Crimping, Identification Labeling Products, Die-cast Enclosures, Tools



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e-mail: office@raytech-group.com  
website: www.raytech-group.com



Established in 1992

## main activities

The Raytech Group consists of international production and trading companies providing comprehensive solutions in manufacturing of complete electrical systems and distribution of wire harness materials and electric components. Our products and production range is widely expanded within the field of electro mechanical and electro pneumatic architecture of vehicles. Our core business used to be and still is cable harnesses - regardless if they are engineered for your new project or if they are thought to be retro fit. We evolved to battle panels, connectors, wires in composites and aluminium casting as well as central tire inflation system, LED vehicle lighting, vehicle internal glass cockpits with integrated software are just a tiny glimpse into our portfolio. Most certainly world wide tech support is regarded as part of our services. Therefore vehicle integration is offered either by our team directly or through our global operational network. Wherever this planet we are required. With decades of experience in military, naval and aerospace – backed up by a 6,000m<sup>2</sup> warehouse and in-house connector assembling line – Raytech offers expertise in engineering and high class products.

Raytech is a worldwide well established and known supplier to customers as for example Kerametal, Rheinmetall Military Vehicles, General Dynamics ELS, BAE Systems Hägglunds, Thales, ST Engineering, KMW, Otokar, FNSS, RUAG, Mercedes-Benz Defence Vehicles, CNHi and IVECO. Raytech — your partner for efficiency.

Before



**Optimized**  
**Save up to 60%**  
**volume and weight!**

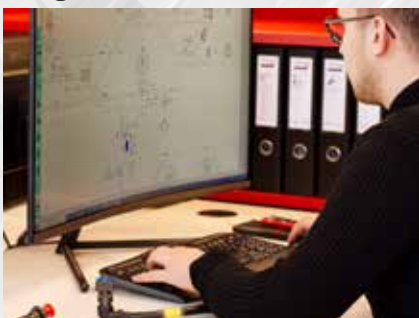


higher flexibility  
lighter  
thinner

## certification

ISO 9001:2015  
IPC WHMA-A-620  
VG96927 Cable Type C  
AQAP-2120:2009

### Design



### Production



### Quality Control



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e-mail: sgs@expo.sk  
website: www.expo.sk



Established in 1997

## main activities

Reliable exhibition services in more than 50 countries on 4 continents

## customers / foreign relations

We represent most of the leading foreign specialized defence trade fairs and exhibitions on the territory of Slovakia:

- ADAS Manila
- DEFEA Athens
- DSA Kuala Lumpur
- DSEI London
- EDEX Cairo
- FUTURE FORCES FORUM Prague
- IDEF Istanbul
- IDEX Abu Dhabi
- ISDEF Tel Aviv
- LIMA Langkawi
- SOFEX Jordan

We work closely with the Slovak official governmental and industry institutions and associations supporting Slovak companies and their exports at foreign markets worldwide.

## business portfolio

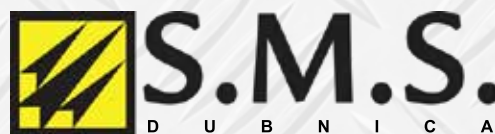
- Exhibition stand contracting
- Representing of foreign specialized defence trade fairs and exhibitions
- Managing of national pavilions at foreign defence trade fairs and exhibitions

We design, build, deliver and install custom exhibition stands for events and trade shows



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Slovak Republic

phone: +421 42 442 4003  
e-mail: office@smsdefence.sk  
website: www.smsdefence.com



Established in 1991

## main activities

S.M.S. spol. s r.o. has established itself as a recognised company in the defence industry of the Slovak Republic and abroad. Firm global position has been achieved during over three decades of experiences in supplies of wide range of defence products, related spare parts or services and system integration. Holding all relevant permissions and approvals to deal with military goods and services, S.M.S. spol. s r.o. is an established provider of variety of commodities for the Armed Forces of the Slovak Republic as well as end users in different countries across the globe.

As a pro-customer oriented company we provide consultancy services, integrated logistic support and customized turnkey solutions. Being a dynamic and innovative organisation we place great emphasis on development of our relationships with the clients. In addition to our activities we offer repairs, modernization programs, training and firing tests services.

S.M.S. IS YOUR RELIABLE PARTNER IN DEFENCE

## certification

ISO 9001, ISO 14001, AQAP 2110, NCAGE 4020M

## customers / foreign relations

S.M.S. spol. s r.o. is a credible partner in several countries around the world.

## business portfolio

- Land Forces
- Ammunition
- Aviation and Air Defence
- Training and Support



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website: www.sec-technologies.com



Established in 2015

## main activities

SEC Technologies develops and manufacture long range stand-off detectors. Stand-off detectors are based on eye-safe and undetectable lasers that enables them to DETECT, IDENTIFY and QUANTIFY chemicals in gaseous form with very high sensitivity. Detectors can be equipped with the ability to detect biological clouds.

## certification

- VVU Brno, CWA Detection - Sensitivities
- TNO Netherlands Long Range Detection
- Ingress Protection IP68
- MIL STD 810G Method 500.6 Procedure II.
- MIL STD 810G Method 501.6 Procedure I Table 501.6-III (A2-Basic Hot)
- MIL STD 810G Method 501.6 Procedure I using Table 501.6-III (A1-Hot Dry)
- MIL STD 810G Method 501.6 Procedure II, using Table 501.6-II (A2-Basic Hot) Ambient Air Conditions
- MIL STD 810G Method 501.6 Procedure II, using Table 501.6-III (A1-Hot Dry)
- MIL STD 810G Method 502.6 Procedure I using Table 502.6-1 (C1-Cold)
- MIL STD 810G Method 502.6 Procedure II using Table 502.6-1 (C1-Cold)
- MIL STD 810G Method 502.6 Procedure III using Table 502.6-1 (C1-Cold)
- MIL STD 810G Method 502.6 Procedure I using Table 502.6-1 (C3- Severe Cold),
- MIL STD 810G Method 503.6 Procedure I-C
- MIL STD 810G Method 504.1 Procedure II
- MIL STD 810G Method 507.6 Procedure II (10-day Aggravated Cycle)
- MIL STD 810G Method 509.6 Salt fog
- MIL STD 810G Method 514.6 vibration (Fig.514.6C-1 – Fig. 1, Tab. 514.6 C-II)
- MIL STD 810G Method 516.6 Shock (Tab. 516.6 C-I "Functional Test for Ground Equipment),

- MIL STD 810G Method 521.4 Freezing rain
- MIL STD 810 H Method 505.6 Figure 505.6-1 Procedure II (A1-Hot Dry)\_Solar radiation
- MiL STD 461F Method RS101 Figure RS101-2, Navy, from 30 Hz to 100 kHz
- MIL- STD-810G, Method 506.6, Procedure I, using rainfall rate of 1.7 mm/min (4 in/hr)
- MiL STD 461F Method RE102, Figure RE102-4, Navy Mobile and Army.
- MIL STD -810G MIL-STD-810G, Method 510.6,

## customers / foreign relations

Spain, Luxembourg, India, USA, Hungary, Estonia

## business portfolio

- Falcon 4G CHEM, Active Chemical Stand-off Detector (@5km)
- CHEM Ext Pack, Active Chemical Stand-off Detector (@6km and incresed sensitivity)
- Falcon 4G CHEM- BIO, Active Chemical and Biological Stand-off Detector (Chem@ 6km, Bio@1,5km, increased sensitivity)



# SEMANČÍN & PARTNERS

## Advokátska kancelária

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Slovak Republic

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Established in 2013

### main activities

We are a family law firm SEMANČÍN & PARTNERS that is founded on traditional values of the lawyer profession. We see our work as a calling and do it with fairness, honesty and confidentiality.

We offer professional legal services to top of game international standards in all important practice areas. Our specific focus is on banking and finance, data and privacy protection, competition and public procurement, criminal law, litigations and arbitrations, and environment.

Our other focus areas are real estate and construction, intellectual property and IT, corporate law, mergers and acquisitions, private clients, family law and inheritance, and labour law.

Our lawyers earned their degrees from top foreign universities, such as University of Cambridge and Universität Tübingen and got experience while working leading international and Slovak law firms. All qualified lawyers are members of Slovak Bar Association, Security and Defence Industry Association of the Slovak Republic, Israeli Chamber of Commerce in the Slovak Republic, The International Association of Privacy Professionals.

We speak:  
Slovak, English, German, Hebrew and Russian.

We are SEMANČÍN & PARTNERS and we do law with a difference. For a fair price, with a clear strategy, and in a plain language. Come and try.

### awards

Chambers Europe 2018  
Renowned international legal directory Chambers Europe 2018 lists the law firm SEMANČÍN & PARTNERS among leading law firms in Slovakia for banking and finance.

Law Firm of the Year 2021  
In the prestigious Law Firm of the Year 2021 competition, we were ranked among recommended law firms for Power engineering and Energy projects.  
In the prestigious Law Firm of the Year 2021 competition, we were ranked among very recommended law firms for Banking and Finance.  
Law Firm of the Year 2020

In the prestigious Law Firm of the Year 2020 competition, we were ranked among the recommended law firms for Competition.  
In the prestigious Law Firm of the Year 2020 competition, we were ranked among very recommended law firms for Telecommunications and IT Law.

In the prestigious Law Firm of the Year 2020 competition, we were ranked among the recommended law firms for Banking and Finance.  
In the prestigious Law Firm of the Year 2020 competition, we were ranked among the recommended law firms for Power engineering and Energy projects.

In the prestigious Law Firm of the Year 2020 competition, we were ranked among the recommended law firms for Criminal Law.  
Law Firm of the Year 2019

In the prestigious Law Firm of the Year 2019 competition, we were ranked among the recommended law firms for Competition.  
In the prestigious Law Firm of the Year 2019 competition, we were ranked among very recommended law firms for Telecommunications and IT Law.



# Slovak Training Academy, s.r.o.

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website: www.sk-ta.com



Established in 2017

## main activities

We provide comprehensive custom-tailored aviation training for military and civilian personnel. Training packages customized to each client from basic pilot training up to advanced and tactical training alongside with the maintenance courses for type UH-60 and MD-500. With an international team of experienced instructors, mechanics, ground staff and project managers we are leading training center in Europe. Based on International Airport Košice with operation 24/7. Extensive helicopter fleet counts more than 20 helicopters type UH-60A, S-300, MD-500, MD-530, Bell-206 or AS-355N. Along with our helicopter fleet we have also 5 in house FTD simulators and procedure trainers for UH60, Mi17, AS350, B206 and MD530 helicopter types. All courses are arranged in accordance with customer standards. We also provide aviation services like helicopter delivery, aerial works. Demo, Display and sightseeing flights, Aircraft Maintenance, and Aircraft Modernizations.

## certification

SK.ATO.05, SK.CAMO.002, SVK.LAB.005 (ICAO English), SK/AW/006 – Aerial Work Operator, Certificate for UH60 and L29, Maintenance Organization Approval Certificate – L-3-059/SK SK.145.033, SK.FTO.02, SK.147.0005  
Certificate for approved training organization by Ministry of Defense by Slovak Republic

## customers / foreign relations

- Slovak Air Force – pilot trainings – 195 pilot trainings finished up to date.
- NATO Countries - pilot and maintenance trainings – 327 pilots and engineers trained
- EU Governments – delivery of aircrafts, modernization & upgrade, maintenance program – 13 aircrafts delivered.

## business portfolio

Aviation and Maintenance Training for fixed wings and helicopters

### BASIC PILOT TRAININGS

Entry pilot courses for pilots with no previous flight experience.

PPL, CPL, IR, VRF NIGHT, ICAO English

Type rating (UH-60, S-300, MD-500E, MD-530F, Mi-8/17, Bell-206, AS-355N)

### ADVANCED PILOT TRAININGS

UH-60, MD-500/530 and Mi-8/17

Mission ready pilot – SAR, HEMS, Police

Advanced maneuvering training

NVG training

Mission equipment training

Crew chief training

### MISSION TRAININGS

SAR training

HEMS training

Urban operation training

Cargo hook operation

FIRE/HELITAC

### MAINTENANCE TRAINING

Maintenance training per OEM EASA standards

Aviation Services

- Aircraft delivery
- Aerial Services
- Gas pipeline and high electricity line monitoring
- Aerial filming
- Demo and display flights
- Sightseeing flights
- Aircraft Maintenance, modernization & upgrade
- MRO



# Slovenská letecká agentúra, s.r.o.

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Slovak Republic

phone: +421 48 416 39 16  
e-mail: office@slla.sk  
website: www.slla.sk



Established in 2005

## main activities

Main organizer – SIAF International Aviation Days  
Main organizer – Slovak Aviation Festival, Piešťany  
Main organizer – Euro Aero Salon airshow, Slovakia – Piešťany  
Main organizer – Slovak Night airshow, Piešťany  
Main organizer – Golden Wings Poll, National Aviation Award of the Slovak Republic  
Main organizer – SAAC – National Aviation Conference of the Slovak Republic

## certification

SOŠ AQAP 2110:2017 – Certificate of conformity of the Office of Defence Standardization, Codification and State Quality Verification.  
ISO 9001:2015 – Established and maintained quality management system complying with the requirements of the ISO standard.

## customers / foreign relations

References – institutions:

Ministry of Defence of the Slovak Republic  
Ministry of the Interior of the Slovak Republic  
Ministry of Transport, Construction and Regional Development of the Slovak Republic  
Ministry of Foreign and European Affairs of the Slovak Republic  
Transport Authority of the Slovak Republic  
Flight and Operational Services of the Slovak Republic  
Armed Forces of the Slovak Republic

References – Partner companies:

Aero Vodochody Aerospace a.s., Czech Republic  
Lockheed Martin Aeronautics Company, Texas, USA  
Slovak Training Academy, s.r.o., Slovakia  
Letecké opravovne Trenčín, a.s., Slovakia  
Škoda auto, Slovakia  
Soitron, s.r.o., Slovakia  
TA3 news television, Slovakia

SIAF International Aviation Days are the most prestigious aviation event, which is also one of the most visited and largest in Slovakia. It is repeatedly visited by fans from all over the world. SIAF brings together and combines the best of unique aerobatic, military and civil airshow.

Slovak Aviation Festival, Piešťany, is the latest event paying tribute to aviation in Slovakia, which includes an unprecedented mix of aviation, competition,

entertainment, light show and experiences for the general public at the Piešťany airport since 2019. It includes a real period experience of important milestones of Slovak history, and the celebration of the Day of Europe.

Euro AeroSalon airshow, is an exhibition of neighbouring countries in the field of aviation and their partners, which takes place during the Festival of Aviation Piešťany, at the Piešťany Airport.

Slovak Night airshow, Piešťany is a unique night airshow in Slovak premiere as a tribute to the acrobatic art of pilots. Night aerobatic flights are combined with pyrotechnic effects directly placed on the aircraft, controlled by pilots.

The Golden Wings Poll, National Aviation Award of the Slovak Republic annually recognises and awards personalities, institutions, companies and other entities for their contribution in various areas of Slovak aviation.

SAAC – National Aviation Conference of the Slovak Republic – is a new project of the Slovak Aviation Agency. A two-day conference with international participation where current topics and issues in the field of Slovak civil and military aviation will find application.

## business portfolio

- media campaigns (social media and viral marketing)
- preparation and implementation of professional workshops and conferences
- event organisation and logistics
- VIP services and sponsorship
- exhibition services



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Established in 1994

## main activities

SPINEA® is a Slovak engineering company engaged in the development, production, and sale of TwinSpin® high-precision reduction gearboxes and DriveSpin® high-precision actuators. SPINEA® is currently the only originally European manufacturer of high-precision reduction gearboxes and actuators and competes globally in this segment with three Japanese companies.

The company was founded in 1994. The impetus for its foundation was the invention - the transformation of planetary motion of reduction gearboxes into rotary motion of flanges by the Slovak designer Ing. Bartolomej Janek, CSc. Serial production of internationally patented high-precision gearboxes started in 1999.

SPINEA® enjoys membership in international robotics associations such as IFR - International Federation of Robotics, EU Robotics, MCMA - Motion and Motor Control Association in the USA, as well as in the German Engineering Association - VDMA. SPINEA® employs more than 500 people. Due to the technological complexity of production, the company has state-of-the-art production facilities and therefore employs mostly highly qualified experts in R&D, production, quality, marketing, and sales.

