

## MILITARY SYSTEMS & Technology

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The Defence Suppliers Directory Magazine



#### DEFENCE & SECURITY INTERNATIONAL EXHIBITION

2018

## EUROSATORY

11 - 15 JUNE 2018 / PARIS





www.eurosatory.com





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#### elcome to this edition of the **Military Systems** & Technology Magazine.

As an established web portal for the International Defence & Aerospace Industry, we strive to provide a comprehensive and detailed listing of Military Equipment Suppliers, Products and Services. This newsletter is designed to keep you up-to-date with latest news and events within the Defence Industry's Governing Bodies, Organisations and Companies.

#### The Defence Industry Web Portal

For more information, technical guidance or the latest subscription packages available for Military Systems, Naval Systems and Security Systems, please contact us where one of our team will be more than happy to advise you.

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2018

#### EUROSATORY

11 - 15 JUNE 2018 / PARIS

# Hi-Tech Show

# Eurosatory 2018 promises to showcase latest technological innovations

Eurosatory is the world leading event dedicated to land and airland defence and security organised by COGES. In 2016, Eurosatory gathered 1,571 exhibitors from 57 countries, 57,024 international visitors from 140 countries and 212 official delegations from 94 countries. Eurosatory provides a time-effective opportunity to meet the entire land and airland defence and security industries, to discover the latest technological innovations in the defence and security fields and to help exhibitors and visitors to expand their professional network, prospective new markets and generate business opportunities.

## What will be the focus of Eurosatory 2018?

Eurosatory 2018, to be held from 11-15 June in Paris at the Paris Nord Villepinte Exhibition Centre, will focus on the demonstration of latest products and technology innovations, business development services for exhibitors and visitors and organisation of conferences about land and airland defence and security issues and future challenges.

Eurosatory is an exhibition where industrial manufacturers and research organisations present their new products, but also some extremely innovative technologies with a very high technology readiness level offering prospects of medium and short-term opportunities for production synergies. No less than 500 new products or services were identified at the 2016 Eurosatory exhibition.

Eurosatory's visitors have various functions and profiles and diversified needs. They are high-level authorities, operational personnel, experts and buyers, international press. The number of decision-makers and institutional users grows every year.

Eurosatory is a great opportunity to develop a strong international network of clients and to generate business opportunities. One of the first priorities of the organiser for this year remains to highlight multiple services both for exhibitors and visitors as one-to-one business meetings, strategy consulting, visitors — exhibitors connection service, exhibitor conferences. They will allow high level and strongly motivated visitors to meet exhibitors representing each line of product list, to develop professional contacts from all over the globe and to get immediately available solutions.

This edition of Eurosatory remains to be a fast-expanding forum for ideas and reflection. Over 80 conferences are expected with more than 200 international speakers and 3,000 attendees. They will study defence and security topics, present innovative products and make economic and strategic analyses. As in previous years, Eurosatory 2018 will invite highly qualified and motivated professional visitors from the five continents. The audience will comprise international decision-makers and institutional users.



In 2016 issue of Eurosatory the main trends were mobility, homeland security, UGVs, aviation, lethal and non-lethal weapons, military technologies in aid of populations and refugees, protection of people, physical and digital infrastructure. Eurosatory 2018 will continue to develop these topics and to present new challenging topics for a discussion.

Unique and international thematic events will take place during Eurosatory 2018: meetings of Army Aviation, Megapolis European Firefighters and CBRNe. Organised with the participation of French and foreign Operations Officers, exhibitors from the defence and security domains (from prime contractors to subcontractors), state representatives, experts and VIPs these meetings also rely on a conference cycle dedicated to operations feedback and power projections in the future.

What innovations can participants expect at the Show? Eurosatory is the event where the industries from the defence and security domains exhibit their products and technical expertise, where customised answers to international requirements are presented, where all the experts of the defence and security worlds are present and where innovative products are on show.

Eurosatory redesigns its organisation in 2018, a third hall – Hall 5B – will be opened. This new hall will allow to expand the indoor exhibiting area and to enlarge number of presented products. It will be focused on security topics.

This redesign will affect the entire exhibition including the reorganisation of foreign pavilions.

The exhibition will get a new live demonstration area for the presentation of innovative products and technologies. It will increase a visibility for the participating exhibitors and their products and thus secure increasing visits to their stands. The new live demonstration area will be located closer to the exhibition to facilitate the movement of exhibitors and visitors.

Eurosatory, the blockbuster of the global defence and security industry, covers multiple innovative technology sectors. In previous years, there were such sectors as the CRBNe, Infrastructure and critical facilities protection, Embedded Electronic, Training & Simulation, Measurements & Testing Centres, UAVs & UGVs. In 2018, participants will discover a new technology cluster: Intelligence.

Eurosatory consolidates its rank as the world leader in land and airland defence and security. A wide range of products and systems will be presented and worldwide high-level attendees will come to the exhibition. The next edition of this 'must-visit' event will be held from 11 to 15 June 2018. It already seems to be promising and spectacular. Find more information about Eurosatory on

www.eurosatory.com.

# Noptel launches ne for the long distanc rangefinder family









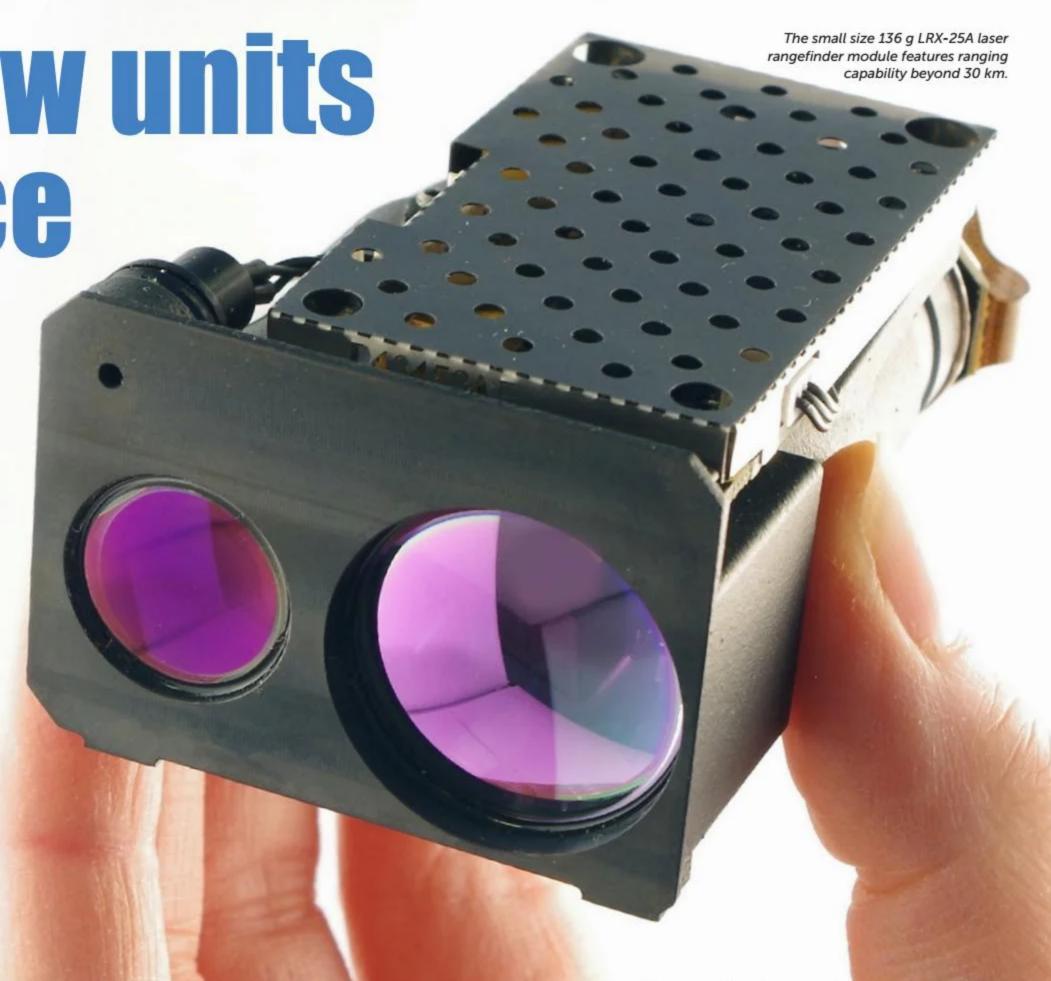
# Nontel

# The tiny 27 g LRF127 laser rangefinder module features ranging capability up to 3 km

### long distance laser rangefinder family has enlarged with new modules.

Noptel long distance laser rangefinder family has enlarged with new modules. The small size open modules have waken huge interest among the system integrators since the start of the launch. Several system integrators have already adopted the new rangefinders into their new projects and products and many negotiations are actively ongoing.

Interesting part of Noptel laser rangefinder technologies are the middle range and long range laser rangefinders. These small size and light weight modules are provided for system integrators and manufacturers globally. The rangefinders exploit laser pulse flight time measurement technology, special cumulative measurement method and advanced signal processing techniques. By using this cumulative measurement method Noptel can exploit standard diode lasers and eye safe technology, yet reaching distance to several kilometres and at good measuring rate. Furthermore, the utilized technology allows competitive pricing and very small size of the units. Noptel started to utilize the cumulative measurement technology in



rangefinders in a project with a Belgian company FN Herstal, with whom Noptel developed a state-of-the-art multi-technology fire control unit FCU. Today FN Herstal is 100% shareholder of Noptel.

#### **Technology**

The technology developed for the FCU has later been exploited in the Noptel LRF modules. The family of LRF modules comprises units from tiny 27g unit up to 445g unit. Typical measurement range for the smallest units is 1-3 km and for the high performance unit, which weighs only 136 g, beyond 30 km.

acquisition, fire control and reconnaissance as well as weapon sights, drones and UAVs. The modules have been designed to operate as an OEM part of the complete system and controlled by the master unit. The modular structure of the modules allows mechanical restructuring of the units, when necessary. This is especially important, when the available space in the master unit is limited.

Noptel will present the latest LRF technology and new modules at EUROSATOTY 2018 in Paris at FN Herstal booth on 11 – 15 June 2018.

#### **Applications**

Typical applications for these modules are systems for thermal imaging, observation, surveillance, target

www.noptel.fi



# Tactical HF & VHF Radio

Barrett tactical HF and VHF voice, data, interoperability and security radio communications solutions have been field proven in over 150 countries.

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# Selecting a High-Speed Interconnect & Keys to a Successful Implementation

When designing applications utilizing high-speed interconnects, it's vital to navigate around all potential "speed bumps" along the signal's path.

Factors such as stack ups, tolerances, via design, trace widths, plating, and copper etching will have to be understood and mastered to achieve an optimal signal path. Any design check list should also include the connector, which can often be overlooked. Connectors must be scrutinized or they may wreak havoc on the system's signal integrity. A proper connector should provide a few key elements:

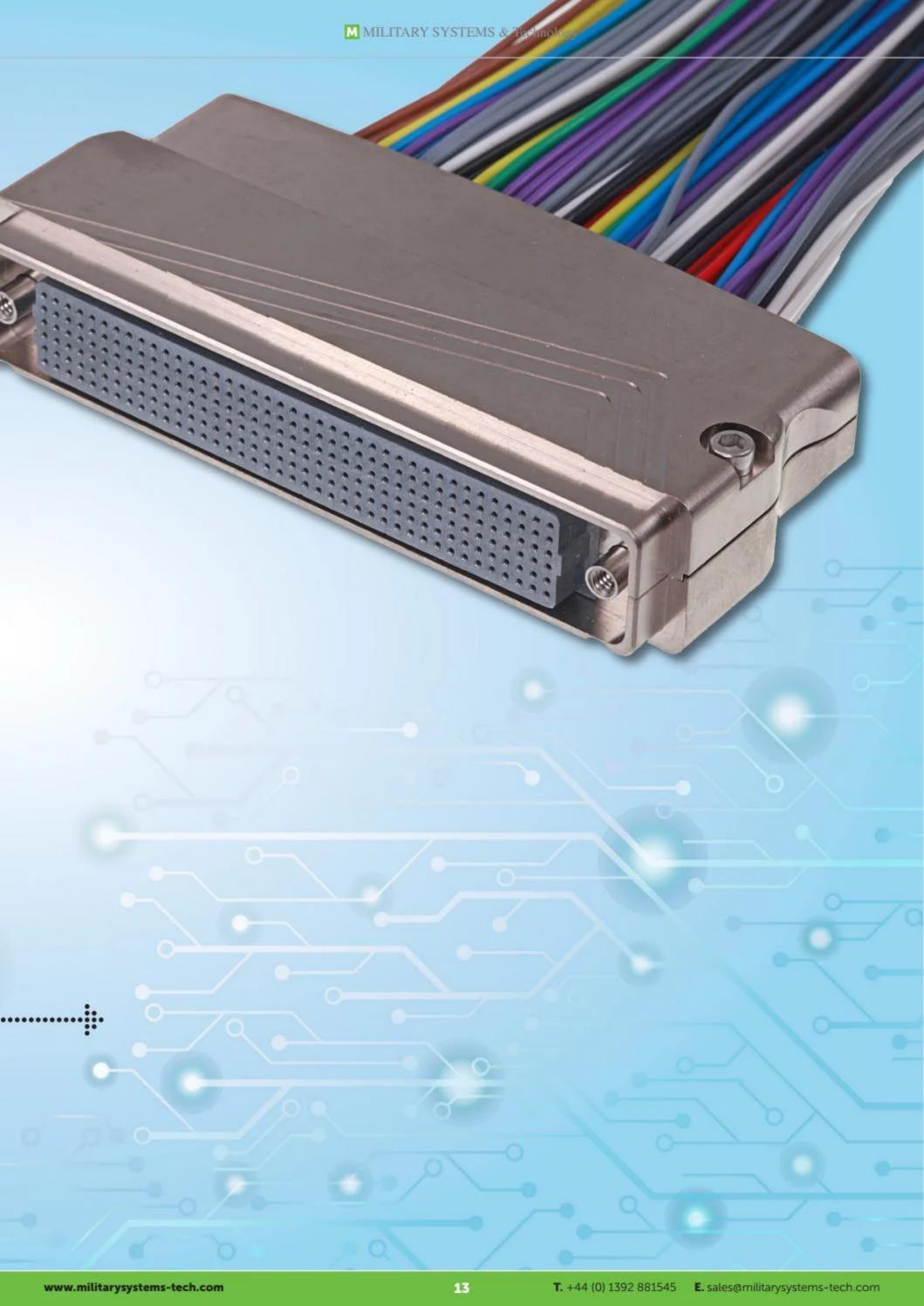
- Matched impedance over the bandwidth of interest
- . Low insertion loss over the bandwidth of interest
- Reliable connectivity to the PCB
- Reliable connectivity to the cable system

In order to ensure that the connector provides low loss and matched impedance to your signal, we need to look at scattering parameters or s-parameters, which specify the nature of linear electrical networks and will identify the bandwidth and the loss of the circuit, providing peek performance potential. S-parameters data are provided by manufacturers as a way of characterizing their connectors and should be the first criteria when considering a high-speed one. Designers should also transform and observe s-parameters in the time domain, as a TDR (Time Domain Reflectometry) plot, and see what the impedance profile looks like internally.