## certification

ISO 9001:1999  
ISO 9001:2000  
ISO 9001:2009  
ISO 9001:2016

## customers / foreign relations

The company's products find a wide range of applications all over the world in robotics and automation, the machine tool industry, medical technology, the security and defense industry, aerospace, food industry, packaging industry and many other applications such as the nuclear particle accelerator at CERN in Switzerland. Major customers include KUKA, ABB, COMAU, DMG, TRUMPF, Swarovski, Tetra Pak and many others

## business portfolio

- High precision reduction gears TwinSpin®
- High precision actuators DriveSpin®
- Customized solutions YourSpin



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website: www.stmpower.eu

Established in: 2001

## main activities

STM POWER has been on the heavy machinery market for more than 20 years. The company is well skilled in the production on the area more than 9000 m<sup>2</sup>. STM POWER is the universal manufacturer of complex technological equipment in the following fields:

- Production of special multipurpose machines/ technologies: basic & detail design; manufacturing doc.; manufacturing (welding, machining, coating, assembly, FAT/SAT, training of the operation personnel) accompanied technical doc. (ATD A-manufacturing, B-construction/installation, C-commissioning); user and service manuals; sale and after sale service
- Technology for processing of waste (nuclear, conventional)
- Hydro energy industry – turbines and its auxiliaries
- Petrochemical industry
- Aerospace industry

## certification

ISO 90001	Quality Management System
ISO 14001	Environmental Management
ISO 45001	Occupational Health and Safety Management
ISO 3834-2	Welding Quality Assurance
EN 1090-2	Welding Quality Assurance
EN 15085	Rail wheel vehicles
Manufacturing and service of floating structures for the inland transport	



## customers / foreign relations

- a. EPC turnkey supply of 6 hydro power plants up to 10 MWe (civil works, manufacturing of turbine equip., electro, I&C, safety systems)
- b. EPC supply of combined (electro-heat) power plant with CHP units with an output of  $P_e = 3,12$  MWe,  $P_t = 3,23$  MWt
- c. Ship locs Gabčíkovo – scope of supply: Manufacturing of the complex steel constructions with total weight 1300 tons; Construction works: onsite installation, support during functional test; Engineering: Accompanied technical documentation (manufacturing, construction site), As Built documentation
- d. Manufacturing for: ZTS – ŠPECIÁL, KMW, NASA, SMS group, KONŠTRUKTA – Defence, Siemens, ŠKODA JS, Airbus, Andritz and others.

## business portfolio

The complex technological equipment:

- Welded, or molded frame
- Equipped with:
  - Technology
  - Electro
  - Instrumentation & Control
  - Safety and other systems
- The production follows the FAT (Factory Acceptance Test), if need also the SAT (Site Acceptance Test)
- Packaging
- Transport
- Finishing surface – unifying coating of self-propelled howitzer Zuzana II



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Established in 2000

## main activities

TANAX TRUCKS a.s., is a company focusing on the production, trade and services of military trucks, activities in the field of truck engineering and the production of AKTIS trucks and special MAN military trucks and the modification of the military truck platforms. The business includes the sale of spare parts for AKTIS and MAN trucks and special services for the air force for communication, navigation and surveillance systems. The company is also a traditional manufacturer of engineering products, containers of various modifications, transport equipment and custom production.

## certification

- State authorization for trade in defense products
- Certificate of installation, repair, maintenance and training of the Communication, Navigation and Surveillance systems of the Slovak Air Force of the MOD of Slovak Republic
- Certificate AQAP 2110:2117 - NATO quality

assurance requirements for design, development production and services of trucks

- Certificate ISO 9001:2015/STN EN ISO 9001:2016- Manufacture and sale of trucks, spare parts, aggregates and means of transport, Engineering production

## customers / foreign relations

- MOD Slovakia- delivered 250 units of 12t trucks AKTIS in different modifications
- MOD Slovakia – delivered 21 units of MAN military and RMMV trucks of different modifications

## business portfolio

- production of military trucks
- service for military trucks
- trucks and superstructure engineering
- production of containers of various modifications
- mechanical engineering products
- custom manufacturing under ISO 9001



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website: www.teamsales.sk



Established in 2011

## main activities

Teamsales s.r.o. specializes in one of the most disruptive technologies of today – unmanned aerial vehicles. Drones can serve as a great tool to increase productivity, but as every new technology, they too can be misused. With vast expertise in the area of unmanned aerial systems, our experts specialize in both UAV and counter-UAV solutions. We use our experience to implement both UAS and C-UAS in military and civilian sector. Our focus is on complex projects ranging from needs analysis to operation and support. Each project is specific and requires an individual approach, which our experts are ready to provide. We work with renowned technology suppliers from around the world and provide a comprehensive portfolio of solutions, including services.

## certification

- Certificate of Quality management systems STN EN ISO 9001:2016
- Certificate of Information security management systems STN ISO/IEC 27001:2014

## business portfolio

### a. Counter-UAV solutions

#### I. Detection:

1. Radiofrequency scanners (RF Sensors)
2. EO/IR cameras
3. Radars
4. Acoustic sensors

#### II. Defense:

1. RF & GPS jammers
2. Control takeover
3. Net launchers/catchers
4. Kamikaze drones
5. Hunting drones
6. Laser burners

### b. UAV solutions

- I. Tethered drones
- II. Patrol drones
- II. Helicopters
- IV. Multi-rotors
- V. Fixed-wings
- VI. VTOLs

### c. Aerial works

- I. Photogrammetry
- II. Laser scanning
- III. Aerial inspections
- IV. Search & rescue



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TECHNICAL UNIVERSITY  
OF KOŠICE

Established in 1952

## main activities

The Technical University of Košice (TUKE) is an internationally recognized research and education institution that provides education and smart solutions for various areas of life. TUKE has been ranked in the world's top university rankings, such as: QS World University Rankings, in which TUKE ranked for the first time and in the top 1000, URAP-University Ranking by Academic Performance, SCIMAGO, Webometrics and others. With a total area of 43 hectares and with its three campuses in two regional cities, it is one of the largest universities in Slovakia. Thanks to the interconnection of its nine faculties with a diverse focus, TUKE creates a unique environment for thousands of students. More than 23 per cent of them are foreign students from 47 countries. TUKE offers a wide range of appealing study programs. It works closely with other educational

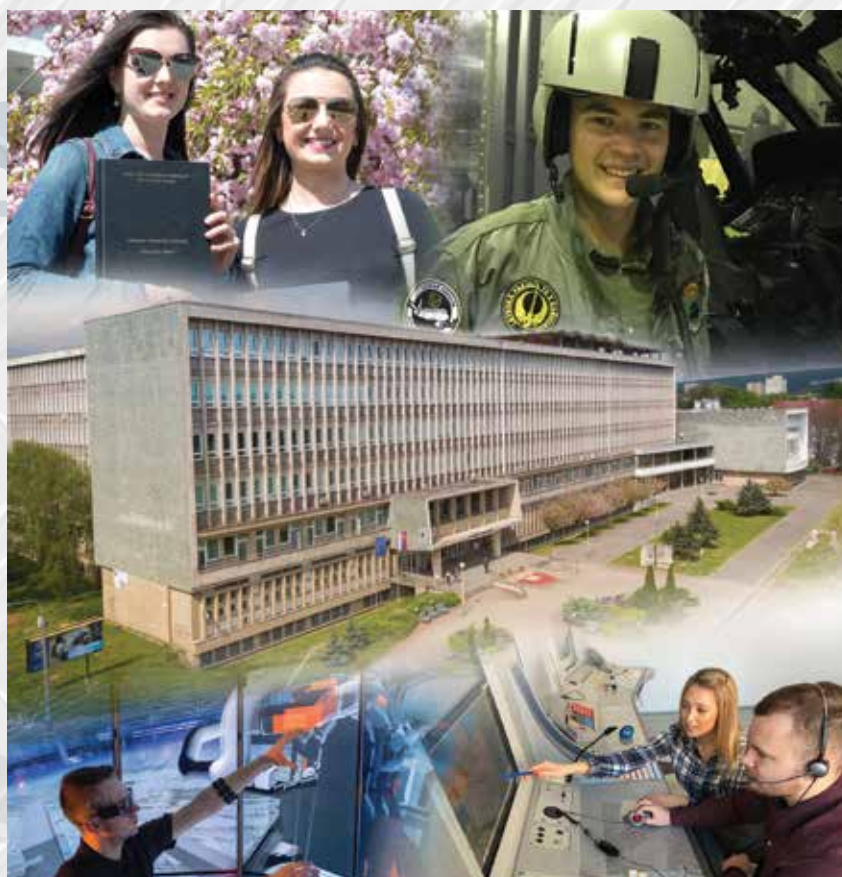
institutions and industrial facilities at home and abroad (112 university partnerships with 30 countries and 360 valid agreements enabling mobility of our teachers and students within the Erasmus+ program to 31 countries). The support of young innovators is covered by the University Science Park TECHNICOM through the TUKE Startup Centre and TUKE Incubator. Extracurricular activities offer sufficient relaxation in 30 kinds of sports like skin-diving, softball, tabata or noble yachting. Sports activities are covered by the school's athletic stadium, 8 gyms, a baseball field, squash and tennis courts. Sport clubs Akademik TU Košice and Slávia TU Košice, Collegium Technicum choir, Jahodná and Borievka folklore ensembles, as well as the Symphony Orchestra of the Technical University of Košice also operate on the campus. Students can also become members of student television, student radio and the organizations AIESEC, AZU, BEST and IAESTE.

## Faculties of TUKE:

- Faculty of Mining, Ecology, Process Control and Geotechnologies
- Faculty of Materials, Metallurgy and Recycling
- Faculty of Mechanical Engineering
- Faculty of Electrical Engineering and Informatics
- Faculty of Civil Engineering
- Faculty of Economics
- Faculty of Manufacturing Technologies
- Faculty of Arts
- Faculty of Aeronautics



1952 – 2022  
TECHNICAL UNIVERSITY  
OF KOŠICE



# Technopol International, a.s.

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Established in 1970

## main activities

Technopol International, a.s. is a private joint stock company with more than 50 years tradition. Main activities include: export, import, procurement, design, development, production, supply, support.

Our prime goal is the reliable supply of weapons, weapon systems, ammunition and spare parts

## certification

NCAGE 1019M

## customers / foreign relations

Major international business partners include NATO members, North African and Middle Eastern countries

## business portfolio

- weapons
- weapon systems
- ammunition
- spare parts
- support



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Established in: 1995

## main activities

TOMARK, s.r.o. successfully operates in the demanding and highly competitive environment of the mechanical engineering industry; it specializes in manufacturing in particular for the automotive and aviation industries. In TomarkAero division, specialized in aviation, the company is involved in the manufacture of the all-metal two-seater sports aircraft Viper SD4 and Skyper GT9. The Aeroplanes are designed for Ultralight (UL) a Light Sport Aircraft (LSA) category, which are an ideal solution for travel, pilot training and for the joy of flying. We are extremely proud to be a continuation of the famous tradition and legendary era of Czechoslovak aircraft production, which had a significant position compared to the most developed countries of the aviation industry.

TOMARK, s.r.o. manufacturer of sport planes; all-metal low-wing Viper SD4 and all-metal high-wing Skyper GT9:

- Viper SD4 is an all-metal two-seater aircraft in the UL / LSA / CS-LSA categories, ideal for travel, flight training, sport flying and towing of gliders. Viper SD4 is a perfect combination of excellent design, unique comfort, excellent flight characteristics and a wide offer of state-of-the-art equipment. That's why Viper has become a popular tool for experienced and starting pilots, flight schools as well as flying fans and admirers of beautiful design. Rich equipment is completed by electric flaps, electric trim – elevator, aileron, autopilot, ballistic recovery system (AEPS). Viper SD4 RTC was the first airplane made Slovakia with a type certificate from EASA. The EASA.A.606 certificate has been extended by a new aircraft model: Viper SD4 Night-VFR. Viper SD4 is certified for and capable of VFR Night flights! It is also certified in several national environments. Viper SD4 AFT – Air Force Trainer – a great choice for an air force. Thanks to its strong all-metal design and excellent flight characteristics, Viper SD4 AFT is also a great choice for basic training of air force pilots. Dynamic elegance in luxurious leather seats of a state-of-the-art carbon cab with panoramic views of the passing world. This is an excellent Viper SD4 Attack. An extraordinary harmony of luxury, comfort and uniqueness.
- Skyper GT9 is an all-metal UL and LSA category two-seater aircraft designed for travel, sports recreational flying and adventurous travel in a comfortable cabin

- Ideal for travel, pilot training, and flying for fun
- High performance, flight characteristics, outstanding comfort, low operating costs
- Roomy baggage compartment with advantageous access from the outside of the aircraft
- Excellent outlooks for unique visual experiences and for making photos and videos

## certification

- EASA type certificate (Viper SD4 RTC; Nr. EASA.A.606) – Confirmation of prescribed criteria, competence, quality and safety of the aircraft
- EASA type certificate and eligible aircraft for Night-VFR flights, night flight operations (Viper SD4 NIGHT-VFR) – meets the requirements for flying at night visibility - special conditions for night operations under VFR conditions for LSA airplanes
- IDEB 2018 (Viper SD4 Air Force Trainer); The Grand Prix IDEB 2018 in the Aviation category
- Type Certificates for MTOM 600 kg (Viper SD4 and Skyper GT9)
- Certified in a number of national environments (including certificates from the Czech LAA, German LTF-UL, US LSA and the Slovak Aviation Authority)

## customers / foreign relations

### Viper SD4 Air Force Trainer

All-metal two-seater aircraft with an MTOW of 600 kg, designed for the basic training of military pilots. Thanks to its excellent equipment, excellent flight characteristics and low operating costs, the Viper SD4 AFT is a great choice for training air force pilots.



# Virtual Reality Media, a. s.

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911 01 Trenčín  
Slovak Republic

phone: +421 32 6518 100  
e-mail: sales@vrm.sk  
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Established in 1992

## main activities

Virtual Reality Media, a.s. (VRM), is recognized global supplier of simulation and training systems. With extensive in-house capabilities including software and hardware engineering, production, system integration, VRM design and manufacture the entire range of simulators from basic Cockpit Procedures Trainers up to Full Flight and Full Mission Simulators for Military and Civil sector and for land and air applications.

VRM provides complete CLS program, warranty, and comprehensive after-warranty maintenance support programs, including mid-life technical refresh programs.

## certification

- Quality Management Certificate STN EN ISO 9001:2015
- NCAGE 1036M

## customers / foreign relations

- Ministry of Defense of Slovak Republic
- US Government Agencies and participation on FMS simulation and training programs
- Foreign markets for our products portfolio to include USA, Africa, Middle East, Latin America, India.



## business portfolio

1. Military Simulators and Training Systems:
  - Fixed and Rotary Wing Aircraft Simulators
  - Software Defined Simulators
  - Anti-Aircraft Missiles Systems Simulators
  - Ground Vehicles Simulators
  - Computer Based Training
2. Civil Aircraft Simulators FNPT, FTD and FFS Level D
  - Business Jets
  - Propeller Aircrafts
3. Other services:
  - Simulators Subsystems and Software Modules
  - 3D Modelling of Terrain Databases
  - Data Pack Collection for Rotary and Fixed Wing Aircrafts
  - Upgrade And Relocation of Third-Party Simulators



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Established in 1998

## main activities

VÝVOJ Martin is an engineering and manufacturing organization specialized in design and manufacture of custom mobile solutions such as military shelters/containers, vehicles and power sources, Modular airport tower, Mobile Air Traffic Control Tower. Our multi-product platform includes prototypes, single parts and small batch production, amongst others, the development of a variety of unique machines and equipment

## certification

- SOŠ AQAP 2110:2017
- ISO 3834-2:2005
- ISO 9001:2015
- EN ISO 14001:2015
- EN ISO 45001:2018



## customers / foreign relations

Czech Republic, Sweden, India, Senegal, Slovak Republic etc.

## business portfolio

- military shelters/containers
- containers for firefighters
- military vehicles
- power sources
- Modular airport tower
- Mobile Air Traffic Control Tower
- Air navigation Non-Directional Beacon System
- ERA – Explosive Reactive Armory



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website: www.way.sk



Established in 1969

## main activities

WAY INDUSTRIES is a production company with more than 50 years of experience in the field of production and assembly of civil and military vehicles, equipment and related services (maintenance, repairs, upgrades, spare parts and after sales service).

## certification

Our company holds the following certificates: ISO 9001, ISO 3834, AQAP 2110:2017, NCAGE 1001M.

## customers / foreign relations

Our demining and law enforcement systems are deployed in more than 50 countries (more than 250

systems deployed), UN agencies, NGOs, NATO missions etc., mostly in Africa, Asia, North and South America, as well as in Europe.

## business portfolio

- Demining systems BOZENA 4 and BOZENA 5 (the product is established in the Slovak Armed Forces)
- Law enforcement system BOZENA POLICE PROTECTION UNIT (BPPU)
- Defence equipment: One Man Turret, Two Men Turret, Overhauling of military vehicles, Spare Parts
- Skid Steer Loaders LOCUST



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Established in 1990

## main activities

We are a software consultation and development company offering state-of-the-art complete IT service: consultation, analysis, proposal, development, implementation and continuous and long-term maintenance of software solutions.

We supply geospatial, technical, managerial and electronisation software solutions. We analyse, model, simulate and predict the development of risk, potential or other explored phenomena.

We improve the functioning of companies and institutions using well thought-through information systems, digitalises services, processes and organisations.

We are an accredited research laboratory, specialising in projects of research in the areas of processing, analysis and application of geospatial data.

### Service values

Safety, reliability, flexibility and scalability of solutions. Combination of innovative and traditional platforms and technologies. Professional and dependable service team. Full range of software development service. Deployment of our systems at strategic clients and critical infrastructure (gas and oil industry, heat providers, road administration, forestry, environment, national accreditation, etc.)

## certification

Certificate ISO9001:2015  
Certificate ISO 20000-1:2011  
Certificate 27001:2014  
Certificate of Capability to Perform Research and Development (from the Ministry of Education of Slovakia)  
Certificate of Industrial Safety (from the National Security Authority of Slovakia)

## business portfolio

Software solutions for smooth operation of business in large industrial and public service organisations using intelligent information systems and turnkey applications based on real-time and geospatial data.

### Key solutions

#### **yAgenda: Modular platform for electronic services.**

Electronisation of processes, which enables transformation of business and enterprises from „paper-based“ to digital, increases efficiency, decreases error rates, provides the organisation with the tools to create and publish own electronic services.