It is important to note too that connectors have a good many "flavors" (termination style, internal signal length, materials, etc.) and the designer needs to understand how the s-parameter files were created.

Here at AirBorn, we provide simulated and measurementcorrelated data for each customer's intended use. This provides customers a more accurate assessment of connector impact to the design and bolsters confidence levels in the simulated data.

Another important criterion in selecting the connector is





PCB termination options. Connectors typically come in several termination styles including, PTH, surface mount, press-fit, and PIH (paste in hole); each having distinct strengths and weaknesses.

Press-fit terminations are rugged and provide maximum retention and connectivity to the circuit board, but also present a tough challenge for high-speed applications. Routing a signal out of a high-density press-fit connector may require a high layer count PCB, presenting the longest path up through the plated holes to get to the connector. This fairly basic system relies on the female side to have a socket and the male to have a spring pin that inserts into the socket. This mating category has two or more points-of-contact and can offer several advantages over the single point-of-contact offered in the edge mount mating system. The multiple contact points in Figure 1 (right) present a lower contact resistance and inductance to the signal. It is also a very reliable and rugged mate that is sure to maintain contact under extreme vibrations. AirBorn uses this pin and socket design in high-reliability, high-speed products for this exact reason.

A surface mount termination is more amenable to high speed design and allows for maximum flexibility when matching impedances at the connector launch point. This method of termination offers the most benefits toward high-frequency design but is not necessarily robust. Surface mount connectors normally require some additional reinforcement to ensure a strong connection to the PCB, such as mounting hardware.

The paste-in-hole (PIH) style of termination is somewhat of a hybrid between the previous two styles. Similar to press-fit, PIH termination has a shorter, non-press-fit pin that is inserted into a plated through-hole footprint and



### www.airborn.com



soldered in place. AirBorn offers these pins as short as 10mils which provide improved high-frequency response as well as a rugged connection to the PCB. Each termination style will have some discontinuity in impedance to the signal as it transitions from the PCB into the connector, all while allowing the designer varying degrees of freedom to deal with this discontinuity and minimize the impact to signal integrity.

Another criteria when selecting a connector for your high-speed design is how it contacts to the mating connector. There are several methods of mating contact, all with their unique set of benefits and limitations to the designer. Each must be judged how they will affect the signal integrity of the overall design. One very popular mating contact is the edge connector. This method relies on the edge of the PCB, or a mechanical component attached to the PCB, to slide into the connector. The connector has spring loaded fingers that will slide along the PCB pad to make electrical contact at a single point. This allows for minimal discontinuity in the signal but it also provides only a single point of contact and may prove to be detrimental for designs exposed to high-vibration

or shock (requiring additional retention methods.

This pin and socket contact can also be physically longer than the edge contact, presenting a larger discontinuity if not designed properly. Therefore it's crucial to study the s-parameters and impedance plots provided by the manufacturer.

At the end of the day, designers need to get a strong, undisturbed signal from point A to B and a proper connector is a critical element along that journey. After all, even if you design in the highest-speed connector, if you experience intermittent opens, what good is the speed? At AirBorn, we work closely with every customer to assess their needs and get them into the correct interconnect solution to ensure that their links work optimally with minimal signal degradation. As a designer, you have a number of connector options from which to choose, so pay close attention to the associative data and choose wisely as the uninterrupted flow of information is critical.



# NEDINSCO DEFENCE INTRODUCTION

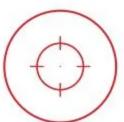
The product range for defence market is ideally suited to land and sea systems. Examples are high-end cameras, direct view solutions, sensor platforms and boresights.

In the defence world Nedinsco is regarded as one of the leaders in the supply of high-quality, state-of-the-art systems.













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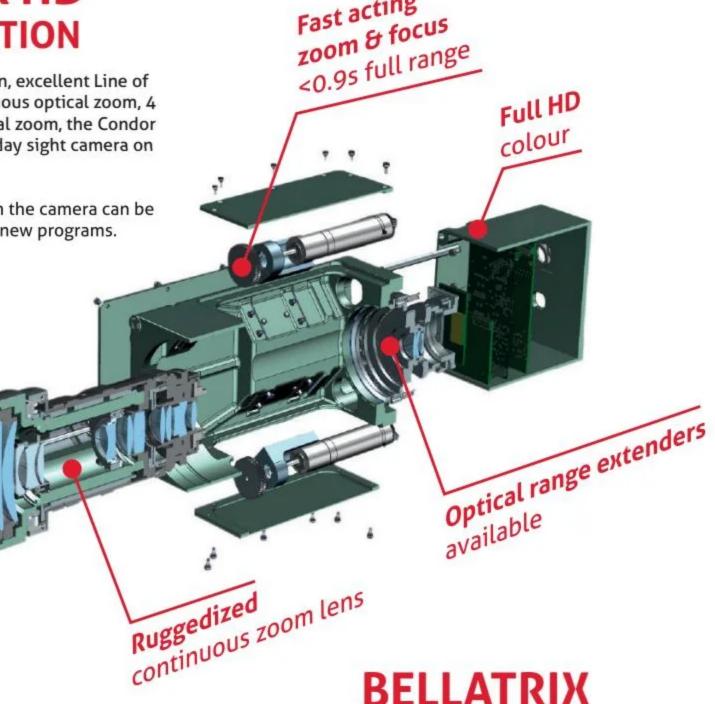




#### **CONDOR HD** INTRODUCTION

With its modular design, excellent Line of Sight, 10 times continuous optical zoom, 4 times continuous digital zoom, the Condor HD is the best full HD day sight camera on today's market.

Due to easy integration the camera can be fitted into, retrofit and new programs.



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- LOS beteween 2 user defined FOV's <1 pixel
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# Driving Forward to Engage, Enable and Excel

**Excelitas Qioptiq is an R&D** powerhouse with hundreds of people around the globe devoted to the design and development of state-of-the-art photonics and processes.

This ensures we are able to meet all our Customers present and future photonic needs. Always with one eye on the future, ready to evaluate and develop new technologies to best meet the requirements of our ultimate customers, the end User, by providing them with mission winning equipment and capability.

Today's advanced defence and aerospace applications demand a partner who can deliver mission-critical performance, reliability and support.



We are that partner, with over 50 years of experience in getting the job done right the first time. We work closely with our customers throughout the product lifecycle, while providing expert technical input at every step along the way. Our expertise in energetic safety systems, electro-optical modules and equipment, high-reliability power systems, sensors, defence lighting, frequency standards, and highenergy switching enables us to meet exacting application needs.

#### **Dismounted Vision Solutions**

We are the world's principal designer and manufacturer of infra-red, image intensified and fused night vision equipment. More than 100,000 individual night sights have been supplied to over 56 different countries for a wide range of defence, police, border security, coastguard, and search and rescue applications. We deliver a range of world leading weapon sights for a wide variety of platforms including individual assault weapons, light support weapons, crew-served weapons, anti-tank / anti-materiel weapons, and specialised sniper applications, using image intensifying, thermal and Fused imaging technology.

#### **Cameras for Ground Based** Surveillance, Vehicle and Naval **Platforms**

We have a proud heritage of designing and manufacturing optical modules for defence and aerospace applications. We strive to create cameras that offer end users the opportunity to select the performance and sensor origin to match their application and its challenges. By being sensor agnostic we are able to address procurement issues that are related to restricted content. Our next generation product family of thermal cameras offer ruggedised, high performing solutions for tough, long range requirements. The portfolio of products includes systems utillising the latest optical and detector technologies in the medium wave infrared



#### **Optronic Defence Modules**

We offer state of the art design and manufacturing to provide precision solutions optimised for low cost, high volume production. We provide a complete in-house capability for the design, simulation, manufacture, test and qualification of advanced optronic modules for Soldier & vehicle systems and equipment, Tactical missiles, Missile warning and targeting, Surveillance systems and Ground Vehicle Systems.

#### **Defence Sensors, Power** & Energetics

From Arming and Fusing, Rocket Motor Ignition and Laser initiated ordnance systems to laser range finding, warning, terminal guidance and command and control modules. We provide the capability that enables critical mission winning systems and equipment.

#### **Avionic Displays**

A respected international reputation for the design and manufacture of optical modules for Head-Up, Head-Level, Head-Down and Helmet-Mounted displays. We have designing been and manufacturing optical modules for Head-Up Displays (HUDs) for more than 30 years, fulfilling over 50% of the world's demand for HUD optical modules.

#### Space Technology

The only provider for OSRs and Coverglass to all the Wests satellites. Coverglass is micro sheet glass processed to be incredibly tough and designed to protect the photovoltaic solar panels from the harsh environment of space. OSRs or Optical Solar Reflectors are small mirrors that assist with the crafts internal thermal management. The space vehicle lighting systems we supply are widely used. Our high Standard) technology was developed specifically for mission critical space applications, providing 20 Years of Continuous, Failure-Free Operations.

#### **STAS - STA Support**

It's not all about supply - support plays a vital part of what we do. Earlier this year UK Minister Harriett Baldwin made the announcement that an £82 million contract had been awarded to Excelitas. The award will see Qioptiq in St Asaph, North Wales provide support for surveillance and targeting equipment to the UK Armed Forces over the next six years. This will ensure vital equipment is available to UK personnel around the globe.

The contract covers equipment used right across the UK Armed Forces delivering capability to all three front line commands. Chief Executive Officer of the MOD's Defence Equipment and Support organisation, Tony Douglas said: "Crucially, the STAS contract, will deliver improved support to Her Majesty's Armed Forces."

As well as supporting equipment, we also look to support our service men and women. Qioptiq is a Gold member of Team Army. Sport is critical to the welfare and morale of our forces, yet taking part in sport is often expensive and in some cases, beyond the means of our personnel. Team Army helps to make sport more accessible by reducing the cost of participation as well as increasing the opportunity for our injured troops to take part in competitive sport. Our association with Team Army gives us the opportunity to support such events as Army golf, Sailing, skiing etc as well as other activities such as the Ice Maiden expedition.

#### www.qioptiq.com

**Exhibiting at** 

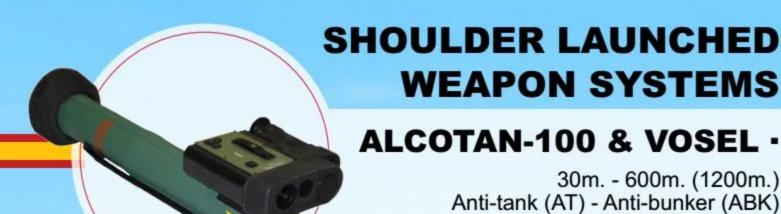
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HALL 5A - JH741



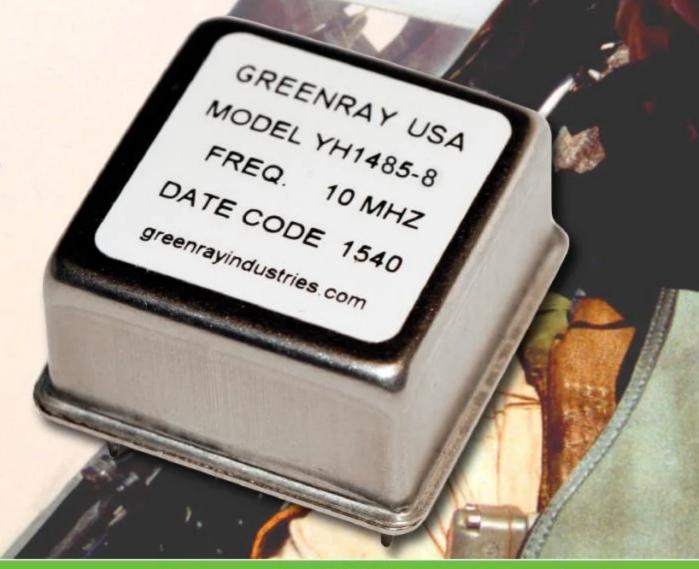
# Greenray Condustries, Inc.

Leading U.S. manufacturer of precision quartz crystal oscillators.

## Greenray's YH1485 OCXO

Greenray's YH1485 OCXO is designed for use as a reference for radar, instrumentation, and military applications that require very low phase noise in order to optimize system sensitivity.

Available from 10 to 100MHz with sinewave output, and best stability of ±0.05ppm, the YH1485 delivers phase noise performance below -175dBc/Hz and excellent short and long term stability. Optional reduced acceleration sensitivity – down to 3×10-10/g in the worst axis – is also available to satisfy high shock or vibration environments and improve performance.

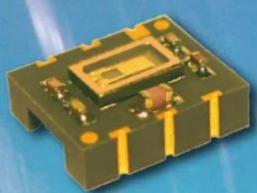


# Greenray's high performance T1241 TCXO

The T1241 TCXO features very low g-sensitivity, down to  $7 \times 10-11/g$ , and is available from 50 to 100 MHz with CMOS output.

Featuring a ruggedized, go-anywhere package and low current draw, the T1241 TCXO is ideal for demanding mobile applications including airborne and instrumentation. Typical phase noise is - 155dBc/Hz @ 10kHz. Contact the factory for full performance and specification data.





#### **Greenray's T1307**

The T1307, available from 10 to 50MHz, features an industry-standard 9 x 7mm SMT package, temperature stability of 1ppm over -40 +85°C, and CMOS or Clipped Sinewave output. Operating voltage is from 2.7 to 5.0VDC with a minimum current draw of 6mA. performance under vibration (<7 x 10-11/g) and much better phase noise performance (e.g., 30-40dB) under shock and vibration than typical TCXOs. This technology also enables Greenray to provide smaller packaging and cost benefits.

The combination of performance parameters and package footprint make the T1307 Series an ideal choice for mobile, airborne and similar environments in both commercial and military markets where reliable, precision performance under high shock/vibration conditions is required. Information regarding the T1307 Series TCXO and all Greenray products is available online at -

www.greenrayindustries.com



GREENRAY



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## Military GPS/GNSS navigation

Homeland security, defence in general, it starts with awareness. Being aware of where you are, knowing with threats are surrounding you, and knowing when, when and how threats will effect you and the people that to on your protection.

#### Situational awareness.

In building up your situational awareness, the key factory your location. Intel about enemy activity is useless with knowing where you are. Without reliable information your own position, it isimpossible to know in which of you should defend yourself, and it is impossible to defend yourself and it is impossible to defend yourself.

The same applies for any Head Quarters or Mobile C Unit; a field report is of no value without reliable info about your own position.

Not any military or semi-military platform should rely techniques for a mission critical system like GPS.

The GPS system does not only provide navigation da also provides other (ships') electronic systems like the (W-)AIS, INS, IFF Transponder, radios and so on, with i.e. position, timing and synchronization signals.