#### **yDecision: Business intelligence for strategic decision-making.**

A system to support spatial decision-making with tools of business intelligence and an integration platform, models processes and states of project, calculates risks and costs of leveraging risks. Optimises operative and strategic decisions.

#### **ySpace: Innovative solution for analysis and interpretation of satellite data, winner of Innovation of the year 2020 (as announced by the Ministry of Economy of Slovakia).**

System for fully automated processing of accessible satellite data including their analysis and interpretation of results supported by machine learning. Integratable into third-party information system using specially created API.

#### **ySpatial: Modern online and offline geospatial information system.**

Modern portal solution for working with geospatial data suitable for all businesses, enterprises and organisations administering territories, technologies, infrastructure or natural resources.

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website: [www.nexus2protect.com](http://www.nexus2protect.com)



Established in 1996

## main activities

NIXUS is known for its innovations in rapidly deployable tents and shelters that solve demanding and complex logistic needs with highly specialist options. The key benefits of NIXUS products are size and compactness during transport, reduced deployment time, durability, and reliability during operation.

The high-pressure inflatable tents PRO, ERA and RIBS are designed to be the strongest on the market and are proven to deliver in the harshest conditions.

When space is an issue, the FOLD folding frame tents offer the most compact option and the ECOS expandable container provides an efficient use of space, as once expanded they are five times the original area of the container.

NIXUS products deliver modern solutions to the armed forces, rescue services and firefighters. The range includes command posts, accommodation, field hospitals and service stations as well as decontamination and collective protection.

NIXUS is a brand of Zepelin, which has been specializing in the development and production of inflatable products since 1996.

Our team is available to help you choose from our existing patented products or to design a bespoke solution tailored to your specification. All NIXUS products are designed and manufactured in Slovakia by Zepelin, s.r.o.

## certification

AQAP 2110:2017, ISO 9001:2015, ISO 14001:2015

## customers / foreign relations

Armed forces: Slovak Republic, Czech Republic, Hungary, Greece, Spain, Belgium, United Kingdom, Canada, Chile

Fire and rescue services: Slovak Republic, Poland, Estonia, Germany, Portugal, USA

## business portfolio

- Low-pressure inflatable tents (model PGK)
- High-pressure inflatable tents and shelters (model PRO, ERA, ISO)
- High pressure inflatable halls (model RIBS)
- Foldable frame tents and shelters (model FOLD, FRAM)
- Modular frame tents and halls (model TROOP, HUB)
- Expandable container shelters (model ECOS)
- Decontamination shower tents
- NBC Colpro tents
- Isolation rooms and portable isolation chambers
- Flexible storage tanks and transportation tanks
- Equipment and accessories



# Zetor Engineering Slovakia a.s.

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Established in 2000

## main activities

The company is dealing with research and development in the field of industrial know-how. At present, the company acts as a professional R & D centre of mobile applications for machines and special vehicles. The company was founded in June 2000 and is a professional partner for development, innovations and comprehensive deliveries, including the defence industry.

### Project design

The design of 3D models and 2D technical drawings are basically created by software 3D CAD SW CREO and CATIA, in case of customer request, it is possible to project in the SW SOLID WORKS. The company is equipped by a 3D production equipment FORTUS 400mc for rapid production of prototypes from the wide range of the materials (ABS, PC-ISO, ASA, FDM Nylon, PC and ULTEM) for different industrial branches. It has a large working area (406 x 355 x 406 mm), continuous operation, excellent surface quality and user configuration options – information about the print options and prices per email.

### Technical consultancy

The company Zetor Engineering Slovakia, a.s. has got an own experienced team of engineers and skilled technical professionals.

Technical consultancy is provided in the following areas:

- Steel structures and additional superstructures of mobile and stationary machines and equipment
- Construction that eliminates the impact of the human factor on the quality
- Project design of electric systems based on the cooperation with the partner companies
- Design, construction and calculation of the gearings and transmissions
- Design of special assembly and handling tools supporting modular solutions
- Trials and testing of off-road vehicles
- Project management

The company offers a project MNG for development and realization of the orders, from the prototype technical drawings, through the production assurance and cooperation at the prototype production, for the certification series up to the technical drawings for the series production, based on the cooperation with selected partners.

### Technological support

The company offers, for the pre-production prototype, certification and series production of the mobile machines and their main components, a technological concept of the assembly and technical conditions to fulfil the requirements for the entry into service, including homologation, according to the customer requirements. Within the activities, it provides creativity, experience, analysis and expertise to solve various complex problems associated with designing components, configurations and final products. It provides professional expertise and skills in the implementation of the project from development, planning and construction through simulations and calculations, up to the project management.

## certification

The company Zetor Engineering Slovakia, a.s. holds following quality certificates

- Engineering activities in the machinery industry
- Research and development in the field of technical science

Implemented and used a quality management system according to ISO 9001:2015, Information Security Management System according to ISO/IEC 27001:2013, and also Environment Management System ISO 14001:2015, certified by certification body QS Cert.

## business portfolio

- ATV 4x4 ZETOR GERLACH,
- RDV 4x4 ZETOR GERLACH



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Established in 1998

## main activities

ZTS-OTS, a.s. is a company with its long-time tradition in defence industry based on historical ties with one of the largest defence equipment manufacturers in former Czechoslovakia.

The company engages in various activities related to defence industry – all in compliance with the Permit for Trading in Military Products issued by the Slovak government.

The offer is primarily based on the range of defence equipment previously manufactured by ZTS enterprises – T-72 tank, BMP-1 and BMP-2 infantry combat vehicles, 152 mm howitzer DANA, 122 mm rocket launcher RM-70 GRAD. These activities include:  
Supply of parts and assemblies for armoured vehicles, Maintenance, repairs.

## business portfolio

- Assembly and Sales of Pressure Hoses  
Production programme:
  - Armoured hoses – super pressure, high pressure or low pressure hoses up to DN 2" (in compliance with DIN, SAE, JIC, JIS, or CSN standards)
  - Precision bended hydraulic tubes
- Application:
  - earth-moving machines, fork-lift trucks, utility vans and trucks
  - hydraulic platforms, hydraulic arms, hydraulic hammers and other attachments
  - agricultural machines
  - production machines, production lines, injection presses

- cleaning equipment, waterworks equipment, food-processing plants
- mine locomotives
- military and field-engineering equipment

- Sale of Spare Parts, Repairs, Renovation – Civil Equipment

The company performs all kinds of repairs – common, middle and overhaul repairs - of hydraulic excavators (DH-112, DH-113), hydraulic break hammers of HRK type, loading machines (UNC-60, UN-053.1.2) and fork lifts ND9-031 widely spread all over Slovakia and the surrounding countries. We supply spare parts for all these products.

Besides repairs of complete machines our company also repairs single components – hydraulic cylinders, distributors, hydraulic generators and motors of SPV and SMF type, transmissions, etc.

- Industrial Painting

The company engages in industrial painting in our high capacity plant that is equipped with spraying and drying room with size of 7m x 4m x 2.8m. For spraying process we use synthetic, polyurethane, epoxy, HS+, and water-based paint.

The offered services include also storage and manipulating area with overhead crane with lifting capacity of 5 tons.

## certification

- Certificate of Quality Management System according to STN EN ISO 9001: 2015
- Permit for Trading in Military Products, issued by the Ministry of Economy of the Slovak Republic



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Established in 1937

## main activities

The company has over 80 years tradition in production of military equipment and has the technology for the complete production of guns and barrels in calibre range from 30 mm up to 155 mm. Over 50 types, approx. 50 000 units of weapons were produced since 1937.

## certification

ISO 9001,  
ISO 9834,  
AQAP 2110:2017

## business portfolio

ZTS – ŠPECIÁL offers following products and services:

- 30 mm automatic gun GTS-30 (2A42)
- 30 mm one-man turret DVK-30
- 81 mm, 98 mm and 120 mm mortars
- 125 mm tank gun 2A46
- 125 mm modernized tank gun GTS-125

- Manufacturing of 155mm / 52 cal. weapon for the artillery systems (ZUZANA 2, EVA, DIANA) and spare components
- Service, repairs and overhauling of wheeled and tracked land equipment (DANA, ZUZANA) as well as guns (2A28, 2A42, D-10, 2A46)
- Design, development, production and testing of weapon systems based on customer's requirement

Barrel's production program

- 30 mm barrel for GTS-30 (2A42)
- 73 mm barrel for 2A28
- 100 mm barrel for D-10 (T55)
- 81 mm, 98 mm and 120 mm mortar barrels
- 125 mm tank barrel GTS-125 (2A46)
- 152 mm howitzer barrel for SpGH DANA
- 155 mm/45 cal. howitzer barrel for SpGH ZUZANA model 2000
- 155 mm/52cal. howitzer barrel for SpGH ZUZANA 2



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Established in 1937

## main activities

ZVS holding continues the engineering tradition in Dubnica nad Váhom, which dates back to 1937, when the Škoda Plzeň Group built its first plant there. Since 2015, ZVS has been a part of MSM Group. ZVS deals with the development, production and sale of products and services in the field of mechanical engineering, electrical engineering, special production and ammunition. One of the main components of the company's portfolio is the production of medium and large-caliber ammunition, including ammunition for tanks, artillery and mortars and rocket launchers. The company also produces pyrotechnic compositions.

## certification

- The company ZVS holding, a.s. in Dubnica nad Váhom has a certified integrated management system in accordance with ISO 9001, ISO 14001 and ISO 45001. The implemented quality management system is extended to the requirements for special production according to the AQAP 2110 standard.

## business portfolio

- medium caliber ammunition
- mortar ammunition families
- artillery ammunition
- tank ammunition
- rockets
- impact fuzes
- ammunition components





# PRODUCTS NOMENCLATURE

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ZBOP

## WEAPONS AND AMMUNITION

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# 155 mm Artillery Ammunition Family

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## Description

155 mm artillery ammunition from the portfolio of MSM GROUP is a product that can be used in many of currently used 155 mm guns and howitzers all around the world. Our ammunition was tested in such 155 mm weapon systems like ZUZANA, NORA B-52, G5/G6, M109, M198, FH-70, KRAB, KH-179 and many others. The ammunition can be used against infantry, armoured targets as well as against structures. MSM GROUP offers wide variety of 155 mm ammunition for maximum flexibility and user comfort during training and operational use. In our portfolio we offer High Explosive projectiles of different types – standard M107 projectile, projectiles of different design – using extended range technology boat tail and base bleed units – Our base bleed ammunition of types HE ER BB and HE ER FB BB ensure extended range of more than 30km when fired from 39 calibre gun, up to 43 km when fired from 52 calibre gun. The minimum fragment coverage area for the HE projectile is not less than 3100m<sup>2</sup> per projectile. All of our 155mm ammunition is supplied with point detonating fuzes of our own design – KZ 984. The KZ 984 fuze fulfils all NATO standards requirements for 155mm ammunition, but we are able

to offer our customers other type of fuzes – proximity, time and multi-purpose along with our NATO standard partners. Our projectiles can be supplied with wide variety of powder charges depending on the customers demand – older “textile bag” charges – M3A1, M4A2, M119, M203 as well as modern Bi-Modular charge system ensuring the best and most advanced firing capabilities. Our 155mm ammunition is currently in service in more than 18 countries around the world.

## Producer

MSM GROUP s.r.o.  
Štúrova 925/27  
018 41 Dubnica nad Váhom  
Slovak Republic



# 30 mm automatic gun

SEE PAGE 73

## GTS-30 (2A42)



### Description

The 30 mm automatic gun is designed for firing at light armored targets within a distance up to 1500 m, non-armored targets within a distance up to 4000 m and also low-flying subsonic targets up to 2000 m within a slant distance of 2500 m. The gun can be fired in single shots or in burst (low or high rate of fire). It offers reliable functioning under sever condition such as temperature range from +50 C up to -50 C in rain, dust, frost or in a very dry environment. Ammunition types: 30x165 mm AP, HE, HEI, APFSDS-T. Serial production is ongoing in ZTS – ŠPECIÁL.

### Producer

ZTS – ŠPECIÁL, a.s.  
Lieskovec 575/25  
018 41 Dubnica nad Váhom  
Slovak Republic

#### TECHNICAL DATA OF THE GUN:

Caliber	30 mm	Weight of the barrel	38,5 kg
Number of grooves	16	Recoiling Force	40-50 kN
Twist of grooves	715,5 mm	Length of the gun	3027 mm
Rate of fire    High	min 550 rounds/min	Feeding	Two belt type
Low	200-300 rounds/min	Number of powder cartridges	3
Reckocking	Pyrotechnical or manual	Weight of the gun	115 kg



# DELOSYS – Artillery Command & Fire Control System

SEE PAGE 41



## Description

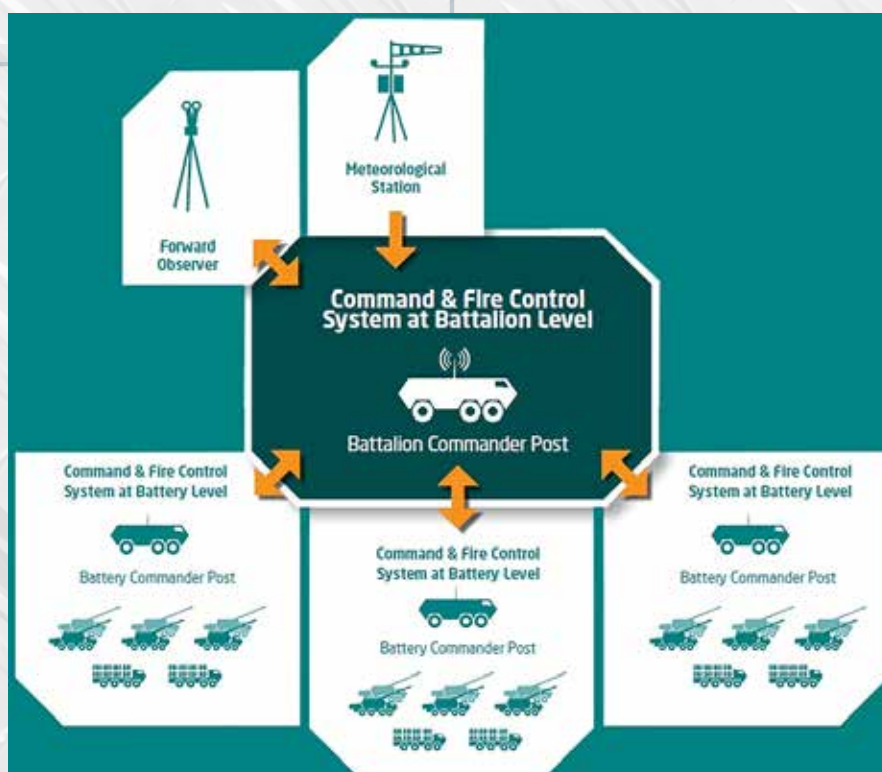
DELOSYS is a comprehensive artillery command and fire control system to be deployed on battalion and battery levels in conjunction with various artillery units covering alternatively gun howitzers, rocket launchers and mortars in typical formations. It is an open C4I system designed to automate battlefield command and fire control using the latest technical and software means. The system can be easily adjusted to fit any existing national fire command and control systems currently serviced. It might be built in any suitable carrier – container.

## Functionalities incorporated

- Calculating the topographic information
- Processing the meteorological information
- Processing the information from forward observation system
- Computing the firing data using differential equations
- Using the digital maps
- Fire planning

## Producer

KONŠTRUKTA – Defence, a.s.  
Lieskovec 575/25  
018 41 Dubnica nad Váhom  
Slovak Republic





## Description

### MAIN FEATURES:

- light, compact, tested, easy to operate and maintain effective firing on the move at day and night
- high probability hit by first shoot
- high accuracy calculation of ballistic parameters
- turret is easily installable on a variety of wheeled and tracked vehicles
- utilization of combat proven weapons systems,
- ammunition and FCS providing for effective conduct of combat at any weather conditions, day or night
- ATGM
- Target tracking

### TECHNICAL DATA OF THE TURRET:

- Crew (Gunner): One-man
- Powered elevation:  $-4^{\circ} \div +50^{\circ}$
- Manual elevation:  $-4^{\circ} \div +58^{\circ}$
- Powered/ Manual traverse:  $N \times 360^{\circ}$
- Gun/ Turret stabilization: 3 axes
- Main gun (30 mm): GTS-30
- Coaxial machinegun: PKT 7.62 mm
- Main gun ready rounds: 100 + 200 pcs.
- Machinegun ready rounds: 1500 pcs.
- Smoke grenade system: 6 x 81 mm
- Empty turret weight (w/o ammo): 1 100 kg

## Producer

ZTS – ŠPECIÁL, a.s.  
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018 41 Dubnica nad Váhom  
Slovak Republic





## Description

### • REMOTE CONTROLLED WEAPON STATION

GLADIUS 12 represents new conception of remote controlled weapon station for various gun carriage options for each weapon system:

- 12.7 mm Machine gun - NATO / Russian caliber,
- 7.62 mm Machine gun - NATO / Russian caliber,
- Grenade launcher 30 mm / 40 mm.

Independent elevation of sight system allows electronic boresighting and superelevation while shooting. Highly precise motion of weapon station in azimuth and elevation is provided by PMSM drive and direct drive.