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on civil

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hat still

- Product family range to cover any platform
- GPS/GNSS/eLoran
- Small MIL GPS with integrated INS for special forces
- Designed and built in accordance with Military standards
- Tailored, platform specific interfaces
   (navigation, timing, synchronisation and specials)
- GNSS data distribution systems
- Long time maintenance support, avoiding obsolesence with FFF replacements if needed

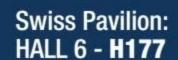
Winner of the 2017 Dutch Defense Innovation games

gen The Netherlands

/dec.com









## SOLIFOS FIBER OPTIC SYSTEMS







its very low weight. With the same size reel you are using with your standard tactical fiber cables, you can deploy double the distance as of today using the BRUfield cable. Furthermore soldiers would not suffer under the heavy weight since the BRUfield cable is approx. half the weight of standard tactical cables. Finally the BRUfield cable meets exceptional specifications, which out-performs standard dielectric cable types.

BRUmil: Designed for use in demanding field scenarios, the extremely thin BRUmil cable contains up to 8 fibers in an armored, stainless steel tube and an abrasion-protected polyamide jacket. This small cable is highly resistant to crushing, has a high tensile performance, and is fully protected against damage from rodents. The narrow cable design enables as much as double the amount of cable to be rolled onto a reel as is possible with standard designs.

BRUpowermil is a hybrid cable design combining the mechanical advantages of BRUmil cables with a pair of coaxial conductors and 4 data transfer fibers for simultaneous transmission of data and power under harsh environmental conditions. Like the BRUmil, it has high compressive and tensile strength, and a fully rodent-proof coating.

BRUtough: Adapted for military applications, BRUtough tight-buffered cables feature a non-metallic design with a polyurethane jacket for optimum flexibility. This robust cable design is well suited to rapid and frequent deployment in tactical operations.

#### Fiber Optic Cable Assemblies

Supporting their range of military cables, SOLIFOS AG also offer military connectors, reels for up to 10 km of BRUfield or BRUmil cables and backpacks for rapid deployment in challenging military scenarios.

Backpack reels, hand-operated reels and vehicle-mounted reels are available with capacities between one hundred and ten thousand meters. These allow cables to be deployed quickly and efficiently in military installations of all scales. The ergonomically designed backpack reel enables easy deployment of short to medium cable lengths up to thousand meters by just two soldiers.

SOLIFOS AG assembles any military connectors with integrated lenses or butt-joint connectors. The connectors are fully consistent with the company's cable designs, and include specialist hybrid connectors for use with BRUpowermil cables.

#### Military Cable Deployment Aids

SOLIFOS AG offer a versatile selection of cable deployment aids to ensure correct deployment and installation. These include cable shoes and hooks for anchoring cables to buildings, trees and other surfaces together with telescopic poles for guiding and anchoring cables over obstacles, as well as floor ducts for protection of cables at ground level.



#### SOLIFOS AG Communication Systems

International forces, organizations and peace missions require rugged, mobile communications equipment. Supporting their range of cables and cable accessories, SOLIFOS AG offer customized communication systems to integrate the hardened network into COTS infrastructure. The company is particularly experienced in the provision of fiber optic cables linking interoperable communications systems.

SOLIFOS AG offer a diverse range of rugged communications systems adapted for various climates and requirements. SOLIFOS AG interoperable communications equipment is designed for speedy deployment and trouble-free operation.

This is achieved through modular arrangements of electrical systems built into rugged shipping containers. A typical communications set-up includes a robust power supply module, an air conditioning unit to protect against overheating of the equipment, and a choice of customized data modules for storage, processing and surge-protected data transmission.

#### Lightning / Surge Protection

SOLIFOS AG provide full lightning and surge protection for all power supplies and Ethernet connections. Masts and cables are exposed to lightning strikes. Together, these systems safeguard both communications equipment and personnel against the dangers of lightning strikes.

#### Remote Power Supplies

SOLIFOS AG' hybrid BRUpowermil cables and connectors combine integrated power lines and fiber optic cables, allowing simultaneous transmission of data and electricity. This represents a huge advantage when linking to remote communications systems over long distance.

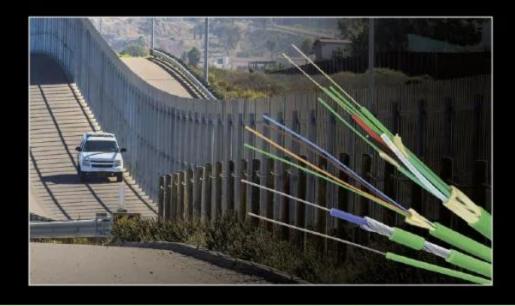
## Tactical Communications Training and Maintenance

Rapidly deployed communications equipment must be correctly installed and maintained to ensure effective and reliable operation. SOLIFOS AG provide specialist tactical infrastructure training courses covering the installation, maintenance and repair of their cables and equipment. This training also helps to extend the lifespan of the hardware, reducing expenditures over the life of the equipment.

#### Military Cable Test and Repair Kits

SOLIFOS AG supply a choice of cable test and repair kits for tactical cables and assemblies. These include the BRUMIL 810 Tactical Cable Measuring Case for testing tactical fiber optic cable networks, the BRUMIL 880 Tactical Cable Repair Case for repairing cables in the workshop (with an optional extension kit for repairing BRUpowermil hybrid cables) and the BRUMIL 860 Emergency Field Repair Kit for rapid repairs during operations.

Solifos AG offers special solutions for distributed acoustic sensing cable for third party intrusion (TPI) detection and border control. Our booth at the Eurosatory 2018 will be in the Swiss Pavilion: Hall 6, H 177.



29



# The UK's premier manufacturer of metal & cable detectors for military and law enforcement operations.



Our products are in-service with police forces, security services, NGOs, NATO and other military forces world-wide.

We supply a range of products for use in Counter IED, EOD, Search and Demining operations.

- COMMAND WIRE DETECTORS
- METAL DETECTORS
- CIED EQUIPMENT
- DEMINING EQUIPMENT
- CIED TRAINING

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- Website Design
- Print Management
- Magazines & Contract Publishing
- Exhibition & Large Format

www.defence-design.co.uk

# Operational Accuracy

Effective combat marksmanship results from combining the best equipment and proper training. Having operational accuracy and confidence with the weapon and optics package prior to every deployment is essential.

The Pyser Optics SAC (small arms collimator) is easily deployed prior to any operation, in the armoury and at the range to quickly check weapon accuracy and zero without the need for any live firing.

The collimator saves a significant amount of cost, time and ammunition for initial weapon setup and marksmanship training. It also helps identify problematic weapons and optics, and any specific training needs to improve marksmanship.

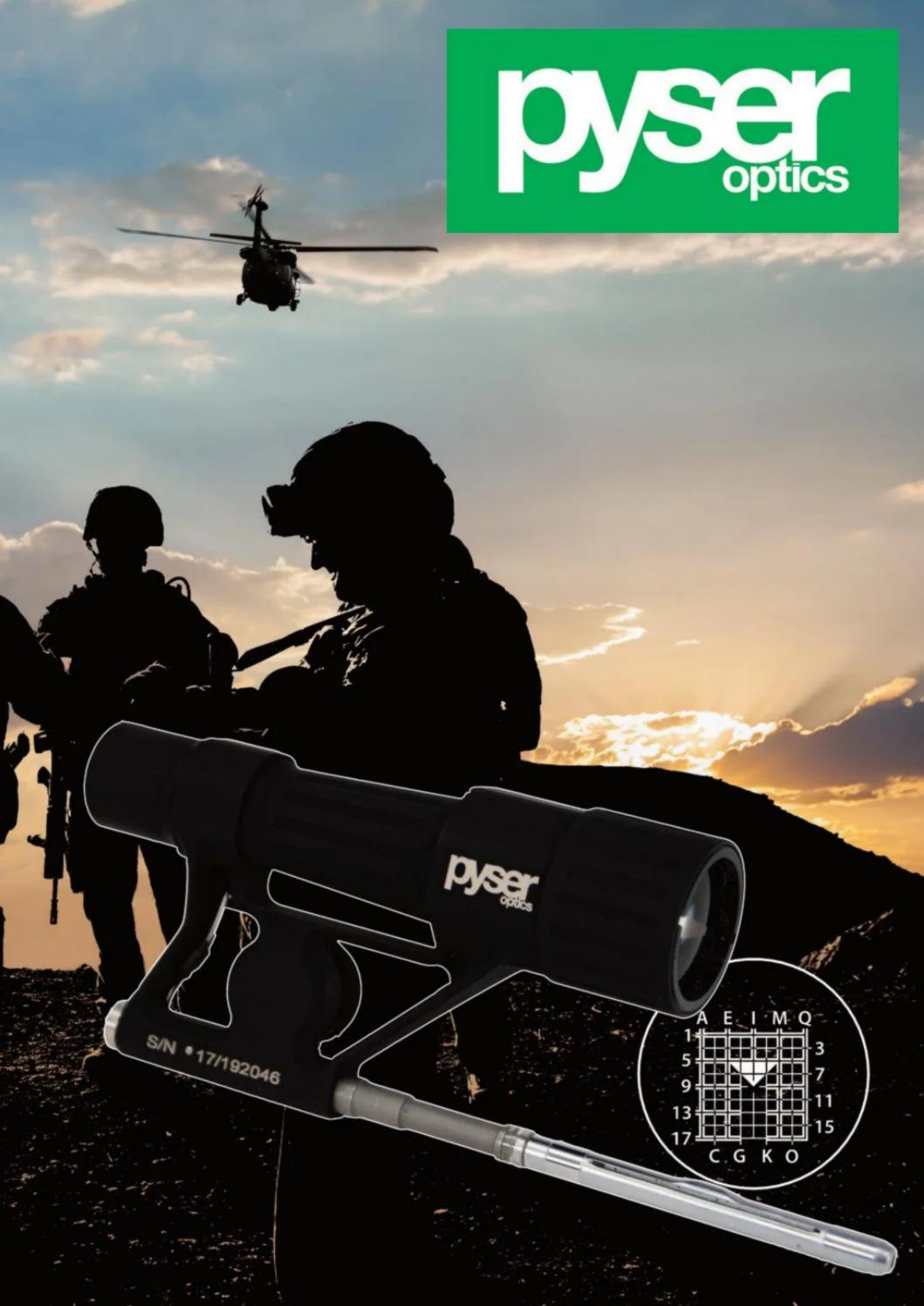
This is why the Pyser Optics SAC has long been a standard issue product for the British Army, UK Special Forces, US Marine Corp and other international NATO and non-NATO armed forces, and Homeland Security, UK Police firearms and other specialist counter terror units.

The SAC is designed and manufactured to suit any weapon platform and calibre, plus a comprehensive range of optical sights including holographic, image intensified night vision, thermal imaging sights and red dot or laser sights. The robust and rugged design provides years of trouble free and reliable service, requiring no maintenance.

We would welcome the opportunity to perform a collimator demonstration and training session to help improve your operational accuracy plus showcase our comprehensive range of high accuracy night vision and thermal weapon sights.

Contact our Defence sales team on: +44 (0) 1732 864111 or email: sales@pyseroptics.com







# Engineering Integrity 1



## Horstman

With a time tested pedigree in design, development, project management and high quality manufacture, Horstman is the pre-eminent mobility solution provider in the global heavy armoured and tracked vehicle suspension market.









#### Horstman design, develop, deliver and support highperformance military vehicle suspension systems worldwide for the life of the vehicle.

Horstman is a British company with a global focus specializing in design and manufacturing with an unrivalled domain experience in heavy armoured vehicle suspension. Boasting a time-tested pedigree in innovation, product development and defence management, Horstman are world leaders in the heavy armoured and tracked independent vehicle suspension systems.

With 140 employees in the UK, US and Canada, we are a high value added, innovative engineering business with a global footprint in both customer base and supply chain that provides a quality, technically excellent offering to solve customers' problems, throughout the product lifecycle.

The defence heavy armour business has arduous development and testing cycles to ensure that the serving soldier has the best combination of armour, firepower and mobility that they deserve; Horstman provides this balance to our customers - having built our talent base over decades from a combination of industry experts, service veterans and continuous investment in apprenticeships, graduates and training.

Recognised by armoured vehicle designers worldwide as the benchmark for excellence in the field, Horstman works with more than 18 blue chip prime contractors and government R&D centres alike and our systems are in service in more than 28 countries worldwide. Horstman provides a strong systems engineering and design capability in hydropneumatic suspension, electronic and electro-hydraulic active vehicle ride management systems and has a strong supporting capability in safety critical high integrity manufacture (military thermal management, aerospace, and titanium components for sub-sea systems).



## Horstman

UK: Bath, England

US: Sterling Heights, Michigan

Canada: Toronto, Ontario

T: +44 1225 423111

E: esales@horstman.co.uk

www.horstman.co.uk

Horstman business strength lies in its foundation, its capabilities and the synergy of the multiple sectors and countries that our products are active in. Some of our products and capabilities include:

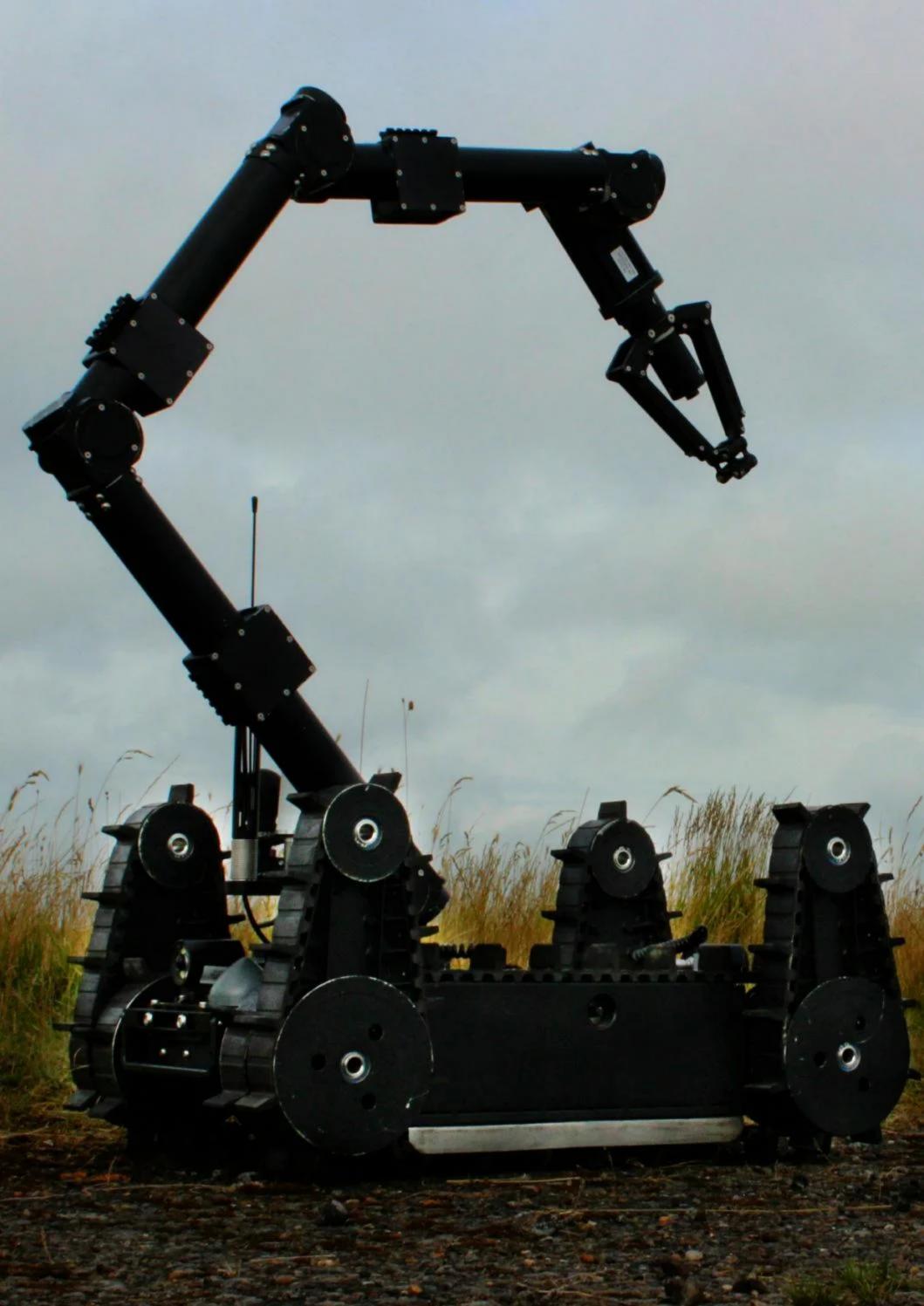
- Hydropneumatic systems
- Hydraulic rotary dampers
- Conventional spring/damper systems
- Vibration isolation (seating, equipment)
- Gearbox and ancilliaries
- Military Grade Air Conditioning Units
- Auxiliary Power Units (APU's)
- Air-hydraulic pumps
- Gas charging booster systems
- RPV landing gear
- Support equipment such as test rigs and associated equipment; track tensioners and hydraulic rams
- Torpedo hull & structures
- Non-magnetic actuators
- Instrumentation
- Commercial security and mining vehicles
- Globally deployed

## Horstman Suspension Evolution



Horstman proudly boasts the world's widest range of Hydrostruts® with retraction, lockout, ride height and semi/active systems







Introducing...

## ZEUS

The Ultimate Modular Unmanned Ground Vehicle

EOD, C-IED & CBRNe



**CONFIGURE TO MISSION** 



REPAIR IN FIELD



**EASE OF TRANSPORTATION** 

"eod solutions for life...

# EUROSATORY 11 - 15 JUNE 2018 / PARIS

Hall 5A Stand J771

INSTRUMENTS L I M I T E D www.nicltd.co.uk

To find out more.....

sales@nicltd.co.uk

Brochure:



Webpage:



Video:



Social:











INNOVATIVE TECHNICAL SOLUTIONS BV

HALL 5B - Booth A80





INNOVATIVE TECHNICAL
SOLUTIONS BV was founded in 2012
and is specialized in extraordinary
camera systems. Based on a long
experience in image intensified
camera technologies, they have
grown their technology database
with a product portfolio ranging
from night vision systems, thermal
and fusion systems to laser range
gated cameras. The highly
experienced team of Hardware,



software, mechanical- and electronic engineers develop and manufacture customer specific camera systems and the company also has an impressive product portfolio with their own products.

At Eurosatory 2018, the company is proudly releasing their latest product called Cherub. Cherub is a very compact, extreme low latency, versatile fusion core. Due to the modular design, this core can be integrated in a wide variety of systems. Handheld, wearables, target acquisition, driver- and local situational awareness systems to name a view. The core is designed around ITS' proprietary fusion engine which allows for extreme low latency. A Full HD colour or monochrome CMOS sensor and QVGA or VGA micro bolometer are the available



**Pulsatrix** 

independently operated or the operator can utilize the smart fusion. When smart fusion is selected, the ITS algorithms quickly analyse detail and contrast in each frame to determine where and how to fuse and to what degree. A wide variety of video processing options are also available for the operator and the system allows for overlays etc. The optional SDK allows OEM's to

create their own user space and user interfaces. Embedded Linux allows for full camera control. Another unique item is the "Shutterless NUC" that is used by the thermal camera inside the core. Again smart algorithms analyse the thermal image and take care of the NUC so a mechanical shutter is not needed anymore.

The unit is either available in a compact housing and can be integrated directly or as a modular board camera core where everything can be tethered to fit in an even wider variety of end user systems. It's available in two types, with an OLED display and input control buttons or HDMI output with RS232 interface for control.

Cherub will be a "game-changer" with regards to sensor fusion. Because of the compact and modular design, this core is suitable for integration in a wide line of products. Present vehicle programs all over the world could benefit from this development as thermal and low light fusion are now available in one core for a very favourable price. The core is also very easy to integrate since all the provisions for integration are available. OEM manufacturers could simply upgrade their existing cameras with this new core or quickly develop new cameras.

Since 2016, ITS BV is part of the **Formatec** holding and therefore part of an innovative group of companies with a solid structure. This allows for the future growth plans of ITS and the transformation from a consultancy based, project company to a production company with integrated R&D capacity, specialized in high end camera systems. ITS is primarily focussed on the Defence and Security market but serves the Industrial market as well.

On their booth ITS is demonstrating some of their presently successful products. **Sequoyah** is their low light level camera developed around the SONY Pregius IMX252 sensor. The camera is available for end users as

well as a board camera for OEMS. ITS BV provides a complimentary SDK which allows the OEM or end user to generate a completely tailored back end. For end users that just want a simple Low Light Level camera for covert surveillance, there is an embedded webserver running in the camera. Through this server, the user can control all of the camera settings. Sequoyah is available in both colour and monochrome with impressive sensitivity. The colour sensor has a detection limit of 3-5mlux scene illumination where the limit for the monochrome version is even below 1mlux. This make the camera extremely attractive for OEM manufacturers with the possibility to embed it into a variety of systems.

For OEMS that want deeper night vision, down to night level 5 and into the ulux domain, ITS BV has the Pulstarix camera/core family. This camera has an integrated intensified CMOS sensor with either PAL resolution and output or a 1280x1024 resolution in HD-SDI or any other output, required by the customer. For wearable and handheld systems, as well as weapon sights the camera core is perfectly fit to digitize existing systems or develop new digital night vision systems. Pulsatrix core has the ideal SWaP for man portable night vision systems, while also being ideally fit for integration into larger platforms. When

manufacturers are looking for a more sophisticated digital night vision camera, they can also consider the **Pulstrix camera**. This is the core's larger brother and has additional processing capability as well as DC-IRIS and Pelco D control options. The camera can also be ruggedized to fit into vehicle retrofit programs, ugrades and new developments as **driver night vision** camera.

Also on display at their booth during Eurosatory is the innovative Alligator night vision camera. This camera has a unique SWaP design for rapid deployment. The camera can be used in surveillance operations, battle damage assessment but also for close perimeter protection for units in a Remain Overnight location. PAL or HD-SDI output is easily connectable to any transmitting device used by modern day forces speeding up the decision chain with usable night vision surveillance with the quality of goggles.



T +31(0)512 - 212410 E info@its-hightech.nl www.its-hightech.nl







## Night Vision, Electro Optical & Thermal Camera Development and Production



## Don't miss...

PPM Systems at the Three Counties

Defence and Security Expo

PPM Systems will be exhibiting highly advanced military- grade products, such as the Rodent 4 remote antenna platform, at the Three Counties Defence & Security Expo (3CDSE) this May.

The Rodent 4 represents cuttingedge technology that provides a convenient way to deploy Signals Intelligence (SIGINT) antennas over hundreds of metres, allowing military personnel to remain at a safe distance from the targeted zone.

Further PPM Systems products being showcased include:

- Antennas for electronic warfare, jamming and surveillance, military comms, military satcom and more
- Software defined radio scanning and decoding systems
- ViaLite RF over fibre systems for the military
- · RF filters.

3CDSE is held at the Three Counties Showground in Malvern and is the region's leading expo for defence and security. The event's core premise is to provide a platform for military, suppliers and security agencies to identify common interests, solutions and opportunities. If your business relates to any of these categories, 3CDSE is an event not to be missed. The PPM Systems team will be there (stands 101 and 102) to build mutually-beneficial business relationships in an enthusiastic environment, with PPM Systems products on display to bring ideas to life.

To arrange a meeting at the show, please email sales@ppmsystems.com

or call the team on **01793 784389**.

Websites: www.ppmsystems.com

and www.3cdse.com.

PPM Systems is a divison of Pulse Power and Measurement Ltd.





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## Eurosatory LAB

The COGES, in partnership with Starburst Accelerator, presents for the first time at the largest land and airland Defence & Security international exhibition: the Eurosatory LAB.

Throughout the duration of the exhibit, this unprecedented space will showcase up to 70 start-ups building the defence and security of tomorrow.



From June 11th to June 15th, 2018, Eurosatory LAB will open its doors: a new space dedicated to emerging and innovative companies with applications in land and airland defence and security. Up to 70 French and foreign start-ups will present, for the duration of the event, their innovations and technologies to official delegations and industry professionals of these sectors.

## The space will consist of three main areas:

 An exhibition space gathering start-ups from 13 countries: Belgium, Czech Republic, France, Germany, Ireland, Israel, Netherlands, Poland, Portugal, Singapore, Spain, United Kingdom, United States.

- An Agora hosting daily conferences around major issues of innovation: counter-terrorism, startup funding in the Defence, GAFA ...
- Twice a day, emblematic industry leaders will open the "pitch" sessions where each start-up will have the opportunity to present its projects and technologies.

## **Eurosatory LAB:**

The Defence and Security start-up area Within a vast 900 m2 space located in the Hall 5A, startups will be organised around the following key themes:

- Surveillance & Intelligence
- Cybersecurity & IT
- Man Support
- Intervention & Force engagement
- Communications
- Production, Equipment, Maintenance & Logistics
- Enabling Technologies

For more information on the event visit www.eurosatory.com.

In parallel to the Eurosatory LAB, the GICAT will host 12 companies of the Generate innovation label on its own stand.

## **About COGES and Eurosatory**

The COGES (Commissariat Général des Expositions et Salons du GICAT) is a company wholly owned subsidiary of the GICAT (Group of industries of land and airland defence and security sector). It is dedicated to the international promotion of the French land and airland defence and security industry and its sectors. In this context, COGES creates targeted events, both in France and abroad.

In addition to Eurosatory, it organises SHIELDAFRICA and EXPODEFENSA. Shieldafrica, the leading exhibition on the

African continent, meets Security & Defence needs for a safer Africa. Its next edition will take place in Abidjan, Cote d'Ivoire from January 21st, 2019 to January 24th, 2019. Expodefensa, the reference exhibition in Latin America for Defence and Security (in Air, Land and Naval domains) will be held from December 2nd, 2019 to December 4th, 2019 in Bogota, Colombia.

## **About Starburst**

Starburst is the first global start-up accelerator specialising in aeronautics, space, and defense. Starburst is opening up major players in the sector to a new source of innovation and development of advanced technologies. The accelerator is empowering a global ecosystem of strong start-ups that have developed innovative technology to land their first major aerospace contracts and Series A financing. Starburst has 6 international offices: Paris, Los Angeles, Munich, Singapore, Montréal and San Francisco. The Starburst ecosystem connects start-ups with a network of industrial partners in the sector (Thales, Safran, Boeing, Raytheon, Northrop Grumman, BAE Systems, IAI, CNES and many others) as well as airlines (Lufthansa, United) and investment funds.

## **Press Contacts**

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sandra@starburst.aero
+33 (0)9 84 47 53 44

Official Press Agency covering the Eurosatory tradeshow Bertrand Paul | eurosatory@grayling.com +33 (0)1 55 30 70 75





## Cobham: Land and Air Capabilities Demonstrated at Eurosatory 2018

Cobham has recently developed a number of new product lines including antennas for countering the unlawful use of drones; wideband omni antennas for Electronic Warfare applications; Anti-Jam GPS systems and combined mast and antenna kits that for rapidly deployable communications.

Staff will be available on the Cobham stand (Hall 5A, stand no#C750) to discuss any of the above requirements or for further antennas or communication systems.



Custom Antenna and Mast Kits
Kits available for multiple frequencies and applications

## **Cobham at Eurosatory**

Attending Eurosatory enables us to, cost-effectively, meet all levels of the customer community: in-country partners; end-users; platform OEMs; government/military agencies.

From the conference we are able to progress existing (known) opportunities at all levels of the customer community whilst allowing access to new opportunities. At the same time gathering more visibility of the customer's landscape and identify opportunities for partnering.

## Solutions from Cobham

Cobham is a leading global technology and services innovator, respected for providing solutions to the most challenging problems, from deep space to the depths of the ocean.

Multiple divisions of Cobham will be exhibiting at Eurosatory. For an overview of the products that will be on display please refer to the previous page.

If you would like more information on any of these products please visit us at Eurosatory or contact us via the details below.



Cobham E: info@cobham.com W: www.cobham.com





## Introducing the new Trilobyte

Our newest line of helmet lights, in four generations of increasingly advanced technology.

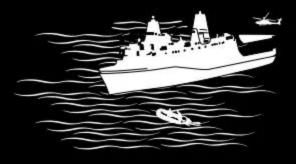


## Tactical Flashlights

Waterproof and impact-resistant illumination devices. Offered in a range of intensities, weights, and secondary features.



All come with included rechargeable batteries.



## Waterborne Operations

Pull-pin and water activated life jacket and emergency raft lights

Overt and Covert options available





## Portable Landing Zone Kits

Powerful, remote operated landing zone systems that can be set up in any terrain and adjusted to required level of visibility. Available for large aircraft, helicopters, beach head marking and more



## Vehicle Illumination & Identification

Enhanced driver night vision and unique identifier signals for humvees, ATVs, and watercraft



nnovation that works! Adventure Tactical will bring to Eurosatory its latest Canadian made technologies.

Adventure Tactical Inc. provides quality products that are versatile, unique and can be relied upon to deliver outstanding performance.

A trusted international supplier to the defense forces of over 25 countries, Adventure Tactical products are truly the finest in their class.

Being a modularity-focused designer and manufacturer of our own products has led us to specialize in working directly with our clients, enabling us to offer custom solutions for their specific needs. We're proud enough to call this our Merlin Services™.

Do not he sitate to contact us with custom requests!



Left: VIPIR™ SWIR Helmet light shown mounted on the back of a soldier helmet.

Trilobyte™ Combining the advanced technology found in our VIPIR™ series together with the robust design and user-friendly operation that we are known for; the Trilobyte™ sets the new standard in lights for HALO, HAHO and other airborne applications, while still maintaining its versatility for land and waterborne applications.