### Technical specification

#### Basic motion parameters:

Stabilized Pan / Tilt head of „U“ type  
Motion range azimuth  $n \times 360^\circ$  (continues)  
Motion range elevation  $-20^\circ$  up to  $+70^\circ$  (max.)  
Speed range azimuth  $0.005^\circ/\text{sec}$  -  $60^\circ/\text{sec}$   
Speed range elevation  $0.005^\circ/\text{sec}$  -  $50^\circ/\text{sec}$   
Repeatable positioning accuracy in both axes  $\pm 0.6 \text{ mrad}$

Gun carriage – options for each weapon systems:

Machine gun 12.7 mm / NATO / Russian caliber  
Machine gun 7.62 mm / NATO / Russian caliber  
Ammunition magazine 12.7 mm / 7.62 mm 200 pcs. / 400 pcs.

Grenade launcher 30 mm / 40 mm

*\*Modular conception allows additional installation of smoke grenade launchers and armour plates.*

#### Sight system with independent elevation

(configuration according to customer request):

Day Camera  
Type 1/4 type EXview HAD CCD  
Zoom 36x optical, 12x digital  
NFOV  $1.7^\circ$

Detection / Recognition / Identification min. 9.0 km / min. 4.7 km / min. 2.7 km

*\*Conditions for DRI (NFOV) Target Size - 2.3 m x 2.3 m, Visibility - 20 km WFOV  $57.8^\circ$*

#### Terminal imager

Type 640 x 512 VOx Microbolometer NFOV  $4.6^\circ$

Detection / Recognition / Identification min. 7.9 km / min. 3.5 km / min. 1.9 km

*\*Conditions for DRI @ SNFOV Target Size - 2.3 m x 2.3 m, Target contrast  $2^\circ\text{C}$  WFOV  $14.3^\circ$*

Pixel size 17 82m

Spectral band 8 - 14 82m

Laser Range Finder

Type Class 1M, eye safe

Wavelength (nm) 1.55 82m

Range accuracy (1 82) 5 m

Max. Range 10 000 m

Range Resolution 50 m

Angular resolution 1 mrad

*\*Standard NATO target (2,3 m x 2,3 m)*

#### Other data:

Dimensions width 1256 mm

height (NATO / Russian caliber) 700 mm / 666 mm,

length with gun (NATO / Russian caliber) 1658 mm / 1639 mm

Weight (without gun and ammunition) 200 kg

Temperature operation / storage  $-32^\circ\text{C}$  up to  $+55^\circ\text{C}$  /  $-40^\circ\text{C}$  up to  $+70^\circ\text{C}$

## Producer

EVPÚ, a.s.

Trenčianska 19

018 51 Nová Dubnica

Slovak Republic



## Description

### MORTAR M6 60mm

The extremely light and safe mortar does not only meet the highest tactical and logistic demands; thanks to its high firing capacity, high accuracy, quick and easy operation it is suitable for special missions, especially in difficult terrain. All types of 60mm mortar bombs can be fired from this mortar.

#### M6C model with trigger and aiming device

A weapon designated for quick response and reliability. The special handgrip with trigger and the new, improved aiming device guarantee high accuracy. The M6C can be used up to charge 3, although for easy handling and firing it is recommended up to charge 2 only.

#### Barrel and breech cap

The barrel and breech cap are made of high-strength special steel. They are forged, heat treated and machined to close tolerances. The barrel is provided with hand protection.

#### Range scale

The division of range scale (default: charge 0, 1 and 2 for KERAMETAL HE Mk2, charge 1 ad 2 for KERAMETAL ILL Mk2 and a mils scale) can be adjusted also to other types of mortar bombs

### MORTAR M8 81mm

Developed for the Austrian Army, this mortar not only meets the highest tactical and logistical demands, it will also operate under extremely difficult topographical conditions. Thanks to its high firing capacity, high accuracy, quick and easy operation, it is suitable for all types of combat. Especially as indirect fire support for infantry, paratroops and armoured personnel carriers. All types of 81mm mortar bombs can be fired from this mortar. M8 is in service in the Austrian Army.

#### Barrel and breech cap

The forged high-strength special steel barrel with smooth, close-tolerance bore is provided with specially designed ribs for reinforcement and improved heat dissipation. This allows for much higher firing stresses. The breech plug, which is

screwed into the barrel, has a rigidly mounted firing pin. If necessary, the latter can be easily removed from the assembled mortar.

#### Base plate

The base plate is drop-forged and made of a high-strength aluminium alloy with reinforcing ribs. The design combines low weight with high stability so that the base plate is able to withstand highest impact stresses.

### MORTAR M12 120mm

The M12 120mm mortar has been jointly developed with the Austrian Army. It meets all requirements as to mobility, reliability and fire power in the modern battle field. This mortar is normally mounted on a towed carriage, but it can also be deployed in tracked armoured vehicles. Almost all types of mortar bombs of 120mm calibre can be fired with this weapon. In service at the Austrian Army.

#### Base plate

Designed for highest stability on all kinds of terrain and ground, it is made of welded steel and has six ribs and vents to ensure the desired result.

#### Barrel and breech cap

The barrel is made of high-strength ESR special steel. It is forged, heat-treated and machined to close tolerances. The forged breech plug is screwed into the barrel. A specially developed sealing ring guarantees gas-tightness. The firing mechanism can be switched from fixed to triggered firing. A safety lever is provided on the breech to avoid inadvertent firing. The breech ball fits into a socket in the centre of the base plate, where it is fixed by a bayonet nut.

#### Carriage

The carriage is not only used for transport of the mortar. Its special design allows to transport the mortar ready assembled, to the firing position, lifted from the ground after use and returned to the transport position, still assembled.

## Producer

KERAMETAL, s.r.o.  
Jašíkova 2  
821 03 Bratislava  
Slovak Republic



## Description

One Man Turret is a man operated turret for specialized infantry fighting vehicles and military armored personal carriers (tracked or wheeled). System is designed and tested for usage in hard conditions and to withstand the highest requirements of military armored or infantry corps.

One Man Turret is equipped with fire control system (FCS), which is designed as a modern electronic system. Together with guns, gunners sight and two axis gyroscopic stabilization of guns, it provides aiming, firing and destroying of targets in short period of time. Turret management system (TMS) controls the mode of operation of turret assemblies and weapon systems (2A42 automatic gun 30 mm; co-axial PKT machine gun 7.62 mm and ATGM KONKURS launcher). All systems are fully automated to provide high and precise accuracy and can be also operated manually.

Turret provides armored protection on level 3, against AP bullets (B32) of 7,62 mm in horizontal plane, at angle of slope and inclination of 30° in whole region of azimuth angles (e.g. 360°) according to STANAG 4569, AEP-55 and also environmental standards MIL-STD-461, MIL-STD-810 and its valid parts. Armored protection can be increased by additional armor plates.

### MAIN POINTS

- azimuth angle range:  $n \times 360^\circ$
- elevation angle range: from  $-10^\circ$  to  $+50^\circ$
- automatic fire control system
- fully automatic stabilization system
- firing can be also operated manually
- various weapons systems
- gun ammunition feeding by two belts
- night and day vision systems
- 1380 mm or 1780mm ball race mean diameter
- 902 V smoke system (or another mark)

### TECHNICAL PARAMETERS

Crew	1 (operator)
Curb weight of turret	1400 – 2000 kg
Range of voltage supply	22V to 28V DC
Working temperature range	$-35^\circ\text{C}$ to $+60^\circ\text{C}$
30 mm 2A42 automatic gun rate of fire (low)	120 – 300 rounds /min.
30 mm 2A42 automatic gun rate of fire (high)	550 rounds /min.
7,62 mm PKT co-axial machine gun rate of fire (low)	120 – 300 rounds/min.
7,62 mm PKT co-axial machine gun rate of fire (high)	700 – 800 rounds/min.
Ammunition stowage - 30 mm gun cartridges	200 pcs
Ammunition stowage - 7.62 mm cartridges for PKT machine gun	1200 pcs
Ammunition stowage - ATGM (combat position): 2 pcs	2 pcs
Azimuth	$n \times 360^\circ$
Speed in azimuth (nominal)	$32^\circ/\text{s}$
Min. aiming speed in azimuth	$0.02 - 7^\circ/\text{s}$
Elevation	from $-10^\circ$ till $+50^\circ$
Speed in elevation (nominal):	$33^\circ/\text{s}$
Min. aiming speed in elevation	$0.02 - 7^\circ/\text{s}$

## Producer

WAY INDUSTRIES, a.s.  
Priemyselná 937/4  
963 01 Krupina  
Slovak Republic



## Description

Smoke Screen Masking System (including 80mm SMOKE GRENADE CSK-1 and 80mm SMOKE GRENADE training) is a modular adoptable system creating smoke protection for combat vehicles or similar military objects against highly accurate guided weapons or reconnaissance-firing systems.

## Producer

S.M.S., spol. s r. o.  
Pionierska 423  
018 41 Dubnica nad Váhom  
Slovak Republic





## Description

### • REMOTE CONTROLLED TURRET

TURRA 30 with an integrated 30 mm automatic gun NATO/Russian caliber, 7.62 mm / 12.7 mm machine gun, smoke grenade launcher covering 120° sector and also with ATGM represents highly effective way of elimination of armoured vehicles or low-lying objects. TURRA 30 is a remote controlled turret which is designed to be integrated on various types of wheeled or tracked armoured vehicle.

### Technical specification

#### Basic characteristics of TURRA 30:

- Dimensions:
  - Length without main gun / with main gun: 2244 mm / 4056 mm
  - Height without optional equipment: 765 mm
  - Width without optional equipment: 2021 mm
  - Weight (basic without ammo and weapons): 1 300 kg
- Level of protection according to STANAG 4569 – LEVEL 2

#### Weapons:

##### 30 mm main gun

- 2A42 (175 pcs. for upper belt and 155 pcs. for lower belt, totally 330 pcs.)
- Mk-44 (165 pcs. for upper belt and 165 pcs. for lower belt, totally 330 pcs.)

##### ATGM

- KONKURS (1 x MLP, 2 pcs ready to fire)
- SPIKE LR/LR2 (1 x MLP, 2 pcs ready to fire)

##### Machine gun

- PKT 7.62 mm (600 pcs.7,62) / NSV 12.7 mm
- NATO caliber 7.62 mm (600 pcs.7,62) / 12.7 mm

##### Smoke grenades

- Multispectral smoke grenade GALIX 13
- \*(8 smoke grenades - caliber 80 mm)
- Smoke screen in the sector 120°

##### Motion parameters:

Movement in azimuth  $n \times 360^\circ$  (continues)  
 Speed in azimuth  $\geq 0,00125^\circ/\text{sec}$  up to  $40^\circ/\text{sec}$   
 Movement in elevation  $-10^\circ$  up to  $+70^\circ$  (max)  
 Speed in elevation  $\geq 0,0018^\circ/\text{sec}$  up to  $50^\circ/\text{sec}$

Repeatable positioning accuracy in both axes  $\leq 0,56 \text{ mrad}$   
 Commander's sight:

Panoramic commander sight provides the commander full capability of independent observation for situation awareness and target acquisition. It also allows the accurate manual tracking and fire engagement of static or moving target with high hit probability while the vehicle is on the move. The sight consists of day camera, IR night camera and laser range finder on Pan / Tilt head.

#### Gunner's Sight:

##### Day Camera

Type ¼ " EXview HAD CCD with 36 x optical zoom  
 NFOV  $1,7^\circ$   
 WFOV  $57,8^\circ$

##### Thermal imager

Type Cooled 640 x 480 InSb  
 NFOV  $2^\circ$   
 WFOV  $10^\circ$

##### Laser Range Finder

Type Class 1M, eye safe  
 Wavelength  $1,55 \mu\text{m}$   
 Range  $\geq 10\,000 \text{ m}$  NATO Target

## Producer

### EVPÚ, a.s.

Trenčianska 19  
 018 51 Nová Dubnica  
 Slovak Republic





## Description

### • REMOTE CONTROLLED TURRET

TURRA 30 with an integrated 30 mm automatic gun NATO/Russian caliber, 7.62 mm / 12.7 mm machine gun, smoke grenade launcher covering 120° sector and also with ATGM represents highly effective way of elimination of armoured vehicles or low-lying objects. TURRA 30 is a remote controlled turret which is designed to be integrated on various types of wheeled or tracked armoured vehicle.

#### Technical specification

##### Basic characteristics of TURRA 30:

- Dimensions:
  - Length without main gun / with main gun: 2345 mm / 4425 mm
  - Height / with commander sight / with MET sensor: 930 mm / 1162 mm / 1212 mm
  - Width with ATGM: 2518 mm
  - Weight (basic without ammo and weapons): 1 300 kg
- Level of protection according to STANAG 4569 – LEVEL 2

##### Weapons:

##### 30 mm main gun

- 2A42\_\_ (175 pcs. for upper belt and 155 pcs. for lower belt, totally 330 pcs.)
- Mk-44 (165 pcs. for upper belt and 165 pcs. for lower belt, totally 330 pcs.)

##### ATGM

- KONKURS (1 x MLP, 2 pcs ready to fire)
- SPIKE LR/LR2 (1 x MLP, 2 pcs ready to fire)

##### Machine gun

- PKT 7.62 mm (600 pcs.7.62) / NSV 12.7 mm
- NATO caliber 7.62 mm (600 pcs.7.62) / 12.7 mm

##### Smoke grenades

- Multispectral smoke grenade GALIX 13
- \*(8 smoke grenades - caliber 80 mm)

- Smoke screen in the sector 120°

##### Motion parameters:

- Movement in azimuth  $n \times 360^\circ$  (continues)
- Speed in azimuth  $\geq 0,00125^\circ/\text{sec}$  up to  $40^\circ/\text{sec}$
- Movement in elevation  $-10^\circ$  up to  $+70^\circ$  (max)
- Speed in elevation  $\geq 0,0018^\circ/\text{sec}$  up to  $50^\circ/\text{sec}$
- Repeatable positioning accuracy in both axes  $\pm 0,56 \text{ mrad}$

##### Commander's sight:

Panoramic commander sight provides the commander full capability of independent observation for situation awareness and target acquisition. It also allows the accurate manual tracking and fire engagement of static or moving target with high hit probability while the vehicle is on the move. The sight consists of day camera, IR night camera and laser range finder on Pan Tilt head.

##### Gunner's Sight:

##### Day Camera

Type  $\frac{1}{4}$  " EXview HAD CCD with 36 x optical zoom  
NFOV  $1,7^\circ$   
WFOV  $57,8^\circ$

##### Thermal imager

Type Cooled 640 x 480 InSb

NFOV  $2^\circ$

WFOV  $10^\circ$

##### Laser Range Finder

Type Class 1M, eye safe

Wavelength  $1,55 \mu\text{m}$

Range  $\geq 10\,000 \text{ m}$  NATO Target

## Producer

EVPU, a.s.

Trenčianska 19

018 51 Nová Dubnica

Slovak Republic

# Two Man Turret

SEE PAGE 68



## Description

Two Man Turret is a man operated turret for specialized infantry fighting vehicles and military armored personal carriers (tracked or wheeled). System is designed and tested for usage in hard conditions and to withstand the highest requirements of military armored or infantry corps.

Two Man Turret is equipped with a 30mm automatic gun 2A42, fed by two belts and stabilized in two axis, with a co-axial machine gun 7,62mm PKT and with ATGM Launcher to engage armoured targets either from the turret or out of the turret.

The armament mounted in the TMT turret enables to engage various targets including tanks and attack helicopters. Targets are usually vehicles with lower ballistic protection APC (armored personnel carrier) and logistic vehicles. To destroy MBT (main battle tank) turret is equipped with ATGM KONKURS system. The TMT is provided with a smoke laying equipment with a launcher of smoke grenades.

### MAIN POINTS

- azimuth angle range:  $n \times 360^\circ$
- elevation angle range: from  $-5^\circ$  to  $+75^\circ$
- automatic fire control system
- fully automatic stabilization system
- firing can be also operated manually
- various weapons systems
- gun ammunition feeding by two belts
- night and day vision systems
- ball race mean diameter 1780 mm
- smoke grenade – 902 V system

### TECHNICAL PARAMETERS

Crew	2 (commander, operator)
Curb weight of turret	2500 kg
Range of voltage supply	22V to 29V DC
Working temperature range	$-30^\circ\text{C}$ to $+50^\circ\text{C}$
30 mm 2A42 gun low rate of fire	200 – 300 rounds / min.
30 mm 2A42 gun high rate of fire	550 rounds /min.
7,62 mm PKT co-axial machine gun low rate of fire	250 rounds/min.
7,62 mm PKT co-axial machine gun high rate of fire	700 – 800 rounds/min.
Ammunition stowage - 30 mm gun cartridges	500 pcs
Ammunition stowage - 7.62 mm cartridges for PKT machine gun	2000 pcs
Ammunition stowage – ATGM	turret – 1 piece; vehicle hull – 3 pcs.
Azimuth	$n \times 360^\circ$
Speed in azimuth (nominal)	$30^\circ/\text{s}$
Min. aiming speed in azimuth	$0,07 - 6^\circ/\text{s}$
Elevation	from $-5^\circ$ till $+75^\circ$
Speed in elevation (nominal)	$35^\circ/\text{s}$
Min. aiming speed in elevation	$0,07 - 6^\circ/\text{s}$

## Producer

WAY INDUSTRIES, a.s.  
Priemyselná 937/4  
963 01 Krupina  
Slovak Republic



## Description

### • REMOTE CONTROLLED WEAPON STATION

The weapon station ZSRD 07 is the light, remote controlled system and is designed to be integrated on any wheeled or tracked armoured vehicle. It is used as a protection mean for the military groups, which full the special tasks inside its own tail or in the tail of the enemy. The modular system of weapon station allows you to customize the use of components according to customer requirements.