HLZ/DZ Expeditionary drop/Landing Zones: HLZ/DZ provides helicopter and airplane pilots with an Infrared or visual runway or landing pad. The system is remotely controlled to up to 1800 meters, and due to our unique ADHOC mesh network, configurable for any runway length or shape. The HLZ/DZ is well suited for temporary and covert landing stations, parachute jumps, Medical Evacuation, Search and Rescue missions, as well as various Special Forces combat requirements. The HLZ/DZ comes in a compact yet rugged combat case that makes them the most compact and most effective in their class.



## <u>Dual Button Polarity Program Switching®</u>

Separates groups of functions that can be switched between by holding down two side buttons for specified periods of time.



## About Adventure Tactical:

Proudly Canadian, Adventure Tactical, a division of Adventure Lights Inc., has been providing quality products that have proven their value and durability in-field for over 20 years.

A leader in Identification of Friend and Foe (I.F.F.) technology, Adventure Tactical also offers a wide range of solutions to help protect those who protect us!

- Personnel Recovery and Identification Systems
- Vehicle Identification & Safety Systems
- Expeditionary Landing & Drop Zones
- Renewable Energy Man Portable Power Systems

Visit www.adventuretactical.com for more information

VIPIR™ Visual/Infrared marker, beacon, and strobe: different VIPIR configurations enable the user to toggle between up to 14 different functions including features like Auto-Synchronization, Signal Recording and Playback, and more. An Iconic product to many Special Forces Teams, it is well suited for Personnel Recovery and Identification, situational alertness, command and control, [CSAR], vehicle driving, and parachute jumps, among others.



Left: Trilobyte™ Helmet light; leftside controls shown.

Left and rightside controls combine to provide a vast collection of controls, settings and functions organized in an easy to navigate system

## Stealth Illuminator™ Vehicle illumination system:

STEALTH ILLUMINATOR is a compact Infrared vehicle headlight that requires minimum vehicle architecture dependency, delivering driver assisted vision and allowing the driver to operate the vehicle in complete darkness! It is well suited for vehicle driving, Beach Landings and Amphibious Assaults, Night time marine operations, and watch towers. The Stealth illuminator projects and infrared beam to present soldiers with a bright vision at distances beyond 1000 meters!

Right: 6 Light Expeditionary Landing Zone System





## NtoSync MutoSync™ Synchronized Flashing Patterns

Any beacon of the same model will flash in unison when set to specific synchronized flashing echnolos functions. Advanced versions in some models incorporate this with Mockingbird® Programmable Flashing Signatures for in debth C Applications.



## Diligence over Expedience

The company was formed in 2002 and is owned and managed by former military Bomb Disposal **Operators with extensive** experience gained on a myriad of operations worldwide, both whilst serving and in the commercial & humanitarian sectors.

We specialise in Explosive Ordnance Disposal, Counter Terrorist Search, Counter Improvised Explosive Device, Maritime, Aviation and Venue security.

EOD UK offers a range of its own products and can supply bespoke equipment packages and training services.

Our client base includes Non-Government Organisations, military, media, manufacturing companies, commercial EOD companies, security companies, the financial sector and facilities management companies.

## **EOD UK TRAINING**

EOD UK provides comprehensive training packages to suit our clients' needs. EOD UK will design and deliver bespoke training courses at the clients' location or EOD UK can utilise modern training facilities in the UK.

All of our instructors are retired military/police officers who have a wealth of operational experience. EOD UK only employs instructors with qualifications from renowned centres of excellence such as the UK Defence Explosives, Munitions and Search School or the US Naval School, Explosive Ordnance Disposal. Through our partner companies EOD UK can offer recognised qualifications such as NVQs.

Whether the need is for a single day of threat awareness training or a 12 week EOD operator course EOD UK has the experience and expertise to meet your particular requirements.

Course design is based on the proven Systems Approach to Training utilizing a design map that encompasses all aspects of training design, including the development of the project plan, conducting a needs analysis, determining the course objectives and module outlines; development of the instructional strategy, validation and evaluation.

## **CASE STUDY - MINE RISK EDUCATION (MRE)**

EOD UK Ltd were contacted by a training provider to review their training materials and lecture content used in the delivery of a Mine Risk Education (MRE) module which formed part of the company's Hazardous Environment Training (HET) courses delivered to NGO's and UK government agencies.

EOD UK Ltd visited the company's training venue in south east England to gather information and access how MRE was being delivered and how it could be improved. EOD UK then worked with the client and using the Systems Approach to Training re-wrote the training material, designed and installed a realistic training lane for MRW. An EOD UK trainer then delivered the new training module to the next HET course shadowed by instructors from the client company so they could competently deliver the ERW training module for future courses.

EOD UK is retained by the company to periodically review course content to ensure it is kept relevant and up to date.

## EOD TRAINING COURSE / CIED DETECTOR TRAINING IN NORTHERN IRAQ

EOD UK Ltd was contracted by a leading supplier to the United Nations to design and deliver a training course on a CIED detector. The course was conducted at a UN location in Erbil, Norther Iraq.

EOD UK Ltd liaised with the equipment manufacturer, supplier and the UN to conduct a Training Needs Analysis, write a course programme and produce student notes. EOD UK then deployed a Subject Matter Expert to deliver the course in Erbil.

## **EQUIPMENT SUPPLY**

EOD UK Ltd supplies bespoke equipment packages and also our own range of products called the Evolution Series, these products have been designed by the user for the user.

We have unrivalled expertise in this field and have supplied packages to users all over the world across a range agencies involved in the whole spectrum of EOD related operations.

## CASE STUDY - VENUE SECURITY ASSESSMENT

EOD UK was contracted by a UK government department to review and assess security aspects for a freight distribution hub at a high security site in central England.

EOD UK provided a security cleared SME who conducted a Needs Analysis Visit to the site and met with staff at the centre and walked through all procedures for screening goods in to the site and evaluated Standard Operating Procedures (SOP).

EOD UK then produced a Needs Analysis Report with which to assist the management at the site to assess what screening methods, equipment and staff training was required to ensure security at facility.

EOD UK was then asked to assist with staff training development, selection of updated screening equipment and deliver a general training day for staff from various sites on explosive hazards.

## **RUSLYN REELS**

## **Packreel and Cordwheel**

EOD UK is the official UK distributor for the Ruslyn Cordwheel and Packreel. The Cordwheel and Packreel are lightweight and stackable. The reels can be utilised for a variety of uses such as hook and line, firing cables, communications cable and many others. EOD UK holds a limited stock of black and green reels' other colours are available but have minimum order quantities. Please contact us for a quote.

5 Lawrence Street | Gillingham | Kent | ME7 5TY | UK Tel: +44(0)1634 581525 | info@eoduk.com

## CONSULTANCY

EOD UK offers a range of consultancy services, these include:

- Equipment Evaluations
- Equipment selection advice
- Needs Analysis Reports
- Advice on setting up and developing EOD organisations
- Threat Assessments
- Development of Standard Operating Procedures (SOP)

EOD UK ensures that we assign a subject matter expert to each of our consultancy tasks; our service supplies the client with information that is concise, relevant and to the point.

## www.eoduk.co.uk







Modern data intensive communications require solutions which can support extended transmitter operations in demanding conditions. At DSEi Barrett Communications (Stand N7-160) will launch its new, liquid-cooled 4075 high power software-defined radio (SDR) HF transmitter which comprehensively meets this need.

The 4075 couples 500W and 1kW linear amplifiers with Barrett's 4050 SDR HF transceiver in a package that offers continuous coverage from 1.6-30MHz and a range of communication modes.

The 4075 amplifier has a unique, advanced liquid cooled solid state design which reduces the requirement for forced air cooling, resulting in less power consumption and a better working environment. This innovative cooling system allows the transmitter to run continuously at optimum temperatures, resulting in greater reliability and extended service life.

The 4075 transmitter has a 2G and 3G Automatic Link Establishment (ALE) options and can be controlled remotely via IP or WiFi. It is field re-programmable via USB and Ethernet allowing the end user to update system software, and a micro SD card is also available which provides enhanced flexibility for system updates, language, and display customising.

The Barrett 4075 HF transmitter provides the right solution for those who operate in austere conditions. Peacekeepers, military forces, security organisations and non-government organisations all require easy to use, robust and reliable long-range data communications equipment with reduced logistic demands. The Barrett 4075 HF Transmitter is the answer to this requirement.

www.barrettcommunications.co.uk

- Advanced liquid cooled solid state design
- 1.6 30 MHz continuous coverage
- 500 Watt & 1KW continuous duty cycle (100%)
- USB, LSB (SSB), CW, FSK, AM and Digital Modes
- Remote control via IP and WiFi
- Compatible with existing 4 & 6 digital selective calling radio networks
- 2G & 3G Automatic Link Establishment (ALE) options
- ARINC ICAO Annex 10 Aeronautical Selcall option
- Field re-programmable via USB and Ethernet



Barrett 4050 HF SDR transceiver

Visit us at EUROSATORY 2018, Hall 5A - Stand B 322

# TSS International at Eurosatory, Paris

TSS International will be exhibiting in the Holland Pavilion at the bi-annual Eurosatory trade show in Paris, France. The renowned bi-annual exhibition will take place from 11 to 15 June at the Villepinte exhibition center.



Keep reading to find out how TSS defines Armour Mobility.

## TSS Heavy Duty Wheels®

The 18" version of TSS' very successful line of Heavy Duty Wheels has been tested and TüV-approved for a payload of 2000kgs per wheel! The Toyota LC200 is the first vehicle which can benefit from this added payload. Other options are a 1600kg payload version for various limousines, an 1800kg payload version for SUV's such as the Mercedes G-wagen.

For luxury armoured vehicles, such as the Lexus LX570, G-Wagen, Yukon Denali, Mercedes S-Class, Audi A8 and BMW 7-series, TSS also has a collection of high-class, highpayload 20" wheels as well. With a payload of 1600kgs, these rims support the weight of the added protection, as well as fit the vehicle's style.

All TSS Heavy Duty Wheels can be delivered as assembly: balanced and complete with Runflat and optional programmable TPMS-sensors.

## **Rodgard Runflats**

TSS Heavy Duty Wheels are a perfect





For enquiries and more Armour Mobility, such as MOV'IT Security
Brakes and TéléFlow CTIS products: call (+31 180 618922)
or e-mail (sales@tssh.com) TSS
or visit www.TSSH.com for more information.

combination with Rodgard APX and BPX Runflats. Easy to install and extra strong, these 18" and 20" runflats provide life-saving mobility. BPX runflats meet FINABEL Specs with wheel loads of 1800kgs and heavier.

TSS is also your partner for Rodgard runflat inserts for OEM wheels of sizes 15" to 22.5".

## TSS ProtecTank®

TSS ProtecTank® is a self-sealing and



flame retardant treatment of your OEM fuel tank, which can eliminate the necessity to encase the fuel tank of the vehicle with heavy steel armour. TSS ProtecTank is TNO- and Beschussamt-tested and a trusted solution for armoured vehicles world-wide. An explosion suppressant treatment is optional, reducing the danger of the highly flammable vapours in the fuel tank.

## SkyDex

Although the armour might protect the lives of the vehicle's occupants, it does not always protect their lower legs and feet against the energy wave of an under-vehicle IED. SkyDex Shock Mitigation mats act as protection on the steel plating, which can move up to 4cms within microseconds of a detonation.

## B&G Vehicle Intercoms

It is crucial for the occupants of an armoured vehicle that it remains closed for optimal protection. B&G Vehicle Intercoms allow closed-door communication with people outside the vehicle, whether friendly or hostile. Optional Red/Blue lights in the grill can help clear the road in case of an emergency.





International Armored Group (IAG) is a specialized manufacturer of armored vehicles with over 20 years of extensive experience in the industry. IAG has a global presence around the world with offices in Canada, UK, Bulgaria, Pakistan, Iraq and South Africa and we have three manufacturing plants located in United States, Turkey and the United Arab Emirates. From commercial vehicles, to armored ambulances, buses and tactical vehicles, IAG has supplied thousands of armored vehicles worldwide to Governments, Armed forces, Security Contractors, NGOs and Diplomatic Missions. With a combined manufacturing space of 500,000sq ft. and total number of 500 employees, IAG has the capability to manufacture up to 250 armored vehicles per month. In addition, IAG also has several warehouse facilities with the combined capacity to store up to 3 months' worth of materials used in the vehicle armoring process.



## Sentry

## Reconnaissance and Patrol Vehicles

Attributes: Type: 4x4 multipurpose vehicle, Length: 5.3m, Width: 2m, Height: 2.4m, Weight: 4-5t GVW, Ground Clearance: 282mm, Ballistic Protection Levels: STANAG 4569 Level 1, Wheelbase: 3.18m, Max Speed: 130km/h on road, Range: 750-800km on road, Gradient: Powerplant: 195hp 4.5L 8 Cylinders, turbo diesel, Manual transmission, Crew: 2 (driver, commander), Passengers: up to 6, Armament: various pintle mounted weapons.



## Jaws

## Reconnaissance and Patrol Vehicles

Attributes: Type: 4x4 multipurpose vehicle available in LHD & RHD, Length: 5.3m, Width: 2.1m, Height: 2.1m, Weight: 4-5.5t GVW, Ground Clearance: 280mm, Ballistic Protection Levels: STANAG 4569 Level 2, Wheelbase: 2.8m, Max Speed: 130km/h on road, Range: 450-600km on road, Gradient: Powerplant: 176/224/280kW 4.0L V6/4.6L V8/5.7L V8 petrol; 160/207kW 4.5L V8 turbo diesel, Crew: 2 (driver, commander), Passengers: up to 8, Armament: various pintle mounted weapons.



## Guardian APCs & IFVs

Attributes: Type: 4x4, Length: 5.8m, Width: 2.4m, Height: 2.4m, Weight: 8t GVW, Max Speed: 120km/h max on road, Range: 650km max on road, Ground Clearance: 300mm, Ballistic Protection Levels: STANAG 4569 Level 1, can be upgraded to Level 2, Power-plant: 300hp 6.7L V8 turbodiesel upgradable to 400hp, Crew: 2 (driver, commander), Passengers: up to 8, and up to 10 for the XL version, Armament: various pintle-mounted weapons and light turret.



## Sentinel APCs & IFVs

Attributes: Type: 4x4 multipurpose vehicle, Variants: short and long wheelbase, Length: 6.1m, Width: 2.4m, Height: 2.4m, Weight: 8t GVW, Max Speed: 120km/h max on road, Range: 650km max on road, Ground Clearance: 300mm, Ballistic Protection Levels: up to STANAG 4569 Level 2, Powerplant: 300hp 6.7L V8 turbodiesel upgradable to 400hp, Crew: 2 (driver, commander), Passengers: up to 8 in standard configuration, up to 12 in extended variant, Armament: various pintle-mounted weapons and light turrets.



## Guardian Max LTV Mine-protected and MRAP vehicles

Attributes: Type: 4x4 multipurpose vehicle available in LHD & RHD Configurations, Length: 5.5m, Width: 2.4m, Height: 2.5m, Weight: 6.8t GVW, Max Speed: 120km/h max on road, Range: 700km max on road, Turning Radius: 7.5m, Ground Clearance: 290mm, Ground Clearance from lowest point of protected floor: 450mm, Ballistic Protection Levels: up to STANAG 4569 Level 3, Power plant: 300hp 6.7L V8 turbo diesel upgradable to 400hp, Crew: 2 (driver, commander), Passengers: 2, Armament: various pintle-mounted weapons and turret.



## Rila

## Mine-protected and MRAP vehicles

Attributes: Type: 4x4 & 6x6 multipurpose vehicle available in LHD & RHD Configurations, Length: 7m, Width: 2.8m, Height: 2.9m, Weight: 16t GVW, Max Speed: 105km/h max on road, Range: 500km max on road, Electrical System: 24V, Turning Radius: 9m, Ground Clearance: 330mm, Ground Clearance from lowest point of protected floor: 450mm, Ballistic Protection Levels: up to STANAG 4569 Level 3, Powerplant: 380hp 12.8L turbo diesel, Torque: 1900 Nm, Crew: 2 (driver, commander), Passengers: up to 10-12, Armament: various pintle-mounted weapons and turret.



## **Guardian Xtreme**

## Mine-protected and MRAP vehicles

Attributes: Type: 4x4 & 6x6 multipurpose vehicle, Length: 5.9m & 6.4m, Width: 2.4m, Height: 2.5m & 2.6m, Weight: 7.6t & 11t GVW, Max Speed: 120km/h max on road, Range: 700km max on road, Turning Radius: 7.5m & 10m, Ground Clearance: 290mm, Ground Clearance from lowest point of protected floor: 450mm, Ballistic Protection Levels: up to STANAG 4569 Level 3, Powerplant: 300hp 6.7L V8 turbo diesel upgradable to 400hp, Crew: 2 (driver, commander), Passengers: up to 8-10, Armament: various pintle-mounted weapons and turret.



## Rhino

## **Anti Roit Vehicle**

Attributes: Type: 4x4 multipurpose vehicle available in LHD & RHD Configurations, Length: 7.4m, Width: 2.5m, Height: 3.3m, Weight: 18t GVW, Max Speed: 105km/h max on road, Range: 600km max on road, Electrical System: 24V, Turning Radius: 9.4m, Ground Clearance: 257mm, Ballistic Protection Levels: up to CEN B7 Armor Level or STANAG 4569 Level 2, Powerplant: 236hp, 7.8L turbo diesel, Torque: 706 Nm, Crew: 12 members, Armament: various pintle-mounted weapons and turret.



## Phoenix

## **Armored Water Cannon**

Attributes: Type: 4x4 & 6x6 multipurpose vehicle available in LHD & RHD Configurations, Length: 7.7m, Width: 2.4m, Height: 3.3m, Weight: 18t GVW, Max Speed: 105km/h max on road, Range: 500km max on road, Electrical System: 24V, Turning Radius: 9m, Ground Clearance: 330mm, Ballistic Protection Levels: up to CEN B7 Armor Level or STANAG 4569 Level 2, Powerplant: 380hp 12.8L turbo diesel, Torque: 1900 Nm, Crew: 4 members, Armament: various pintle-mounted weapons and turret.



WELP Armouring vehicles can be found all over the world. They are ideally equipped and therefore also suited for extreme road and climate conditions.

Aside from supplying armoured vehicles, we have also specialised in customised bodywork and luxury vehicle conversions to your exact needs and wishes. This form of luxury turns your vehicle into a one of a kind, with a high-quality appearance and look.

Our customers include relief organisations, non-governmental organisations (NGOs), European agencies, international embassies and heads of state.

- Nissan Patrol Y62 (SUV)
- Mercedes-Benz Sprinter (Transporter)
- GMC Yukon (SUV)
- Cadillac Escalade (SUV)
- Chevrolet Suburban (SUV)

and many more models and types like commercial, ambulance and military vehicle.

Experience our certified security vehicles first-hand at our booth G704 at the Eurosatory 2018!









# Tactical, armoured SUVs or vans for ach operation

Welp Group offers a wide portfolio of armoured vehicles for special operations ranging from pick-ups to SUVs.

Our expertise in engineering and production of individual armouring solutions allows for made-to-measure products for almost every application.

Each of our vehicles can be developed and adapted according to the operational requirements in terms of tactics, defence and reconnaissance.

Our armoured F2-TLC in public authority version stands exemplarily for safety and mobility. As a specially protected squad car, it is particularly designed to be suitable for armed special operation forces. Thus it provides specific equipment options for special operation deployments. This includes gun-ports, roof escape hatches (allowing for quick exit in case of emergency), built-in and extendable leg protection at bottom side of each door, tactical light systems, as well as radio communication units.

Such vehicles are used in particular in police situations with high risk potential to transfer armed special forces to their place of deployment under highest security measures.

The ability to safely operate within the area of danger is of severe importance in times of growing terrorist attacks. This mobility allows for fast and effective responses to quickly eliminate the threat and potentially evacuate people out of the danger zone.

In addition to the armoured F2-TLC, we also facilitate professional patient transports out of danger zones with our specially armoured ambulance based on the Mercedes Sprinter. This vehicle is characterized by the multitude of different configurations options making it extremely versatile. Thus the F-MSC can be used as an armoured passenger transporter, delivery vehicle, troop transporter and of course as an armoured ambulance.

The vehicle can be manufactured as desired to either a low protection level (such as VR4) or even to the highest civilian protection level (VR9). Our F-MSC has already been presented at several trade fairs with its full equipment in the past. Nonetheless, the high-quality workmanship and fascinating armour solution made our ambulance the object of interest every single time.

Another highlight is our F6-GMC, which was developed primarily for military use and will soon be available up to protection level VR9. The F6-GMC is based on the GMC Yukon XL Denali and is a successful addition to our existing portfolio. With the development of this special-protected vehicle, we take another step in the supply chain of vehicles for military applications.







## PELI SHOWCASES THE 7-SERIES NEW SMART TACTICAL TORCHES AT EUROSATORY

The Leading Manufacturer presents the new models of the 7-Series: 7110, 7610, 7620 and 7070R

Peli Products, the global leader in the design and manufacture of advanced portable lighting tools, introduces the Peli™ 7 Series LED tactical torches family. The Peli 7 Series lights are built on the foundation of the successful Peli 7600 and Peli 7100 tactical torches, which are trusted by some of the largest law enforcement professionals in the World. Peli Products takes Lighting technology to the next level with the introduction of the newest tactical torches as part of the 7 Series, the Peli 7110, 7610, 7620 and 7070R. These new models will be showcased at Eurosatory (Hall 5A / Stand H450).

"The Peli 7 Series tactical torch line has been developed with law enforcement in mind," said Piero Marigo, Managing Director of Peli Products. "The launch of the Peli 7100 and Peli 7600 lights brought our most versatile duty and tactical expertise to the market, and the latest four additions to the range combine those features along with new exciting technology. We know a torch is a key component of an officer's arsenal so our Research & Development team spent time with users to develop a range of intelligent torches according to their needs in different situations."

One of the distinct features of the 7610 and 7620 tactical torches is the ability to run with multiple battery choices including AA, CR123 and rechargeable. The Peli 7110 model runs with both AA and CR123 batteries. This advantage give officers flexibility and

ensures that the torches will never leave them without light when it's needed most. In the same style as their predecessors, the lights are manufactured with an extremely robust aluminum body and type III hard anodized finish, making them tough and versatile.

The game-changing Peli 7070R tactical torch features exciting, industry-first Bluetooth® wireless technology. It allowes the user to personalize the illumination modes (up to 5 switch sequences with varied light levels and/or flashing modes) through the intuitive app (Android and iOS). This, combined with wireless USB charging, makes it the most advanced Peli torch ever.

Every Peli 7 Series tactical light features a fulltime battery level indicator and several operational options with five selectable programs and four modes: high, strobe, medium and low. With extreme ingress protection, they are able to withstand the harshest weather and extreme conditions during any mission. All Peli 7 Series LED Tactical Torches are covered

by Peli's legendary lifetime warranty (where aplicable by law). See the entire line at www.peli.com





Light	Battery Type	Lumens
Peli 7110 LED (11.8cm)	Runs on 1x AA or 1x CR123 batteries	Up to 445 lumens with one CR123
Peli 7610 LED (13.8cm)	Runs on 1x AA, 2x CR123s or rechargeable batteries	Up to 1,018 lumens with two CR123s
Peli 7620 LED (17.3cm)	Runs on 2x AA, 2x or 3x CR123s or rechargeable batteries	Provides up to 1,124 lumens with three CR123s
Peli 7070R LED (17.5 cm)	Runs on rechargeable or 2x CR123s batteries	Provides up to 1,219 lumens with rechargeable batteries



## PELI-HARDIGG™ UNVEILS THE KEY TO OVER **60 YEARS OF EXPERTISE IN SOLUTIONS FOR DEFENSE & AEROSPACE**

The Leading Manufacturer Describes its 4-Stage Engineering Process and Innovations for the Defense & Aerospace Industries



Peli-Hardigg™ is the largest manufacturer of military and aerospace approved reusable, recyclable, plastic ATA 300 CAT 1, LRU, AGE, WSTAGE, logistic containers and cases. For over half a century, Peli-Hardigg™ engineers have developed virtually indestructible solutions for the transport and packaging needs of the aerospace and defense sector, with the largest selection of durable, permanent and ecological Cases, that can be reused again, and again.

Phil Morrison, Peli-Hardigg's Technical Packaging Project Manager for EMEA, explains: "Peli acquired Hardigg Industries in 2008, and with this acquisition it offers over 60 years of technical packaging knowhow. We have European-based teams in the UK and France. Peli offers an expanding global team of over 30 engineers. Experts in developing solutions for protection and transport of UAV, Aircraft engines, Satcom systems and weapon systems, regardless its size."

"As the inventors of the industry standard cushioning curve formula, innovators in case design and experts in protecting high-tech military equipment, few challenges are beyond our capabilities. Our products have protected the most sensitive, state-of-the-art technologies deployed around the globe under the most extreme conditions by aerospace, military and industrial customers. We are experts at Mission Critical success." Added Morrison.

Peli-Hardigg offers every customer the optimised global resources of a renowned injection and roto-moulded case leader's customised service and manufacturing capabilities. The resulting ability to respond with speed and agility benefits every Advanced Case Solutions customer, whether requiring one unique case solution or a thousand delivered worldwide.

## 4-STAGE CUSTOM ENGINEERING

"In a Peli-Hardigg project there are 4 main stages: evaluation, design, testing and manufacturing. With advanced 3D engineering software we visualize before manufacture how the container will look like from every side and angle. We can also check for any critical interfaces, like checking the shock mount fit and that the plates are well fitted, and how the container will fit around that frame." Explained Phil Morrison, adding: "We have a very unique cut and weld procedure. In Europe we use a proof test facilities and we have our own military grade test lab in the United States. Our customers choose us because we can provide superior asset protection and better material handling for all type of equipment, from a small electronic device to a complete Typhoon tail container".

Pelican-Hardigg™ cases are lightweight, watertight, heat- and impact-resistant and virtually indestructible.

For a detailed demonstration visit: www.Peli.com





PELI™ 7110 Up to 445 lumens



PELI™ 7610 Up to 1.018 lumens



PELI™ 7620 Up to 1.124 lumens



PELI™ 7070R Controlled by Bluetooth App

## NEW PELI™ 7110/ 7610 / 7620 / 7070R: THE MOST TECNOLOGICALLY ADVANCED TACTICAL TORCHES

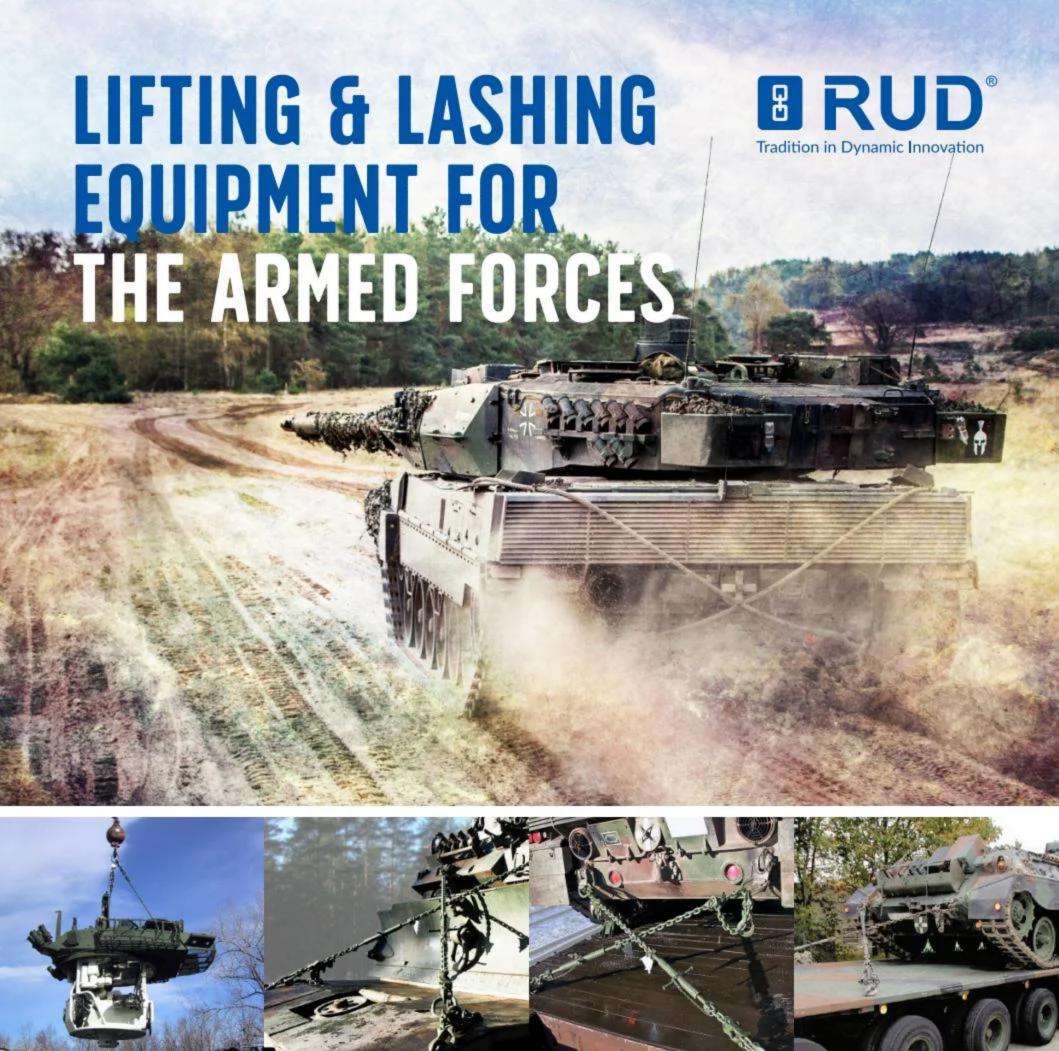
Multi-battery & wireless rechargeable lights

Peli's new tactical lights are all advantages. The 7110, 7610, and 7620 are compatible with AA, CR123 and rechargeable batteries, while the 7070R is wireless rechargeable. Holsters and Wand Kits available (sold separately).