#### Technical specification

Remote controlled weapon station ZSRD 07 consists of:

- Gyro-stabilized two-axis Pan / Tilt head of „U“- type,
- Range of motion in azimuth is  $n \times 360^\circ$  and in elevation  $-15^\circ$  to  $+70^\circ$

Gun-carriage with PKT 7,62 mm machine gun with amortization element and guiding plate

Sight and observation system consists of:

- surveillance TV camera Britannia (field of view  $48^\circ \times 36^\circ$ , optical zoom 18x, digital zoom 12x)
- aiming TV camera HK 75 (field of view  $3,7^\circ \times 2,8^\circ$ )
- uncooled IR camera DRP-893 (field of view  $8^\circ \times 16^\circ$ , digital zoom 2x)

- Smoke grenade launcher
- Protective covers, cabling
- Gunner workstation
- User's software

ZSRD 07 main advantages and features:

- Electromechanical control of the gun (remote charging, sensor for indication of number of shots)
- Speed range in elevation (min./max.)  $0.03 - 60^\circ/\text{sec.}$
- Speed range in azimuth (min./max.)  $0.03 - 120^\circ/\text{sec.}$
- Ammunition box for 400 pcs. of projectiles (Ammunition supply system and storage including cartridge-case trap)
- Possibility to connect external laser range finder
- Ballistic protection of the camera by means of hinged cover

ZSRD 07 integration in armoured wheeled vehicles

## Producer

EVPÚ, a.s.  
Trenčianska 19  
018 51 Nová Dubnica  
Slovak Republic



## 155 mm 52 Cal. Self-propelled Gun Howitzer



### Description

ZUZANA 2 is a self-propelled autonomous artillery system with automatic loading of ammunition which is capable to provide effective fire by both direct and indirect aiming.

- 155 mm SpGH Zuzana 2 is armed with a 52-caliber barrel that is designed in accordance with the Memorandum of Understanding concerning "Standardization of Elements of 155 mm Howitzers and Ammunitions".
- Electronic equipment, diagnostics and automation of operations during loading and firing rank this weapon among the most advanced weapon systems in the world.
- The weapon is equipped with the inertial navigation equipment and muzzle velocity radar.
- On-board FCS enables to operate with digital maps.
- For direct fire the weapon is equipped with aiming system with built-in TV camera, thermal image camera and laser range-finder.
- The weapon is equipped with additional optical sight for manual aiming.
- Various communication equipment can be installed in accordance with the customer's requirements.

- 155 mm ammunition compliant with the NATO standards is used for firing.
- The ammunition is stored in the conveyers that are capable to carry 40 projectiles and 40 powder charges ready to fire. Beds in the conveyers are universal for all the projectiles and powder charges used in the service. It is enabled storing new types of projectiles of the length up to 1000 mm in the projectile conveyor and load them by means of automatic loading mechanism.
- The system has been designed to meet the ballistic protection in accordance with STANAG 4569 Level 3 and mine protection STANAG 4569 Level 1.
- Crew compartments are air-conditioned.
- The power supply unit which provides electric and hydraulic energy for the drive of the turret aggregates and partially for the chassis aggregates without the need to run the chassis engine is placed between turrets in the rear.

### Producer

KONŠTRUKTA – Defence, a.s.  
Lieskovec 575/25  
018 41 Dubnica nad Váhom  
Slovak Republic



# 2.

## ARMoured VEHICLES AND MEANS OF TRANSPORT

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## Description

ALIGATOR 4x4 MASTER II is a multirole armoured vehicle for armed and special forces that features supreme properties in its class. It has optimal combat weight with massive payload properties and spacious interior for the crew plus inner equipment, surprisingly low silhouette and impressive ground clearance. Excellent track and terrain performance is achieved through independent axles, special suspension system and large wheels with run flat tyres including a central tyre inflation system. All these attributes create a vehicle that has outstanding cross country mobility, superb manoeuvrability, high speed capability, survivability and simple rapid deployment. Our unique monocoque hull structure provides excellent all round ballistic protection and the V – shaped underbody delivers additional protection for the crew against mines. Thanks to its unique properties this vehicle is suitable as a platform for a wide range of deployments

such as command, surveillance, reconnaissance, weapons station, CBRN and police. The vehicle is either amphibious ready or special designed amphibious version propelled by two powerful 75kW jets with joystick control and closing louvres. In addition to overcome conventional water obstacles, it is also intended to perform particular missions in open high seas. In water this vehicle version develops a maximum speed of 10,5 km/h. For floating/cruising in the open sea the vehicle's specially invented front breakwater nose is used to allow smooth propulsion designed to allow overcoming sea waves up to level 2 according to the sea conditions at wind 3Bft.

## Producer

KERAMETAL, s.r.o.  
Jašíkova 2  
821 03 Bratislava  
Slovak Republic



# AKTIS 4x4.1 R-08

SEE PAGE 61



## Description

Established in Slovak Armed Forces

Length: 7.38 m

Width: 2.55 m

Height: 3.35 m (without load).

Weight: 12.000 kg

Engine: MAN 6-cylinder, type D 0836 LFL50, 6871 cm<sup>3</sup> displacement, turbo charged, inter cooler, liquid cooled.

Horsepower: 176 kW at 2.300 rpm.

Transmission: 9+1 speed ZF type ECOMID 9S 1110

Transfer case: 2-speed, type VG 172.

Electrical system: 24 volt, negative ground.

Brakes: Air-over-mechanical.

Tyres: 365/85 - R20.

Fuel type: Diesel. F-34

Fuel capacity: 300 liters

Range: 700 km

Crew: 3

Additional: ABS. Hydraulic winch, STIS-system,

Variants: AKTIS 4x4.1 R-08 platform truck, AKTIS 4x4.1

R-08 mobile hospital, AKTIS 4x4.1 R-08 commander

truck, AKTIS 4x4.1 R-08 fuel transporter, AKTIS 4x4.1

R-08 container carrier

## Producer

TANAX TRUCKS a.s.

Červeňova 28

811 03 Bratislava

Slovak Republic



# Complete swimming drive system for amphibious vehicles

SEE PAGE 40



## Description

Basic components of propulsion and directional control for floating/cruising vehicles.

The 75kW floating/cruising system for armoured vehicles was developed by KERAMETAL. It was used in the production of the self-developed amphibious vehicle ALIGATOR 4x4 MASTER II, A1254. The vehicle passed all test for mobility and floating at home and abroad. The system allows vehicles up to 12 tons to become operational for floating/cruising at open high seas. The maximum speed of propulsion is 10,5 km/h at sea waves level 2 according to sea wind conditions 3Bft.

SWIMMING DRIVE SYSTEM FOR AMPHIBIOUS VEHICLES consists of the following components:

A) Jets including directional flaps and angular gearbox, driven mechanically through a special

single-stage reduction transfer for the drive of the swimming system and the direct rear axle drive, with mechanical conical permanent transmission gearbox.

B) Jets are available in three performance categories 40kW, 75kW and 90kW. The directional control system consists of a steering box and vehicle direction controls units.

## Producer

KERAMETAL, s.r.o.  
Jašíkova 2  
821 03 Bratislava  
Slovak Republic



# MAN HX32.440 8x8 BB (HX77)

SEE PAGE 61



## Description

Established in Slovak Armed Forces

Length: 10.30 m

Width: 2.55 m

Height: 3.36 m (without load).

Weight: 32.000 kg (70.400 lb.).

Engine: MAN 6-cylinder, type D 2066 LF34, 10.518 cm<sup>3</sup> displacement, turbo charged, inter cooler, liquid cooled.

Horsepower: 324 kW at 1.900 rpm.

Transmission: 12-speed ZF type 12AS 2302 OD, MAN TipMatic

Transfer case: 2-speed, type VG 172.

Electrical system: 24 volt, negative ground.

Brakes: Air-over-mechanical.

Tyres: 395/85 - R20.

Fuel type: Diesel. F-34

Fuel capacity: 800 liters

Range: 1000 km

Crew: 3

Additional: ABS. Hydraulic winch, CTIS-system, NBC protection

Variants: MAN 32.430(HX77) with add-on armour

## Producer

TANAX TRUCKS a.s.

Červeňova 28

811 03 Bratislava

Slovak Republic



# UDS 214.3 - Multi-purpose telescopic excavator 8x8 or 6x6 modification

SEE PAGE 27



## Description

UDS Excavator UDS 214.3 is self-propelled, multi-purpose landscaping machine mounted on RHEINMETALL MAN HX2 M44 8x8 NON-ARMORED CHASSIS (with possibility of armoring too). The machine is primarily intended for military engineering support groups and rescue corps and finds its application wherever there is a need for immediate action to save lives and property, during natural disasters, fires, industrial accidents or support before, during and after warfare.

Multi-purpose telescopic excavator UDS 214.3 in DEFENSE modification is primarily intended for support of engineer troops and finds its application wherever there is a need for immediate action to save lives and property, during natural disasters. It also plays an important role in military deployment, in securing technical means and structures supporting the operation of combat units.

- UDS 214 Superstructure with air conditioning operator cabin with on-board electronic diagnostic system
- Over-pressured operator cab is equipped with filter-ventilation system against chemical, biological substances, radioactive particles.
- Bosch Rexroth hydraulic components
- Superstructure engine - John Deere 4045 HF
- Additional covers for inner and outer boom arm
- Enhanced cover of rotating head, impact resistant, enhanced version of outer boom arm and upper frame.
- Telescopic boom and rotary head with increased mechanical and thermal resistance
- Additional storage boxes for equipment and tools. Storage boxes are integrated in lateral protection of machine.
- The light masking of the vehicle - the complete switch-off of all lamps without restriction on driving
- Additional equipment of the vehicle includes anchorage points on the vehicle body for transport on the railway carriage
- Operation in multiple climate zones (-32 °C – +49 °C)
- Electric harness with tactical metal connectors

- Possibility to power superstructure Engine with F63 FUEL (option)
- Protective frame on the operator's cab
- Handgun holders in operator cab
- Powerful LED working lights (6pcs – 2x on boom, 2x on cab roof, 2x integrated in upper frame)
- The paint system with integral protection ensures the vehicle have a climatic and corrosion resistance, resistance to the effects of combat poisoning agents and decontamination agents, masking effect in the visible and infrared range of the spectrum
- Non-metallic parts of chassis resistant to microbial degradation (mold, fungi, rot)
- Tool set - Shovel, ax, chicory (additional 30 upon request)
- Armored Excavator cabin door
- Antishock ergonomic seat
- Windshield & Side doors windows with ballistic protection
- Engine and hydraulic system Protection
- Antiradar upper coat

### 1.1. MAIN ADVANTAGES:

- **Mobility**  
Telescopic excavator on automotive chassis, large working radius with fast moving between positions. Excellent possibility in difficult terrain, thanks to the Tatra chassis.
- **Working range**  
The unique construction of the telescopic boom allows in the basic design horizontal reach 14.6 m.
- **Microtravel**  
The possibility of controlling the chassis from the excavator cab increases the work productivity and UDS operability in the workplace. An operator controls movement, turning and stabilization of the machine without getting into the chassis cab. Machine can operate in two modes: » „WORK“ mode – working with the superstructure and „DRIVE“ mode - enables control of the auxiliary drive – microtravel (to cover short distance on site), as well as the stabilizing supports directly from the superstructure cabin, without the need to start the undercarriage engine.
- **Rotating head**  
The possibility of rotating the tool in the full range n x 360 degrees increases machine variability during excavation works.



- Additional equipment e.g., hydraulic hammer, mulcher, nippers... etc. (see below)

#### Machine dimensions:

Length:	10 780 mm
Width:	2 550 mm
High:	3 980 mm
Ground clearance:	400 +/- 30 mm

#### Working parameters:

Output at shoveling (excavating): 115 m<sup>3</sup>.h<sup>-1</sup>  
 Maximum total excavating force from thrust and retraction of the boom: 85 kN  
 Load capacity on the tilting point of the telescope (without the use of extension arms):  
 - retracted telescope: 7 000 kg  
 - extended telescope: 2 600 kg  
 Superstructure revolutions: 8 rpm  
 Tool revolutions: 20 rpm  
 Maximum travelling speed: 105 km.h<sup>-1</sup>  
 Climbing ability on a hard surface: 80 %  
 Overall machine weight: 32 ± 2,5 t  
 Hydraulic system: REXROTH  
 Hydraulic power units:  
 - hydro-generator A11 VO 190  
 - control block RS G1076

#### Superstructure engine:

Type / Output: John Deere 4045 HF 285 / 93 kW at 2200 rpm, Emission level Tier III, on request others emission levels available, General description: compression ignition, four-stroke with direct fuel injection, in-line, vertical. Cooling: liquid-type with forced circulation and thermoregulator  
 Lubrication: engine oil circulation under pressure  
 Number/ volume of cylinders: 4 / 4,5 dm<sup>3</sup>  
 Maximum torsion moment: 540 Nm at 1400 rpm  
 The engine operation is governed by electronic control unit (ECU), which constantly monitors and evaluates 26 engine parameters. In case of emergency ECU takes autonomous measures (engine shut down when low oil level, etc.). UDS 214.3 superstructure is fitted with the second ECU, which monitors pressure in hydraulic circuits, interacts with engine ECU and informs the operator through multi-functional display in the superstructure cabin.

#### 1.2. Main usage:

- Building and maintenance of infrastructure (bridges, roads) in war zones
- Excavating and finishing earthworks
- Construction of routes
- Cleaning of banks, rivers and streams during floods
- Road maintenance and drainage channels
- Building of engineering networks in unrestrained disasters and natural catastrophes
- Support for reconstructions in dangerous regions
- Building combat outposts
- Replacement of a normal excavator in crises areas or war zones
- Protection of soldiers against mines, snipers etc.
- Low maintenance and cheaper than a heavy recovery tank. Lifting up to 7,5 tons
- Quick and safe use - fast mobility between stations
- Protection of the situation by a cabin weapon station

#### UDS 214.3 - Multi-purpose telescopic excavator 6x6 modification

Multi-purpose telescopic excavator UDS 214.3 in DEFENSE modification on RHEINMETALL MAN TG-MIL 6x6 NON-ARMORED CHASSIS

#### UDS 214.3 - Multi-purpose telescopic excavator 6x6 modification

Multi-purpose telescopic excavator UDS 214.3 in DEFENSE modification on TATRA 815-7 NON-ARMORED CHASSIS

#### UDS 214.3 - Multi-purpose telescopic excavator 8x8 modification IVECO DEFENSE VEHICLES

Multi-purpose telescopic excavator UDS 214.3 in DEFENSE modification on IVECO DEFENSE VEHICLES 8x8 NON-ARMORED CHASSIS

#### UDS 214.3 - Multi-purpose telescopic excavator 6x6 modification Firefighting

#### UDS 214.3 - Multi-purpose telescopic excavator 8x8 modification Firefighting

### Producer

CSM Industry s.r.o.  
 Daxnerova 756  
 980 61 Tisovec  
 Slovak Republic

# 3.

## AVIATION TECHNOLOGY AND TRAINING SIMULATORS

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# Flight & Navigation Procedures Trainer (FNPT)

SEE PAGE 66



## Description

Fixed and rotary wing applications for commercial, military and government organizations. Simulators are built and certifiable up to FNPT II MCC FAA/EASA standards.

Main parts of trainer:

- Replicated cockpit (full size)
- Digital Control Loading System
- Spherical screens, direct projection display systems,
- Image Generator and terrain databases (geo-typical and geo-specific)

- Technology
- Internal IOS
- VR goggles for Augmented Reality training applications (cockpit familiarization, gunnery training, etc.)

## Producer

Virtual Reality Media, a.s.  
Rybárska 1  
911 01 Trenčín  
Slovak Republic





## Description

Fixed and rotary wing applications for commercial, military and government organizations. Simulators are built and certifiable up to Level 6 (FAA) /Level 2 (EASA) standards.

Main parts of simulator:

- Full size original or replicated cockpit
- Digital Control Loading System
- Spherical screens with collimated or direct projection display systems
- Image Generator and terrain databases (geo-typical and geo-specific)
- Technology
- Internal, External IOS

FTDs for Military applications contains Debriefing station, simulated onboard weapons and special systems for tactical, combat and mission trainings, NVG compatible, etc.

## Producer

Virtual Reality Media, a.s.

Rybárska 1  
911 01 Trenčín  
Slovak Republic



# Full Flight Simulator (FFS) / Full Mission Simulator

SEE PAGE 66



## Description

Fixed and rotary wing applications for commercial, military and government organizations. Simulators are built and certifiable up to Level D category under FAA/ EASA/ICAO standards.

Main parts of simulators:

- Full size original or replicated cockpit
- Digital Control Loading System
- Motion-compatible collimated display systems providing up to 220° x 60° FOV or Direct projection display systems providing up to 270° x 90° FOV
- LED projectors with projector control and motorized optical edge-blending
- Image Generator and terrain databases (geo-typical and geo-specific)
- 6 DOF Motion System

- Technology
- Internal, External IOS

Full Mission Simulator for Military applications contains Debriefing station, simulated onboard weapons and special systems for tactical, combat and mission trainings, NVG compactible etc.

Simulation allows significant training improvement and substantial reduction in actual aircraft flight hours, manpower, equipment producing significant savings in expenditures.

## Producer

Virtual Reality Media, a.s.  
Rybárska 1  
911 01 Trenčín  
Slovak Republic



# Glass Cockpit and Pod Plane Equipment

SEE PAGE 52



## Description

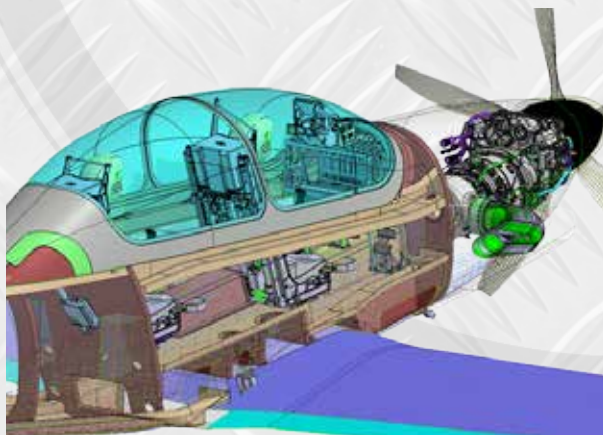
Raytech helps your dreams to take off. Since 1992, we have been focused on optimizing cable harnesses, saving precious weight and volume. By doing so, we assist with our knowledge in the conception and design of the most complex tasks.

The planning and integration of components such as glass cockpits and external payloads like gun pods, gimbal cameras and sensor arrays, e.g. thermal vision, represents a significant part of our field of expertise in the aviation sector.

We make your decision easy, at Raytech there is only one decision criterion: perfection.

## Producer

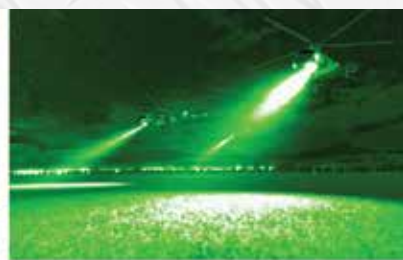
Raytech, s.r.o.  
Kopčianska 10  
851 01 Bratislava  
Slovak Republic



# Image Generator

## PowerVision PRO

SEE PAGE 66



### Description

Universal visualization platform designed for professional applications built on COSTS HW and supporting customized 3D terrain of large dimensions, detailed 3D airport models and areas of interest implemented into geo-specific and/or geo-typical terrains by Customer's choice.

PowerVision PRO provides an open licensing policy that allows successful integration in any region of the world. Compatibility beyond the requirements for training facilities of FAA / EASA certification bodies and military institutions.

Highly detailed terrain databases of the continents from authentic data sources (orthographic satellite / aerial images, elevation and vector data, LIDAR) in cm resolution. Volumetric pyro-effects of ammunition firing impact, explosions, animation of a protective cover of the technic, and unique intact animation.

### Producer

Virtual Reality Media, a.s.  
Rybárska 1  
911 01 Trenčín  
Slovak Republic





## Description

Software Defined Simulator (SDS) is a product platform developed by VRM, which provides modularity on synthetic training, and requires minimum implementation effort on hardware, easier and affordable.

SDS enables the interconnection of real-time platform level simulators for participation in simulated exercises and provide sufficient level of fidelity, for individual, mission, and tactical training.

System is built as COTS product. Open Architecture allows future upgrades and platform reconfiguration for numerous fixed and rotary wing or land applications.

## Producer

Virtual Reality Media, a.s.  
Rybárska 1  
911 01 Trenčín  
Slovak Republic





## Description

All-metal two-seater aircraft with a MTOW of 600 Kg, designed for basic training of military pilots. Thanks to its high standard equipment, excellent flight characteristics and low operating cost, the Viper SD4 AFT is a great choice for training air force pilots. The Viper SD4 RTC and Night-VFR types obtained EASA certificates. Both types, represent a brilliant way to become a professional pilot and the Night-VFR an ideal tool for night flying.

Why to choose Viper SD4 Air Force Trainer

- Air Force Training focused structure concept
- HOTAS like & retractable gear simulation controllers
- Robust all-metal structure
- Top-flight characteristics
- State-of-the-art avionic technology
- Ballistic recovery system for additional safety
- Tough, reliable, low fuel burn



## Technical specification

Categories	UL/LSA
Engine 4-stroke Rotax 912	ULS 100 HP
Tank volume	100 L
Consumption (NAT 99+) / 1 hour	16 L
Wing span	8,3 m
Length	6,4 m
Height	2,2 m
Take-off distance	185 m
Landing distance	160 m
Range	1 000 km
Cruising speed	215 km/h
Stall speed	75 km/h
Climb rate	5 m/s
Durability	6 hours
Max. take off weight incl. BRS	600 kg

## Producer

TOMARK, s.r.o.  
Strojnícka 5  
080 01 Prešov  
Slovak Republic



# 4.

## COMMAND, CONTROL, COMMUNICATION, COMPUTING, INTELLIGENCE AND INFORMATION SYSTEMS

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Deploy your own private or consortium blockchain

## Description

Leverage our cloud-based solutions to build, host and use your own blockchain apps and functions on the blockchain while we manage all the necessary tasks and activities to keep the infrastructure secure, agile and operational.



**Public blockchain:**

Anyone can read a public blockchain, send transactions to it, or participate in the consensus process. They are considered to be “permissionless”. Every transaction is public, and users can remain anonymous. Bitcoin and Ethereum are prominent examples of public blockchain.



**Private blockchain:**

The chain is controlled by a single organisation that determines who can read it, submit transaction to it, and participate in the consensus process.



**Consortium blockchain:**

The consensus process is controlled by a pre-selected group of corporations for example. The right to read the blockchain and submit transaction to it may be public or restricted to participants. Consortium blockchains are considered to be “permissioned blockchains” and are best suited for use in business.

## Producer

DECENT Group, a.s.  
Suché Mýto 1  
811 03 Bratislava  
Slovak Republic



**Dashboard**



**ECU**



**Intelligent Fuse Box**

## Description

Reduce data lines and increase the resilience of your vehicle with CAN and CAN compatible components from Raytech.

The primary purpose of a Controller Area Network (CAN) is to reduce cable harnesses and thereby save costs and weight. The special feature of Raytech's CAN bus systems is the decentralized structure. Instead of a centralized electronic box, we install several Electronic Control Units (ECU). Each ECU takes over the control of a specific part of the vehicle and can be quickly and easily exchanged by pre-programmed units in case of damage.

Raytech offers the design and construction of control units, as well as cable harnesses. Starting with the ECUs, Raytech can also provide the operator interfaces in the form of dashboards, displays and entire glass cockpit solutions. In addition, Raytech offers a large portfolio of CAN compatible devices, such as intelligent fuse boxes, central tire inflation systems (CTIS), pneumatic transmission controls (TC-PCU), fuel tank switch over systems, cabin and vehicle lighting and many more.

## Producer

Raytech, s.r.o.  
Kopčianska 10  
851 01 Bratislava  
Slovak Republic

# COMTAG® Mobile Communication System

SEE PAGE 25



## Description

Tactical communication on the move.

COMTAG® of the third generation is a family of devices for a software-defined, vehicular, tactical communication intercom suitable for any situation that calls for a reliable voice and a data communication with an interface that is user-friendly and comfortable. It is a universal solution for the needs of interconnecting the crew members and devices, as well as for accessing the vehicle's radio communication means in order to connect with other vehicles, command posts or crews outside of the vehicle.

### ARCHITECTURE – MODULARITY AND SCALABILITY

COMTAG® modular concept is based on a central unit that connects to the crew's user terminals. The central unit is also connected to various external communication sources, including tactical radios, mobile networks and alert detectors.

The link between the central unit and the user terminals is implemented through simple, low maintenance cabling following the star topology, making it possible to connect to the tank turret via a moving commutator. With partial modernization, it is possible to utilize the original intercom wiring to your advantage.

The COMTAG® modularity is realized primarily through tailoring its individual components to specific user requirements.

The primary COMTAG® division includes:

- A basic voice and data component
- An extended voice and data component

The COMTAG® modular architecture enables integration from light vehicles all the way to the complex environments of mobile command.

The functionality of a given configuration is determined by the software settings of the intercom's central unit, which can be modified at any time according to updated requirements without the need to replace the COMTAG® components or interfere with the physical installation of the system.

The COMTAG® module's design emphasizes minimal size, low weight and low power consumption.

### WORKING CONDITIONS

- Operating temperature: -30 °C – +55 °C MIL-STD 810F (G), for wheeled and tracked vehicles
- Storage temperature: -50 °C – +70 °C MIL-STD 810F (G), for wheeled and tracked vehicles
- Climate resistance: 98% humidity at 25 °C, IP 67 MIL-STD 810C, STANAG 2895, ed. 1. cat. A3, C1
- Mechanical resistance: Vibrations/impacts – 5G/20G MIL-STD 810F (G), for wheeled and tracked vehicles
- EMC: Emission/resistance

## Producer

Aliter Technologies, a.s.  
Turčianska 16  
821 09 Bratislava  
Slovak Republic



## Description

Reliable and safe routing of data in tactical mobile communication networks.

### Usage

- in communication networks of high mobile tactical units
- in ground, maritime and air mobile platforms
- in extreme weather and climate conditions

### Features

- built on Cisco ESR-6300
- 4 x GE 10/100/1000 LAN Ethernet port
- 2 x GE (10/100/1000 and SFP) WAN Ethernet metallic or optical port (optional)
- 1 x RS-232 console
- 1 x USB 3.0 host port (optional)
- ZEROIZE button to clear configuration data
- routing protocols: OSPFv3, RIPv2, BGP, EIGRP, IGMP
- standards: 802.1Q VLAN trunking, QoS, 802.1p, Point-to-Point protocol (PPP), GRE encapsulation
- hardware encryption for IPsec, SSL/TLS, IKEv2 security protocols
- NGE, QCR, AES-256, SHA-384, SHA-512 next generation encryption
- security tools: Firewall, NAT/PAT, Intrusion Prevention System (IPS), Intrusion Detection System (IDS), 802.1x, VPN
- Cisco Unified Communications Manager Express for 48 telephone users
- Cisco IOS Firewall
- management protocols: SNMP, telnet, SSH v2, NTP client, DHCP client and server
- designed according to MIL-STD-810F and MIL-STD-461F
- passive cooling
- small compact design: 244 x 220 x 44 (d x w x h mm - including connectors)
- simple integration to vehicles or standardized 19" transport cases
- low weight: 2.3 kg
- power supply: 10-32V DC, MIL-STD-1275 compliant

## Producer

Aliter Technologies, a.s.  
Turčianska 16  
821 09 Bratislava  
Slovak Republic





## Description

Reliable and safe data switching in tactical mobile platforms.

### Usage

- in communication networks of rapidly deployable and highly mobile tactical units
- in ground, air, and maritime mobile platforms
- in extreme weather and climate conditions

### Features

- built on Cisco ESS-3300
- 8 x 10/100/1000Base-T Ethernet port
- 2 x 1G/10GE port equipped with optical or metallic SFP module (optional)
- 1 x RS-232 console
- 1 x USB 2.0 host port (optional)
- ZEROIZE button to clear configuration data
- L2/L3 switch
- multicast support

- support of QoS and VLAN
- advanced security and authentication functions
- wide management options
- designed according to MIL-STD-810F and MIL-STD-461F
- passive cooling
- small compact design: 244 x 220 x 44 (d x w x h mm – including connectors)
- simple integration to vehicles or standardized 19" transport cases
- low weight: 2.3 kg
- power supply: 10-32V DC, MIL-STD-1275 compliant

## Producer

Aliter Technologies, a.s.  
Turčianska 16  
821 09 Bratislava  
Slovak Republic



# COMTANET® Deployable ICT Modules

SEE PAGE 25



## Description

ICT modules for deployable and mobile military units

### Designation

COMTANET® of the second generation provides voice, data and video services at provisional or mobile military unit command posts as well as civilian rescue units. It is an open, modular system that can be expanded and configured according to the user's requirements. All components are designed to comply with modern requirements for small size, low weight and power consumption for rapid deployment mobile systems. At the same time, they are built using reliable, state of the art IT technologies, and comply with industry standards and interfaces.

### MAIN SYSTEM CHARACTERISTICS

#### Modularity

Component sizes are based uniformly on the main unit with halfwidth of 19" and they are set in standardized transport cases. One such case constitutes an entire module.

#### Flexibility

With the offer of components and modules, it is possible to create custom-made systems. In the case of special requests, a module can be altered or designed and built with new functionality.

#### Scalability

The system configuration is set up according to the customer's required service capacity upon delivery. Should expansion be required, components or whole modules can be supplied to increase the capacity and performance of the service at any time.

### Open Architecture

COMTANET® architecture built on common open standards is conducive to implementing new services or when compatibility with third party services is required.

### Transportability

Small size and weight of the modules is a key factor in transporting and manipulation in areas with limited logistical options.

### Autonomy

The system can provide comprehensive voice, data and video services when deployed, regardless of location and the state of ICT infrastructure therein.

### Simplicity

The configuration, installation or use of the system does not require expert user knowledge. System administration for adapting to new circumstances or regular operation has been simplified as much as possible.

### Manageability

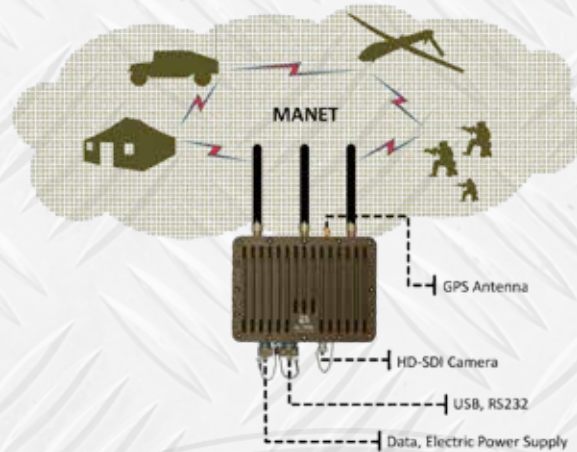
A standard feature of COMTANET® is a native management system for maintenance and monitoring of individual components and services. If required, the entire system can be connected to external management and maintenance tools.

### Durability

All modules are made of components that comply with the strict standards of working in extreme environments.

## Producer

Aliter Technologies, a.s.  
Turčianska 16  
821 09 Bratislava  
Slovak Republic



## Description

High-speed radio communications for tactical units.

### Usage

- high speed transfer of video, data, voice and position
- in rapidly deployable and highly mobile tactical units
- in extreme weather and climate conditions

### Features

- Mobile Ad Hoc Networking (MANET) radio with 3x3 MIMO
- Wave Relay® compatible (optional integration of other radio technology)
- frequency range: 1.35 GHz – 1.39 GHz (L-Band) or 2.2 GHz – 2.5 GHz (S-Band)
- RF modulation: OFDM
- built-in GPS receiver with support of CoT
- built-in video streamer with an option to connect an analog camera
- CTR-AES-256, HMAC SHA-256 hardware encryption
- advanced IP multicast algorithm
- remote management and configuration of the radio via WEB
- bit rate: up to 150 Mbps (20 MHz channel bandwidth)
- passive cooling
- dimensions: 218 x 215 x 70 (d x w x h mm)
- weight: 2.9 kg
- el. power supply: PoE++ (IEEE 802.3 bt)

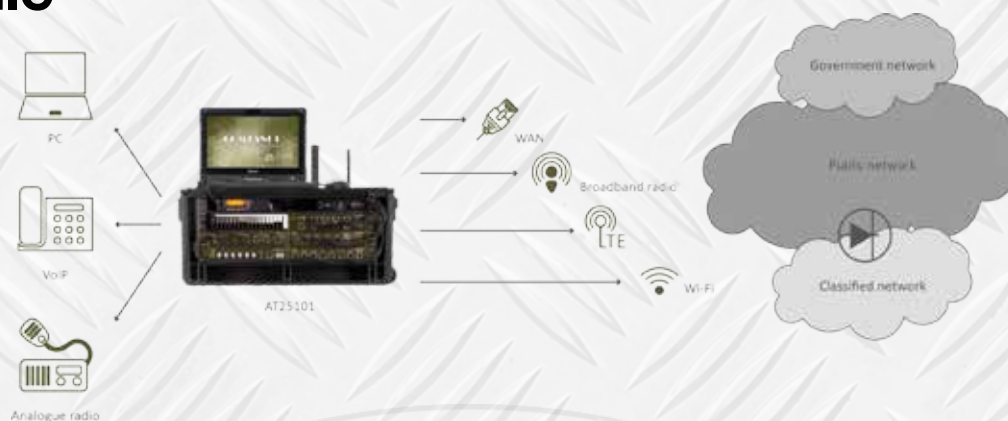
## Producer

Aliter Technologies, a.s.  
Turčianska 16  
821 09 Bratislava  
Slovak Republic



# COMTANET® Portable ICT Module

SEE PAGE 25



## Description

Immediate access to ICT services in crisis management.