MADE IN

USA

\*GUARANTEED FOR LIFE (Where applicable by law)



- + Over 600 Lifting & Lashing points for bolting & welding
- + Lifting equipment load capacity range from 0.6-250 tonnes
- + Robust & resilient chain that works under harsh weather conditions -60°c to +300°c
- + Lashing points for the transport of MOD equipment on land, sea & air
- + Standard & specialist solutions available to meet your project requirements



HESCO RAID™ IS CAPABLE OF
DEPLOYING 1,000 FEET OF WALL IN
UNDER FIVE MINUTES, ENGINEERED
TO REDUCE THE LOGISTICAL
BURDEN DURING EMERGENCY OR
EXPEDITIONARY OPERATIONS.

Filled with sand or earth, a finished HESCO RAID provides complete perimeter protection against blast, ballistics, and can be joined to HESCO MIL units for the construction of operating bases and fortified solutions.

support@hesco.com

# Nexter & Texelis

win the lightweight VBMR contract



Roanne, February 12th, 2018 -Nexter and Texelis are delighted at today's confirmation by Florence Parly, Minister of Armies, for the attribution of the supply of Lightweight Multi-Role Armoured Vehicles (VBMR Véhicules Blindés Multi-Rôles) for the French Army. The contract went through the "Direction Générale de l'Armement" (DGA) in the presence of Joël Barre, National Armament Director (NAD), and Bernard Barrera, Major General of the land forces.

These 4-wheel drive vehicles are designed for use by the Army's intelligence and reconnaissance units as part of the SCORPION programme. With their multi-role capability, they are equipped with the SCORPION information and communication systems (SICS) and come in several variants: troop transport, command post, artillery fire control, engineering, ambulance, and ISTAR (Intelligence, Surveillance. Target Acquisition Reconnaissance), tactical communication hub, etc.

The Nexter Group will be responsible for the design to cost and performance, integration, production and support of the lightweight VBMR. This fully French-made vehicle will be assembled in Roanne. alongside the VBMR-GRIFFON and EBRC-JAGUAR. thus reinforcing job creation in the Roanne basin and in the engineering offices.

TEXELIS, a French intermediate sized enterprise

based in Limoges, will design and supply the mobility equipment. As the French specialist in heavy vehicle power trains, Texelis contributes to the Lightweight VBMR's mobility performance.

Stéphane Mayer, Nexter's CEO commented, "I am extremely proud and pleased of this recognition of the expertise of Nexter and its teams, who have come up with the perfect answer to this programme's requirements. With this contract Nexter is reinforcing its presence within the SCORPION programme and strengthening its position as the reference player in the field of land armament". This contract follows on from the industrial architect contract awarded to tns-MARS (a JV including Nexter, Safran and Thales), the contract grouping together the design, production and support of the VBMR-GRIFFON and the EBRC-JAGUAR (within a temporary consortium consisting of Nexter. Thales and Renault Trucks Defense) and from the renewal of the Leclerc tank of which Nexter is prime contractor.

For his part, Charles-Antoine de Barbuat, Texelis CEO said, "I am very proud of the Texelis team for the part they have played in winning this highly significant contract for Lightweight VBMR. The decision of the DGA and the partnership with Nexter strengthens and confirms our strategy to be specialists in wheeled armoured vehicle and public transport mobility."







Crosse réglable / Adjustable rifle stock



Chasuble porte-plaques balistiques / Quick Release Plate Carrier



## **COME VISIT US AT EUROSATORY -**

## HALL 6 - STAND F453



Lanceurs d'interdiction maritimes/ Boat Stopping Systems



Gilet pare-balles flottant / Floating Body Armour



Gants tactiques / Tactical gloves

## 

EUROSATORY

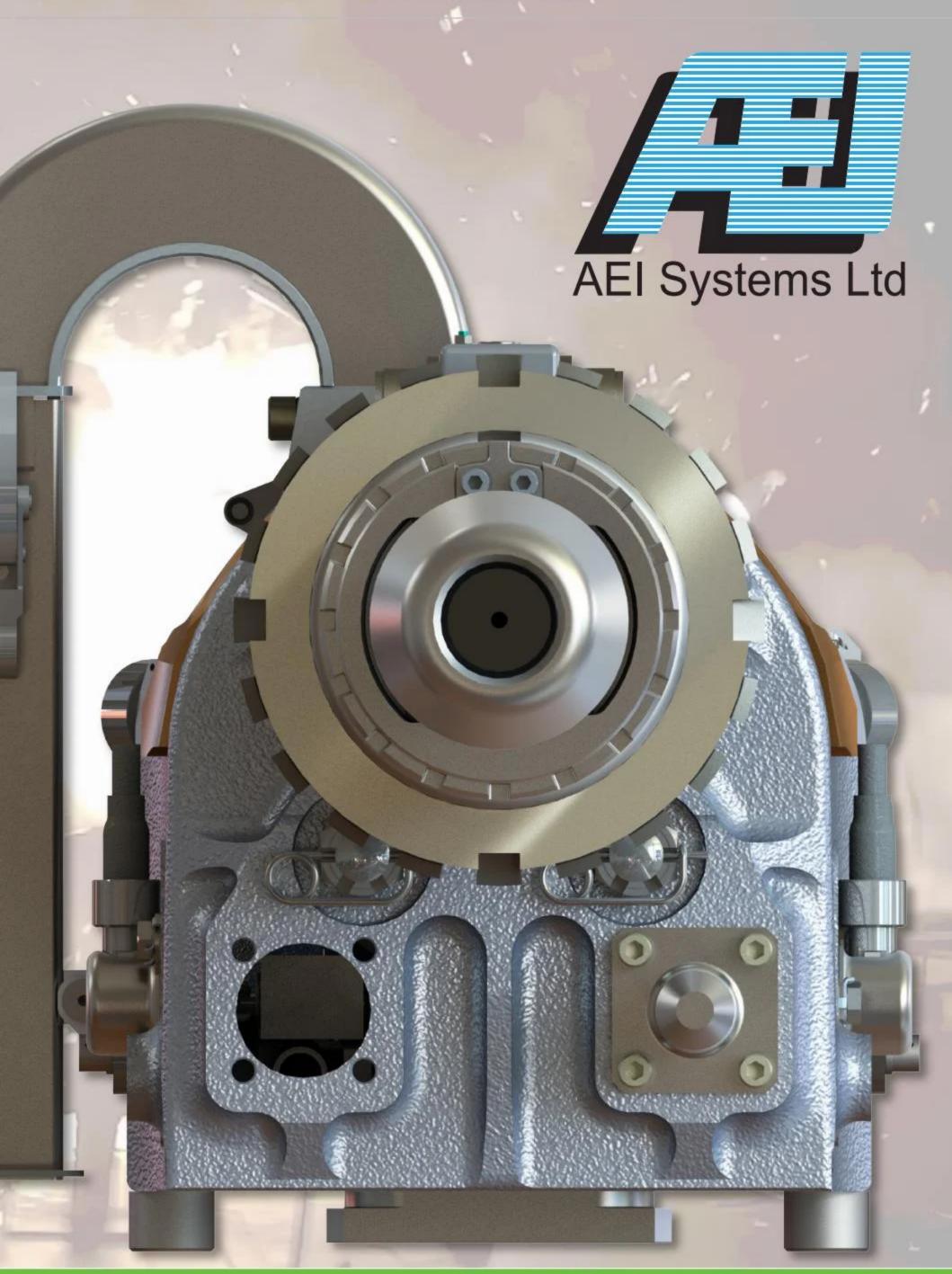
11 - 15 JUNE 2018 / PARIS

**Slovenian National Pavilion:** HALL 6 - **J250** 

**VENOM** is a derivative of the world famous ADEN 30mm and is a gas operated, electrically primed revolver gun.

Configuration is similar to ADEN but with a lengthened barrel for optimised velocity, a muzzle brake for reduced recoil and a barrel aligned recoil buffer for improved accuracy.

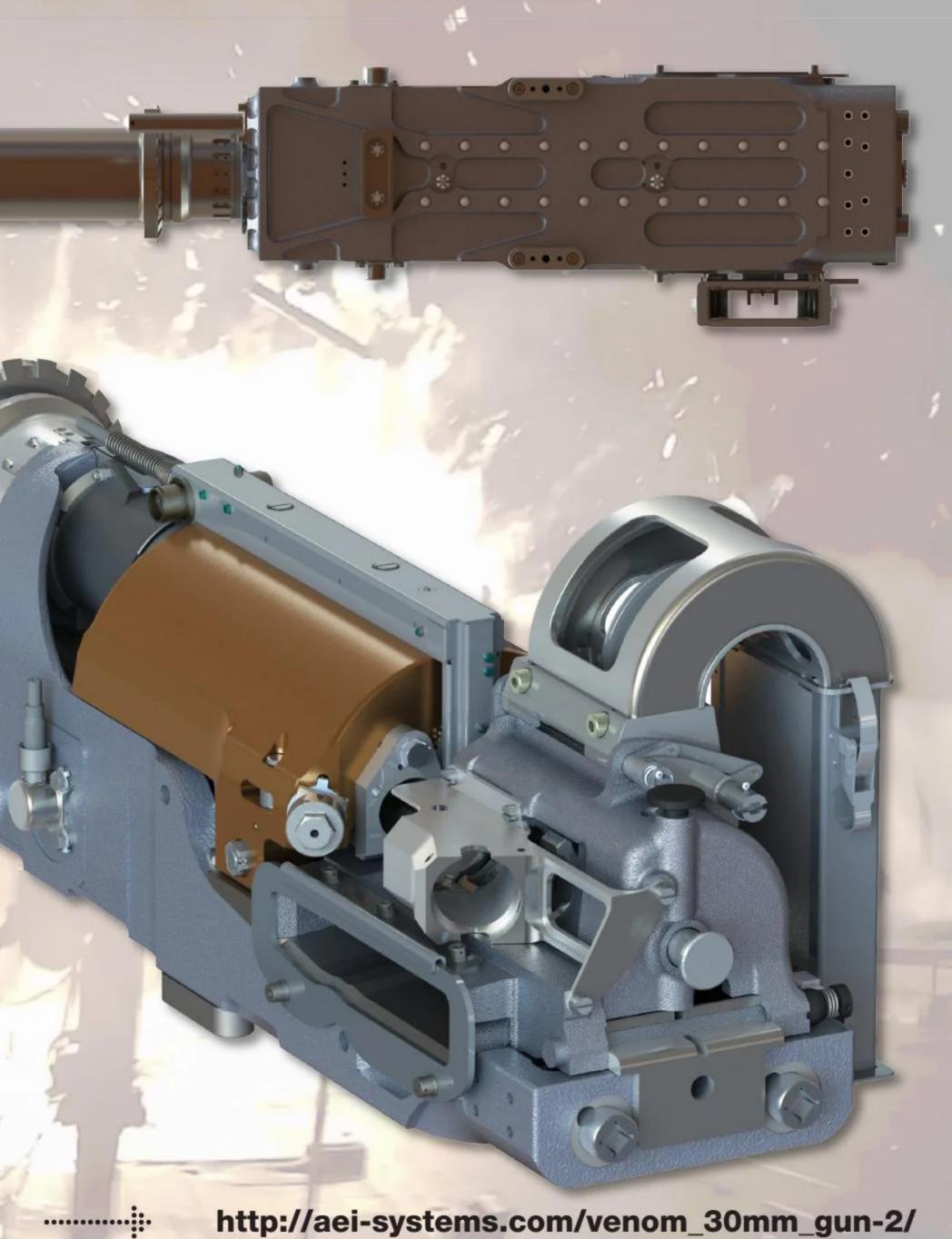
30 x 113 mm Gun





72





73

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#### COOL PORTABLE AIR CONDITIONING

Reliable transportable Air Conditioning units for working in remote locations where temperatures can exceed <-10 °C to >35°C



#### RUGGEDISED AMAZON CASES AND 19" RACKS

MIL STD Accredited, waterproof, impact resistant and customised to your specific application



#### **ERACK - ULTRA LIGHTWEIGHT ELECTRONICS ENCLOSURES**

19-inch ruggedised aluminium electronic transit racks with optional integrated air conditioning

## ABOUTUS

Much more than just a directory...



Military Systems and
Technology has been
established for over 10 years.
It serves the International
Defence Industry providing a
valuable source of information
on Industry News & Product
Development.

Hundreds of International defence companies already work with us. We receive daily the latest articles, press and editorials from global defence manufacturers, contractors and SME'S.

We have grown into a very well known and established organisation that for years has a proven track record of working with defence companies, raising their brand awareness, distributing their press and ultimately producing new business enquiries.



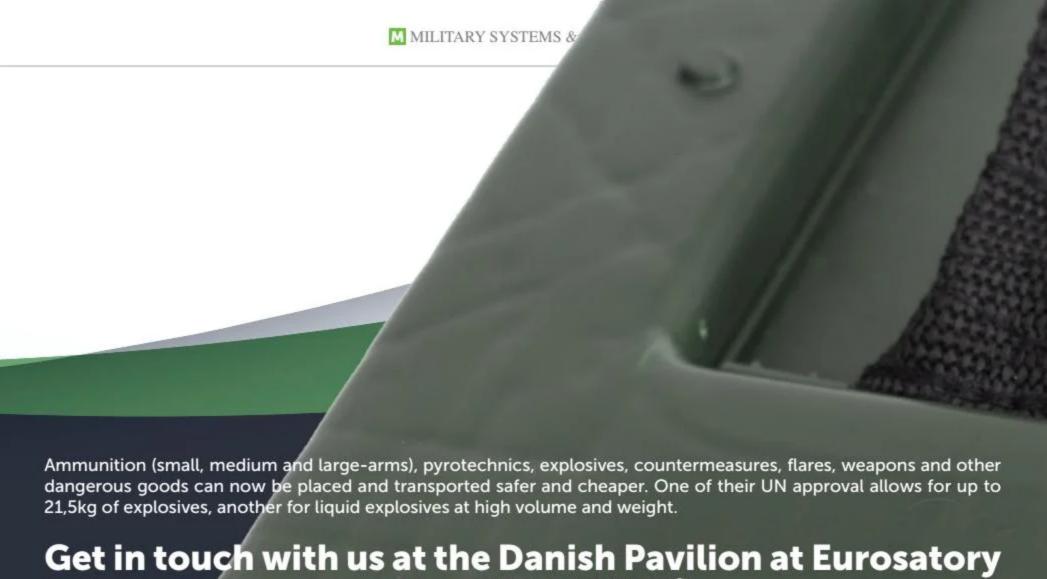
#### PlastPackDefence

# The M2A1 ammunition case reinvented at 765gram!

At Eurosatory 2018, PlastPack Defence will present the latest features of the M2A1-LWAC®, which has been improved further.