### Usage

- rapid setup of a temporary command and control site
- provision of IP voice and data services
- in extreme weather and climate conditions

### Features

- basic configuration consisting of:
  - 1x PoE switch
  - 1x Router with WiFi
  - 1x Voice communication gateway
  - 1x Power supply unit
  - 1x DC power distribution & UPS unit
  - 1x LTE CISCO IR809G
- possibility to connect up to 6 end users
- possibility to expand with others modules

- reliable and secure data interconnection in tactical communication networks
- building a local broadband radio network
- variable access to the public data network using various technologies
- support for OSPF, RIPv2, BGP, EIGRP, IGMP, PIM, GMP routing protocols
- access to legacy digital and analogue telephone systems
- automatic access to radio networks
- MIL-STD compliant with passive cooling
- dimensions: 610 x 477 x 324 (d x w x h mm)
- weight: 34 kg
- power supply: 85 V to 265 V AC

## Producer

Aliter Technologies, a.s.  
Turčianska 16  
821 09 Bratislava  
Slovak Republic





## Description

Raytech's Central Tire Inflation System (CTIS) technology maximizes vehicle mobility by adjusting tire pressure to any terrain. Raytech's CTIS allows users to adjust tire pressure to the ideal level based on vehicle load, terrain type and usage. The pressure in each tire is controlled regardless of the vehicle load and terrain (e.g., mud, sand, snow, swamp, etc.). Whether on paved roads or rough terrain, Raytech's CTIS technology increases maneuverability, preserves tires and reduces fuel consumption while significantly lowering operating costs. In addition, Raytech's CTIS reduces interruptions associated with tire malfunctions, such as minor punctures, leaks or even getting stuck in mud.

## Benefits of CTIS Systems

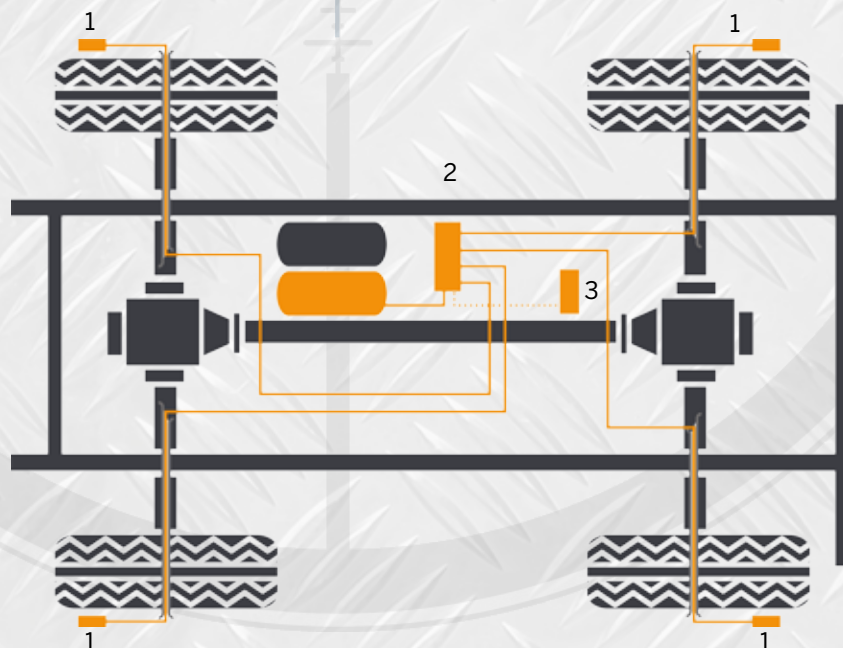
- Better grip & mobility
- Longer tire life, less tire leaks
- Enhanced transportability comfort
- Lower operating costs
- Alerts driver of potential tire problems
- Higher vehicle speeds over rough terrain
- Less structural stress on vehicle drive train
- Improved fuel efficiency across all kind of roads
- Improved ride quality and driving stability
- Complete design and installation of valves, PCUs, CAN bus wiring harnesses and display out of one hand.
- Worldwide customer support.

## Producer

Raytech, s.r.o.  
Kopčianska 10  
851 01 Bratislava  
Slovak Republic

## System Overview

- 1 Wheel Valve
- 2 PCU  
Pneumatic Control Unit
- 3 Display





## Description

Light up the darkest night and dispel the gloom with our powerful LED lighting solutions, or be the undetected shadow in the night and navigate with our infrared.

With Raytech, you can acquire everything from one source, starting from headlights, position and interior lights to rear lights. Our field-proven, state of the art and reliable modular LED solutions meet every customer's mil-requirement. In addition, we also develop solutions specifically according to our customer's need.

Raytech does not rely on mass. But on class, innovation and high quality. Our self-developed Safe Cabin Light deserves the spotlight. This cabin light with integrated rechargeable battery and combat mode, ensures emergency light even when all other systems have already failed.



## Producer

Raytech, s.r.o.  
Kopčianska 10  
851 01 Bratislava  
Slovak Republic



# Pan / Tilt HEADS

## MST01, MST02, MSU01, MSR

SEE PAGE 31



### Description

- Two-axis stabilized Pan / Tilt heads MSR-1/ST, MST 02/ST and MSU 01/ST are exceptional because of gyroscopic stabilization of motion in azimuth and elevation.
- They allow highly precise movements and are often used for optoelectronic applications and weapon systems mounted on vehicles.
- Group of EVPÚ's stabilized Pan / Tilt heads is also characterized by their high payload.

#### Motion range:

Azimuth  $n \times 360^\circ$ ;  $n \times 360^\circ$ ;  $n \times 360^\circ$

Elevation  $-95^\circ$  to  $+95^\circ$ ;  $-95^\circ$  to  $+95^\circ$ ;  $-95^\circ$  to  $+95^\circ$

#### Speed range:

Azimuth 0,005 to  $120^\circ/\text{s}$ ; 0,03 to  $120^\circ/\text{s}$ ; 0,03 to  $100^\circ/\text{s}$

Elevation 0,005 to  $100^\circ/\text{s}$ ; 0,03 to  $100^\circ/\text{s}$ ; 0,03 to  $100^\circ/\text{s}$

#### Position accuracy:

Azimuth 0,1 mrad; 0,2 mrad; 0,2 mrad

Elevation 0,1 mrad; 0,2 mrad; 0,2 mrad

#### Resolution:

Azimuth 0,1 mrad; 0,1 mrad; 0,1 mrad

Elevation 0,1 mrad; 0,1 mrad; 0,1 mrad

Maximum payload: 25 to 80 kg; 25 to 40 kg; 2 x 25 kg + 100 kg on the top

Interface ethernet: 100/10 Mbit, TCP / IP

Serial channels: 3 x RS232/422; 1 x RS232; 1 x RS422/485

Video switch: 2 to 2; 2 to 2; 2 to 2 / 3 to 2

Sensors output: 24/12/5 V; 24/12/5 V; 24/12/5 V

Power supply: 18 to 32 V DC; 18 to 30 V DC; 24 V DC (20-30 V)

Operating temperature:  $-32^\circ\text{C}$  to  $+70^\circ\text{C}$ ;  $-32^\circ\text{C}$  to  $+70^\circ\text{C}$ ;  $-32^\circ\text{C}$  to  $+55^\circ\text{C}$

Storage temperature:  $-40^\circ\text{C}$  to  $+70^\circ\text{C}$ ;  $-40^\circ\text{C}$  to  $+70^\circ\text{C}$ ;  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$

### Producer

EVPÚ, a.s.

Trenčianska 19

018 51 Nová Dubnica

Slovak Republic





## Description

Aerial silent monitoring, long term surveillance and radio retransmission.

**SILWA (Silent Watcher)** - the Unmanned Airship Solution offers a unique platform for intelligent airborne monitoring, which provides unexampled possibilities for silent and long-term surveillance and reconnaissance, including movement over densely populated areas.

### End services for users:

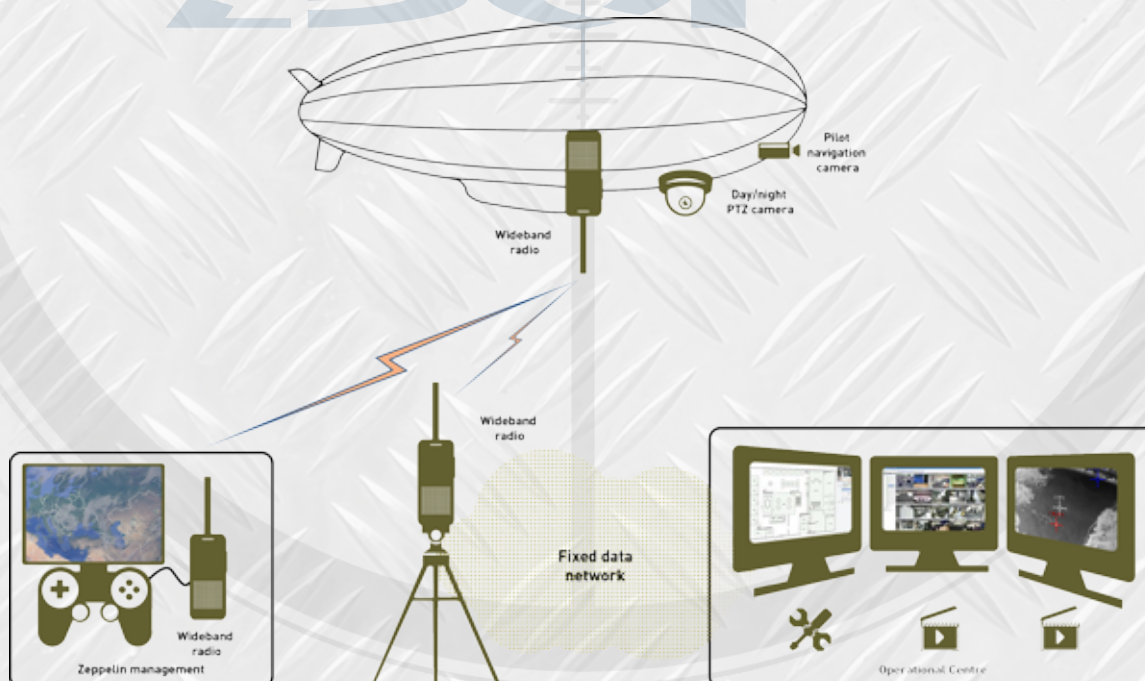
- Video, data and voice transfer
- Secure encrypted communications
- Advanced analytical tools
- 30 times zoom - independent thermal imaging
- May be used as a relay transmitter for own network
- Transfer of statuses and observation areas to GIS
- Interface for existing telecommunications systems

### Key benefits

- Length: 13.5 m
- Filling medium: helium
- Max. flying altitude: 1 600 m
- Max. travel speed: 45 km/h
- Max. payload: 15 kg
- Manual and autonomous operation
- Automatic return to home
- Automatic terrain copying
- Safe and controlled emergency landing

## Producer

Aliter Technologies, a.s.  
Turčianska 16  
821 09 Bratislava  
Slovak Republic



# Turret Management Computer for T-72 – TMC, K1M5

SEE PAGE 31



## Description

- Turret Management Computer for T-72 – TMC, K1M5

## Producer

EVPÚ, a.s.  
Trenčianska 19  
018 51 Nová Dubnica  
Slovak Republic



## Tethered Drone



### Description

Rapidly deployable tactical mast for unlimited aerial surveillance and enhanced radio coverage.

#### Usage

- Rapid setup of communication and sensory infrastructure
- Increase of radio coverage in areas of interest
- Implementation of various types of sensors such as daytime camera, thermal camera, etc.
- In times of floods, earthquakes, fires, industrial disasters, etc.
- Command posts of military units, special operations forces, immediate reaction units, fire brigades and rescue teams, object and border protection

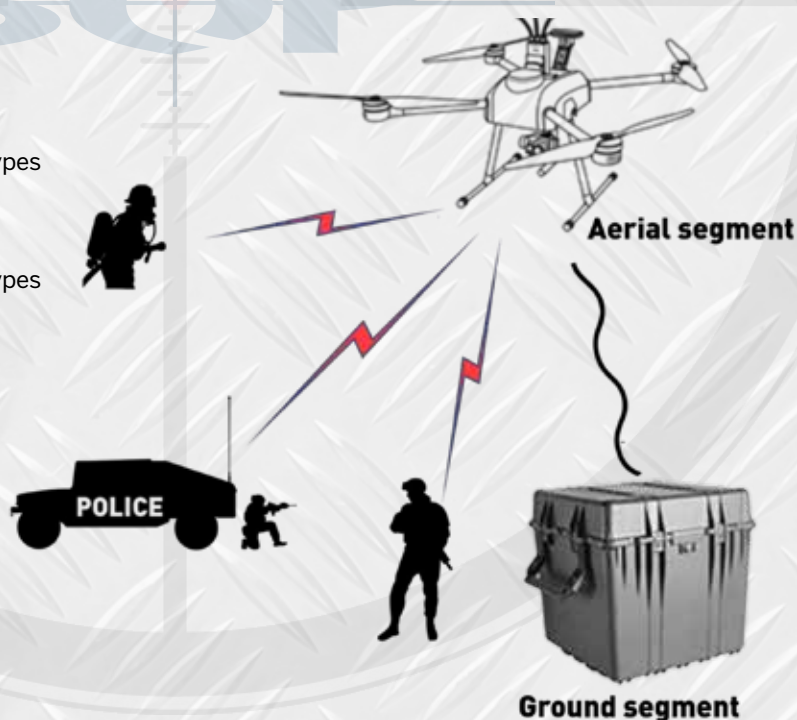
#### Features

- Max. height of flight: 100 m
- Max. speed of wind: 12 mps
- Max. payload: 3 kg
- Camera system:
  - EO camera 1080p / 10x optical zoom
  - IR thermal camera
  - the possibility to integrate different types of cameras
- Radio technology:
  - high speed data radio
  - the possibility to integrate different types of handheld radios

- The possibility to integrate various sensors and devices (loudspeaker, LED lighting, air quality sensor)
- Ready to fly: within 10 minutes
- Weight:
  - aerial segment: 8 kg
  - ground segment: 40 kg
- Transporting dimensions:
  - ground segment: 521 x 521 x 489 mm
  - aerial segment: 673 x 673 x 641 mm

### Producer

Aliter Technologies, a.s.  
Turčianska 16  
821 09 Bratislava  
Slovak Republic





## Description

Set of components for anti-aircraft twin gun ZU 23M brings the modernization of automatic control system with a computer, the integrated laser rangefinder, search through the recognition of moving objects, the automatic target tracking and many others.

All original components and functions remain functional as a backup mode.

### Technical specification

The modernization set consists of:

- Optoelectronic box with day camera, thermal imager and laser range finder
- Fire control system
- Operator's control panel
- Joystick
- Elevation/Azimuth servo drive
- Elevation/Azimuth gear box
- Distribution box
- Battery box
- Battery charger
- Helmet micro monitor
- Set of cables
- AC generator 230V / 50 Hz

### Features:

- Auto target video tracker
- Operation in day / night conditions

### Technical parameters:

Servo-drives Elevation Azimuth

Motion range  $-5^{\circ}$ -  $85^{\circ}$  n x  $360^{\circ}$

Min. angular speed  $< 1$  mrad/sec  $< 1$  mrad/sec

Max. angular speed  $> 45^{\circ}/\text{sec}$   $> 80^{\circ}/\text{sec}$

Max. acceleration  $> 0,6$  rad/sec<sup>2</sup>  $> 1$  rad/sec<sup>2</sup>

Max. angular tracking speed from joystick  $> 45^{\circ}/\text{sec}$   $> 80^{\circ}/\text{sec}$

Max. angular speed from manual control app.  $40^{\circ}/\text{sec}$  app.  $50^{\circ}/\text{sec}$

Supply voltage 18 V DC – 32 V DC

Supply current in standby 26 V/2 A  $\pm$  0,5 A

Ambient temperature  $-25^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$

Weight of upgrade 80 kg – mechanical and electrical parts

50 kg – battery 24 V/95 Ah

Covering IP 65

## Producer

EVPÚ, a.s.

Trenčianska 19

018 51 Nová Dubnica

Slovak Republic



# 5.

## SECURITY TECHNOLOGY AND SERVICES

Bozena Police Protection Unit .....	123
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# Bozena Police Protection Unit (only BPPU in the next)

SEE PAGE 68



## Description

BPPU is designed to protect the law-enforcement units in action in streets and urbanized areas whenever peace maintenance is required.

BPPU is the well protected and easy deployable shield which can be flexibly used in favor of actual operational needs as a tool:

- to direct or disperse gathered crowds into desired areas or directions;
- to block entirely narrow streets and to create safe and effective access control to protected areas and buildings;
- to execute direct observation and monitoring of the operational situation;
- communication with rioters through the loudspeakers;
- for some anti-terrorist operations, fighting against snipers, allowing a safe access to buildings and other elevated positions;
- with use of the shield it can be flexibly used for removal of smaller obstacles;
- with use of an easy attachable bulldozer blade it can be flexibly used for removal of bigger obstacles;
- BPPU provides higher level of safety and security for the police forces on one side as well as better handling with the passive and not violent members of the crowd on the other side. obstacles.

BPPU consists of the following main parts:

### A. CARRIER – Prime mover

Carrier of the BPPU is in principle a telescopic handler with hydrostatic power transmission. The vehicle is significant with its compact design, unequalled maneuverability and performance.

The operator has the advantage of spacious cabin with convenient operator controls and clear instrument panel which can be read in all lighting conditions adjusted with cameras and monitors for frontward and backward views.

The operator's cab is covered with ARMOX 500T armoured plates and windows are filled with ISOCLIMA bullet proof glass satisfying FB6 level of ballistic protection (7.62x51 mm NATO ball). Its structure complies with ISO 3449 (FOPS) and ISO 3471 (ROPS) standards. of the following main parts:

The four drive wheels are all steered using a hydraulic servo-assisted system. Highly resistant run-flat-tires are resistant to oil, wear and bullets punctures. The operator has a choice of three steering modes, as well as automatic wheel re-synchronization in the event of misalignment.

Three steering modes:

1. Front wheel steer (for road use)
2. All wheel steer (for best maneuverability)
3. Crab steer (for side motion)

An advanced fire protection system consists of three independent fire suppression systems for engine compartment, Carrier's outer envelope and tires. The system is activated automatically whenever a fire occurs in a close distance of the Carrier. An additional hand held fire extinguisher is attached to the Carrier's cab.

### B. SHIELD – Barrier

Shield of BPPU is foldable; the minimum width is 4.5 m and maximum 7.5 m. The operator can adjust the required shield's width through hydraulic system. Maximum height is 3.25 m and the lifting platform barrier reaches to 4.2 m. The Shield's weight is 2,960 kg. It can be lifted and effectively used as a gate for an instant deployment of rapid reaction forces. The shield's frame as well as the lifting platform are made of the lightweight aluminium composite covered up to height of 2 m from the ground with ARMOX 500T steel plates which provide the FB6 level of ballistic protection (7.62x51 mm NATO ball) and it is also flame retardant. The Shield construction secures best possible conditions for protection of the law enforcement units. Eight visors (windows) filled with ISOCLIMA bullet proof glass provide good conditions for visual observation and monitoring of the crowd situation. The shield comes equipped with launching ports designed for use



of guns or other rubber projectiles launchers. Powerful xenon lights provide good visibility at night and two spot lights on top of a lifting platform can be directly operated by the police. The lifting platform is designed to bear two fully equipped members of the riot-control unit.

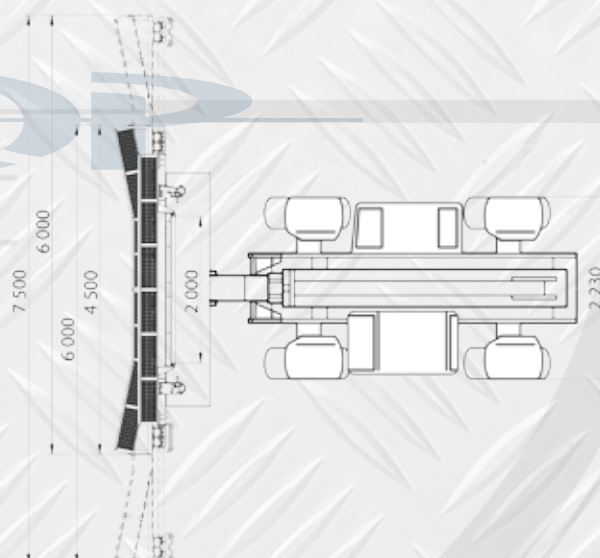
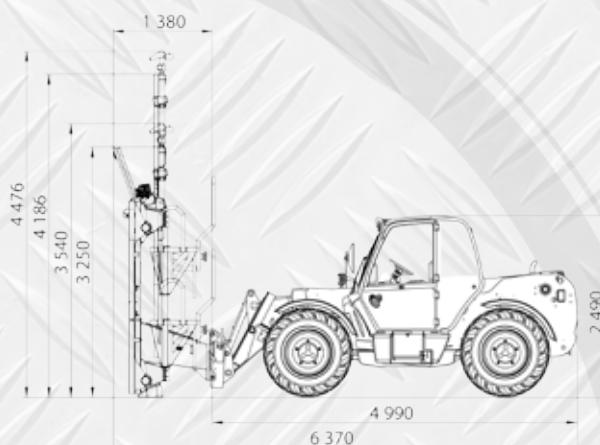
Water cannon placed at the platform serves to disperse violent crowd. The tear-gas sprayer with four nozzles on the shield's top rim is intended for the close self-defence of the Shield in case of direct attacks of rioters. The tear-gas covers an area of 10 m in front of the Shield. The shield is equipped with police lights, siren and loudspeaker for use by the commander/leader, both for instructing the crew and also for appealing to the rioting crowds.

#### WEIGHTS

Total weight of Carrier with Shield	12,160 kg
Weight of Carrier	9,200 kg
Weight of Shield	2,960 kg

#### PERFORMANCE

Engine	diesel, turbocharged, common rail fuel injection
Rated power output	81 kW
Rated maximum load	4,100 kg
Maximum speed	30 km/h
Maximum lift height	7 m
Maximum forward reach	3.7 m



#### Producer

WAY INDUSTRIES, a.s.  
Priemyselná 937/4  
963 01 Krupina  
Slovak Republic

# 6.

## LOGISTIC AND SERVICE

NIXUS .....	126
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## Description



### NIXUS-PRO-X

High-pressure inflatable modular system based on 6m wide tents and inter-connection X-modules. The system offers endless combinations of connecting tents, containers and vehicles to create command or hospital complexes. (United Kingdom)



### NIXUS-PRO

Modular high-pressure inflatable tents for universal use. Available in width 5,1 and 6,1m. (UNFICYP). Product is introduced in Slovak Armed Forces.



### NIXUS-ERA

Modular high-pressure inflatable tents for universal use. Available in width from 3,5m to 6,0m. (Italy). Product is introduced in Slovak Armed Forces.



### NIXUS-ERA-DECON

Decontamination corridor tent suspended under the exoskeleton high-pressure inflatable structure, ensuring quick installation, extreme stability and easy decontamination of the tent space after its use. The tent is delivered separately or as a comprehensive turn-key solution. (Belgium)



### NIXUS-FOLD-ENDO

Universal accommodation tent based on compact aluminium foldable frame. Available in width from 4,0 to 6,5m. (Slovakia). Product is introduced in Slovak Armed Forces.



### NIXUS-FOLD-HOSPITAL

Hospital corridor system based on FOLD-ENDO and FOLD-EXO foldable frame tents. The system offers endless combinations of connecting tents, containers and vehicles to create hospital complex. (Czech Republic)



### NIXUS-FOLD-ISO

Shelter with a compact folding aluminum frame, ensuring reliable covering of the space between the containers in a fast time with a minimum number of people. The ISO-H version works like a half tent attached to a container. ISO cooperates with 20ft and 40ft containers. (United Kingdom)



### NIXUS-RIBS

High-pressure inflatable hall, using a patented system of multi-tube beams with extremely high strength. With a span of up to 12 m, it is suitable as a storage tent, canteen or as in this case a helicopter maintenance hangar. (Canada)



### NIXUS-HUB-ISO

Light modular hall, which is based on aluminum profiles, forms a compact system with containers placed on their sides. In a width of up to 24 m, it can create a hangar for most types of combat equipment. (United Kingdom)



### NIXUS-ECOS

Expandable Container Shelter, which expands 5x the original floor plan. The side walls of the container tilt horizontally and form a base, which is covered by a roof with high-pressure inflatable beams. The system is delivered including a lifting system so that a two-member team without heavy equipment can prepare the container for operation in a short time. (Available in Q1/2022)

## Producer

Zepelin, s.r.o  
Gen. M. R. Štefánika 7061  
911 01 Trenčín  
Slovak Republic

# 7.

## MISCELLANEOUS

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High precision reduction gears TwinSpin® and actuators DriveSpin® .....	134





## Description

Remotely operated mini class demining system developed to work especially in areas with numerous obstacles which avoid proper pass-ability of larger machines. Bozena 4+ is offering high logistic mobility.

Specifics / good to know

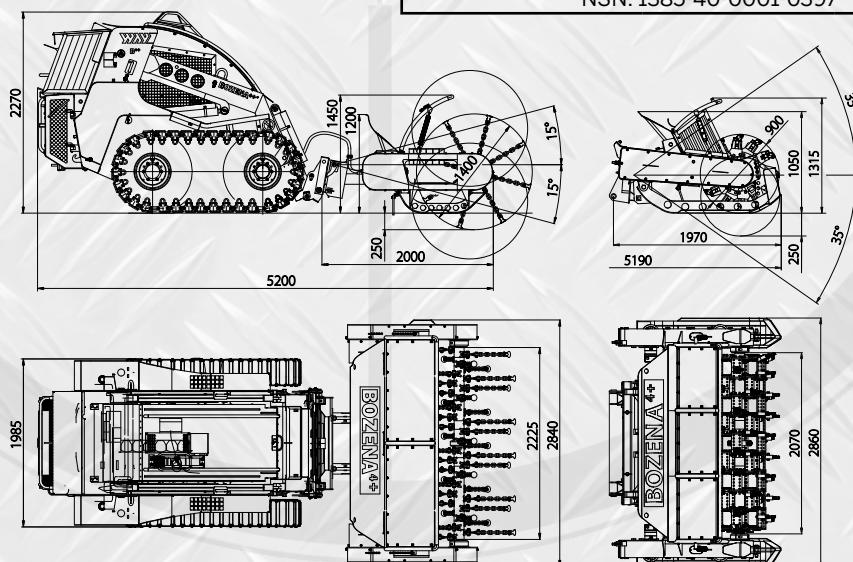
- withstanding of AT mine explosion
- withstanding of high temperatures and high humidity
- higher effectiveness, more work less maintenance
- low running costs
- various attachments
- multi purpose usage
- flexible and maneuverable in space limited areas
- fits in ISO standard container
- ready to use in a few minutes
- easy for maintenance and service
- removable tracks and rubber wheels
- made in EU

## Producer

WAY INDUSTRIES, a.s.  
Priemyselná 937/4  
963 01 Krupina  
Slovak Republic

## SPECIFICATIONS

FLAIL UNIT		TILLER
Total weight of BOZENA 4+ system	6,983 kg	7,700 kg
Width of clearance	2.2 m	2.07 m
Soil depth penetration	up to 25 cm	up to 25 cm
Operating RPM	350-500 min <sup>-1</sup>	350-500 min <sup>-1</sup>
Driving speed	max. 9 km/h	max. 9 km/h
ENGINE		
DEUTZ BF 6L914	6 - cylinder, turbocharged diesel,	
	with direct fuel injection, air cooled	
Rated power output at 2,500 rpm	110 kW/147HP	
Fuel consumption max/average	19.5 l/h / 13.0 l/h	
WORKING SPEED		
Light soil / small vegetation	up to 3,500 sqm/h	
Medium soil and vegetation	up to 2,100 sqm/h	
Heavy soil / dense vegetation	up to 1,100 sqm/h	
REMOTE CONTROL		
Max. range	5,000 m	
NSN: 1385-40-0001-0397		





## Description

Remotely operated medium class demining system developed to work especially in areas with high temperatures and high humidity. Demining system with the highest moving speed in the class.

### Specifics

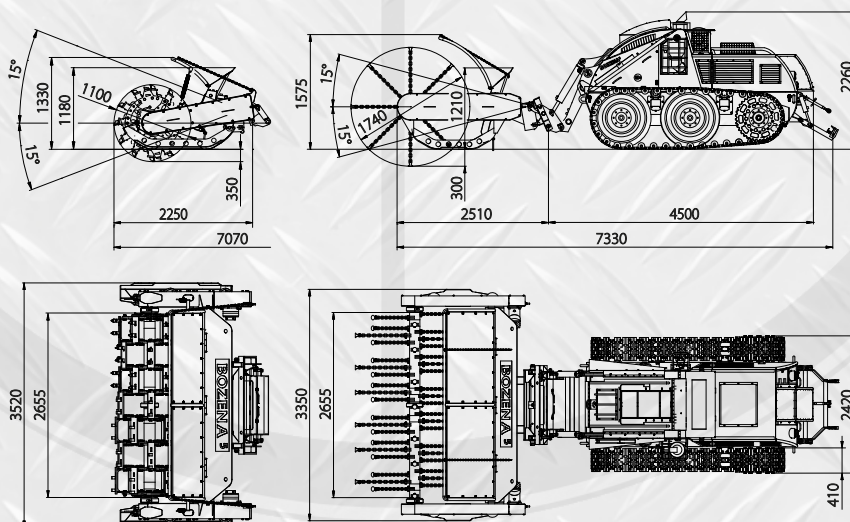
- withstanding of AT mine explosion
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- various attachments
- multi purpose usage
- flexible and maneuverable in space limited areas
- fits in ISO standard container
- ready to use in a few minutes
- easy for maintenance and service
- removable tracks and rubber wheels
- made in EU

## Producer

WAY INDUSTRIES, a.s.  
Priemyselná 937/4  
963 01 Krupina  
Slovak Republic

## SPECIFICATIONS

	FLAIL UNIT	TILLER
Total weight of BOZENA 5+	12,340 kg	13,210 kg
Width of clearance	2.65 m	2.65 m
Soil depth penetration	up to 30 cm	up to 35 cm
Operating RPM	350 - 500 min <sup>-1</sup>	350 - 500 min <sup>-1</sup>
Driving speed	max. 9 km/h	max. 9 km/h
ENGINE		
TATRA T3C-928-81 turbo	8 cylinder, diesel, with direct injection, air-cooled	
Rated power output at 2,500 rpm	270kW/362HP	
Fuel consumption max/average	60.0 l/h / 37.0 l/h	
WORKING SPEED		
Light soil / small vegetation	up to 5,900 sqm/h	
Medium soil and vegetation	up to 3,400 sqm/h	
Heavy soil / dense vegetation	up to 1,500 sqm/h	
REMOTE CONTROL		
Max. range	5,000 m	
NSN: 1385-40-0001-0395		





## Description

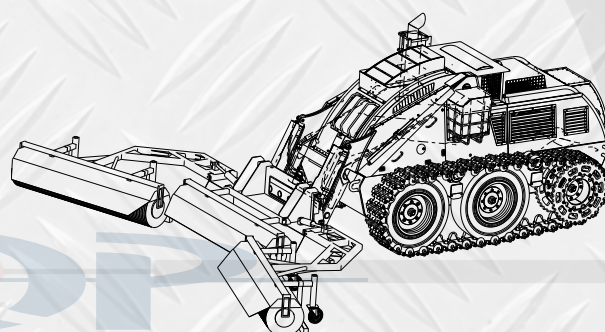
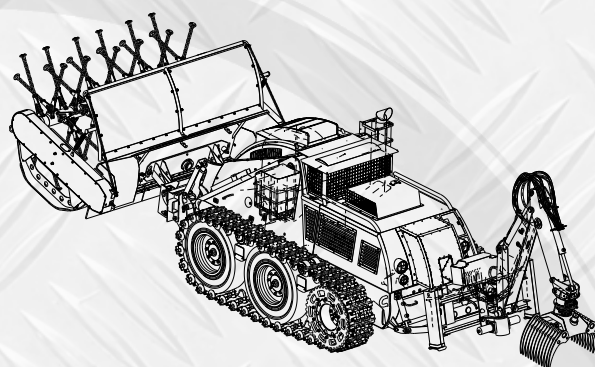
Besides the demining operations and EOD and IEDD operations, BOZENA systems can also fulfill other engineering and construction task. Variety attachments are available for all Bozena models for these purposes.

### Excavator /Manipulator Arm

is designed for safe (remotely controlled) and precise manipulation with mines, UXO and IEDs.

### CBU Collector and Dispenser

is a special auxiliary attachment designed for clearance of airfield runways in case of contamination as a result of Cluster Bomblet Units (CBU), alternatively Improvised Explosive devices (IED) and Unexploded Ordnance / Unexploded Bombs (UXO / UXB).



## Producer

WAY INDUSTRIES, a.s.  
Priemyselná 937/4  
963 01 Krupina  
Slovak Republic





## Description

### Technical specification

Pre-assembled tactical cables based on Expanded Beam connectors (ProBeam, TacBeam, HMA ...) for temporary communication in the field

Compatibility: M83526/20 & 21  
Fiber types: Singlemode or Multimode  
Insertion loss: < 1,5dB (typical 0,7 dB)  
Temperature range: -40 °C to +85 °C

Product in use by Slovak Armed Forces

## Producer

Foss Fibre Optics s.r.o.  
Odborárska 52  
831 02 Bratislava  
Slovak Republic



# Night vision goggles

SEE PAGE 54



## Description

Night vision goggles - a military hand-held, head-mounted or helmet mounted night vision system that enables walking, driving, weapon firing, short-range surveillance, map reading, vehicle maintenance, and administering first aid in both moonlight and starlight.

## Producer

S.M.S., spol. s r. o.  
Pionierska 423  
018 41 Dubnica nad Váhom  
Slovak Republic



# Reel in painted aluminium

SEE PAGE 33



## Description

Tactical reel

Material: Reel in painted aluminium  
Capacity: Up to 500m (based on 5,5mm tactical cable)

Features: Room for storing of connectors,  
Double flange for easy access to the inner end, Stackable

Product in use by Slovak Armed Forces

## Producer

Foss Fibre Optics s.r.o.  
Odborárska 52  
831 02 Bratislava  
Slovak Republic



# High precision reduction gears TwinSpin® and actuators DriveSpin®

SEE PAGE 59



TwinSpin®



DriveSpin®

## Description

SPINEA® focuses on the development and production of precision positioning units for azimuthal and elevation axis of opto-electronic surveillance systems, tracking antennas and anti-drone systems, as well as the development of reduction gears for military robotics, remotely operated weapon stations, force-feedback systems, simulators and other rotary motion control applications.

## Key benefits:

Fast and highly accurate azimuth-elevation positioning

- High shock load resistance and low vibrations
- Compact design and small dimensions for limited installation space
- High torque density i.e. torque to size ratio  $[\text{Nm}/\text{cm}^3]$
- Smooth movement in wide range of speed
- High reduction ratios
- High reliability in harsh environment ( $-40\text{ }^{\circ}\text{C}$  to  $+60\text{ }^{\circ}\text{C}$ )
- Long life in critical and all weather cycles
- Maintenance free

## Producer

SPINEA, s.r.o.  
Ku Magašu 702/3  
080 01 Haniska, district of Prešov  
Slovak Republic





SbIA

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