### to learn more about the M2A1.LWAC®

Moving away from the aging steel M2A1 to a polymer LWAC®-M2A1 is only a question of changing supplier. The design is a one-to-one drop-in replacement, ensuring that all existing equipment using the M2A1 ammunition can, stays the same. It is the logistical and tactical Light Weight Ammunition Case for the future.

PlastPack Defence innovative M2A1 Light Weight Ammunition Cases (LWAC®) is based on our patented design ideas and specially developed raw-material resins. The M2A1 Light Weight Ammunition Case (LWAC®) is designed as a full drop-in replacement to existing systems and is certified according to all military requirements and standards. The development and design has been performed in close co-operation with end-users, the ammunition industry and universities across the world.



# Water and Fuel – the Breath of Life

# Water and fuel are the breath of life to any military force.

As humans we need water to keep ourselves functioning and engines, whether providing energy to make a vehicle move or drive a generator to charge the plethora of electronics we now have on the battlefield, need fuel.

But fuel and water are bulky, heavy substances to move around the battlefield and can tie up expensive assets. There are ways, however, of reducing the impact.

The first is to separate the tank containing the fuel or water from the vehicle needed to get this tank to its deployment location. Achieving this leaves the vehicle free to carryout a multitude of other tasks.



container standards has had real benefits for the movement of fuel and water. These two commodities can be moved throughout the logistics chain using commercial assets. By

adopting an international, intermodal

design – the ISO frame with its standardised corner locking points – the tank can be moved by road, rail,





sea or even air. When it is then coupled with a hook arm facility you have the ability to move the tank wherever it is needed.

A significant supplier of these types of tanks is the apparently "new player on the block" – GOFA. GOFA however is hardly new, it has been around for over 55 years and it has over 30 years of experience of providing military tanks. It is one of the leading European companies providing transport solutions for gases, liquids and dry bulk and has

the backing of the \$1 billion turn over Chart Industries Group, which operates across the globe.

The company has a range of fuel and water tanks which are optimised for transportation and storage. These

can be customised with differing pumping, purification, heating, and integral power generators.

The other aspect of water and fuel logistics is replenishing only when you need to. Combat logistics convoys are labour intensive, high risk and nobody wants to run them unless they have to. Replenishing a tank on a regular basis just because it might be needed is not effective. It is here where data technology comes into play. The introduction standardised Generic Architecture, or GBA, will result in movements only when they are necessary, which makes it much less predictable for an enemy. In simple terms the levels are transmitted to a central point and replenishment is organised when it is necessary. The requisite Defence Standards are now appearing and will start to be implemented in both new purchases and retrofit.

Bulk storage of fuel can be provided by a 40 foot long ISO framed storage tank from GOFA. This can be provided with its own generator and pumping system making it a main base deployable bulk fuel station.



## DESIGNED TO DEFEND

#### Strong durable rapid construct aircraft hangars

Rubb's Expeditionary Forces Aircraft Shelter System is uniquely suitable for the military and aviation services, designed to be rapidly deployed and erected anywhere in the world. With unmatched relocatable buildings in action across the globe, Rubb has the ideal solution for storage and maintenance requirements.

#### Span sizes

Multiple hangar spans: 11.1m (36ft), 20.4m (67ft) and 25m (82ft)

#### **Packing**

Complete EFASS range of military buildings packs into 20ft ISO shipping containers.



#### Construction

Structures can be quickly built without additional mechanical plant

#### Strength

Withstands wind and snow loads to UK
Defence Standards

#### Usage

Fully demountable for future storage, relocation and construction cycles



















#### **Fabric**

Double skin insulated PVC fabric cladding is fire retardant and can be easily repaired.



#### Handling

Components can be unpacked, constructed, dismantled and repacked by military personnel



#### Access

State-of-the-art hangar doors available including Heli-Door, Trident and Roller Shutter options



#### Framework

The EFASS hangar aluminium framework has been designed to maximise strength, minimise weight and still be robust enough to withstand multiple construction procedures in challenging environments.



excellence in engineering

### EUROSATORY

11 - 15 JUNE 2018 / PARIS

# Eurosatory 2018

# Today the world faces a wide range of conflicts, terrorist threats and emergencies that increasingly intensify.

In the light of this, states and private citizens need defence and security solutions to ensure peace, safety and stability.

Eurosatory is the leading international land and airland Defence and Security exhibition that will be held from June 11 to 15, 2018 at the Paris Nord Villepinte Exhibition Centre. In 2016, it gathered 1,571 exhibitors, 212 Official Delegations, 57,024 international visitors and 700 journalists from all over the world.

Eurosatory constantly follows the evolution and trends of the Defence & Security domain and offers novelties at every its edition putting forward creativity and innovative technology of its exhibitors. Therefore, in 2018, Eurosatory gets some changes in its organisation and in its showcase:

### Optimisation of the exhibiting area

The new hall 5B completes the indoor exhibition area of Eurosatory with a third hall which will be dedicated mainly to Security issues. It will showcase such technological clusters as Intelligence, Civil Security, crisis management and people security, Security of critical infrastructures and sensitive facilities and CBRNe. Moreover, the discovery village will be installed in the hall as well as some national

pavilions. Business meetings and strategic consultancy will take place there.

#### Live demonstrations

Live demonstrations zone will be moved on the area close to the exhibiting halls, so everybody will be able to come by foot to watch live demonstrations. For the first time, institutional Live Demonstrations will complete Eurosatory Live Demonstrations week programme. Among them are French Army, French Police, Special Operations Command, National Gendarmerie Intervention Group, Research and Intervention Brigade, The Paris Fire Brigade.

#### **Eurosatory LAB**

For 2018 edition, Eurosatory has created an all-new Start-Up area, called Eurosatory LAB, dedicated to international start-ups in Defence & Security domain. Eurosatory will select up to 80 most ground-breaking start-up companies to exhibit alongside 1,600 other firms. Internationally renowned keynote speakers will animate the LAB.

#### **Eurosatory Conferences**

Eurosatory 2018 offers a large programme of conferences. International and rather short (less than two hours), they

attract a high-level panel of speakers including operational staff, manufacturers, media, experts, think tanks and high officials. More than 70 conferences will be organised.

#### **Business at Eurosatory**

Eurosatory 2018 offers an all-new BtoB meetings programme. To organise business meetings before the exhibition, exhibitors and visitors can use Vimeet, a platform created by Eurosatory's partner PROXIMUM Group.

To increase networking during five days of the exhibition, all the attendees are invited to use Swapcard application, a connection tool for participants with common interests.

#### **CBRN** thematic event

Eurosatory 2018 will present a new international thematic event dedicated to CBRN issues and organised with the

participation of French and foreign Ops Officers, exhibitors from the D&S domains, state representatives, experts and VIPs. This event completes already existing technology cluster and live demonstration, dedicated to the CBRN issues.

#### **Security Measures**

This year Eurosatory strengths its security measures before and during the exhibition. All attendees should pre-register online with a unique email address, uploading an electronic copy of an identification document (National ID or passport) and a personal identity photo.

The 2018 edition will increase again exhibition's success and will confirm Eurosatory as the major exhibition for the players of airland and land Defence & Security domain. Find more information on www.eurosatory.com.

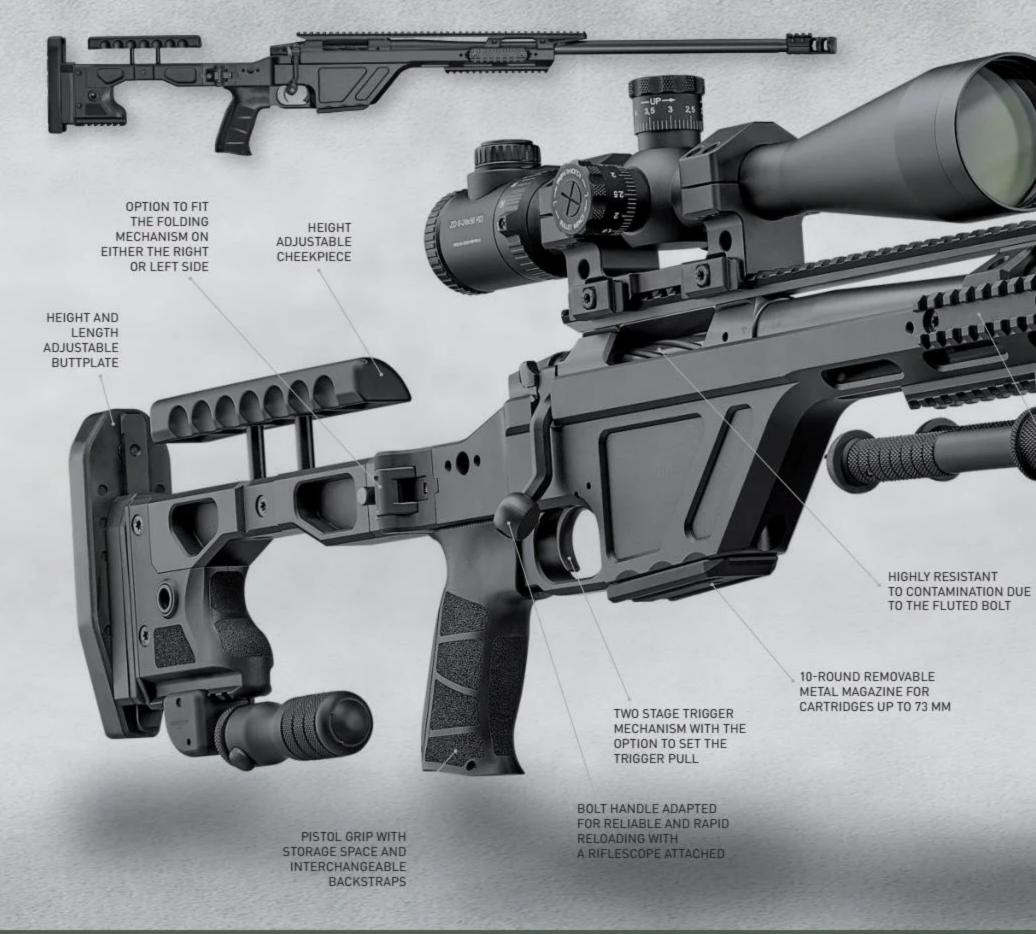


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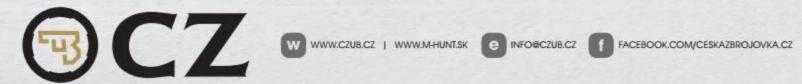


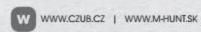
.308 WIN.

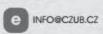
WE KNOW THE SECRET OF ACCURATE LONG DISTANCE SHOOTING.



MAXIMUM MINIMUM CALIBRE OVERALL LENGTH (MM)\* OVERAL LENGTH (MM)\*\* MAGAZINE CAPACITY RIFLING LEAD (MM) FRAME 10 280 ± 10 right ALUMINIUM 920 ± 5mm .308 Win. 1237 ± 5mm









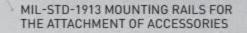


# SUB MOA

M18X1 THREAD

MIL-STD-1913 MOUNTING RAILS FOR THE ATTACHMENT OF ACCESSORIES

> COLD HAMMER FORGED BARREL WITH SUB-MOA ACCURACY



BARREL LENGTH WITHOUT COMPENSATOR (MM)

WITH STOCK FOLDED

WIDTH OF WEAPON (MM) WITH STOCK UNFOLDED HEIGHT OF WEAPON WITH CHEEKPIECE RETRACTED

WEIGHT WITH EMPTY MAGAZINE (G)

OPERATING TEMPERATURE RANGE

ACCURACY

 $660 \pm 1$ 

95 ± 2

70±2

192 ± 2 mm

max. 6 300

from -50°C to +50°

Sub MOA

\* unfolded stock with all buttplates and with compensator

Stated dimensions may be different in particular design and configuration.

\*\* folded stock without buttplates and compensator

### WE WILL-BURT

#### SŢILETTO AL

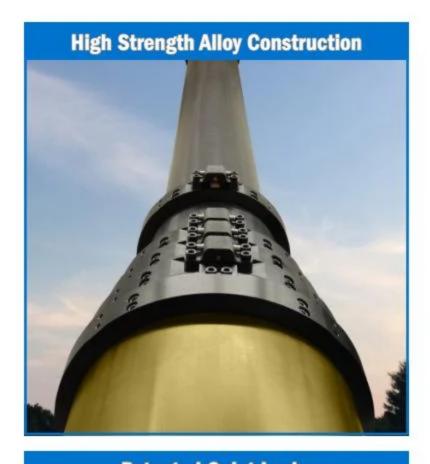
#### High accuracy electromechanical telescoping mast

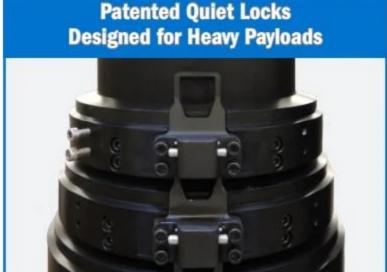
The new Stiletto AL delivers an extremely stable and compact elevation platform for sensors and antennas that require a high degree of pointing accuracy.

This high strength alloy electro-mechanical telescoping mast with patented automatic locks does not require guying and safely deploys payloads at any height. The Stiletto AL is a cost-effective elevation platform designed to meet today's stringent program requirements.

#### **ESSENTIAL FEATURES**

- No guying required, self-supporting mast
- Minimal mast twist
  - Energized keyway guides in accessory-ready collars
- Low wind deflection
- Mast sections are held tight by constricting wear bands
- Quiet operation
  - Direct-drive system powered by environmentally sealed
     600 watt DC motor with manual over ride
  - Patented Quiet Locks designed for heavy payloads
- Reduced maintenance
- Clean air filter system prevents dirt from entering mast
- Integrated dirt/dust wipers and ice-breakers built into collars
- High strength alloy construction
- Integrated PC control
- MIL-STD 810 compliant









www.willburt.com





#### Dates:

14th - 16th May 2018

#### Venue:

Stamford Bridge Football Stadium, London, UK

#### **Taking Firepower Forward**

#### The World's Most **Prestigious and Influential Joint Fires Conference**

A high quality event with very qualified attendees which was very valuable and thought provoking

> - Colonel Milan Kalina, Chief of Artillery, Czech Army



#### A World Leading Speaker Faculty for 2018



Major General Andrii Koliennikov, Armament and Military Equipment Directorate, Armed Forces of Ukraine



Brigadier General Ciprian Marin, Commander, 8 LAROM Brigade, Romanian Land Forces



**Brigadier General** Stephen J. Maranian, Commandant, Field Artillery, Fires Center of Excellence, U.S. Army



Colonel John Musgrave, Commandant, Royal School of Artillery, British Army



Brigadier Paul Tennant, Chief Joint Fires and Influence, HQ ARRC,



Colonel Pasi Pasivirta, Director of Artillery, Finnish Army Command

#### **Attend Future Artillery To:**

- Learn how land forces are planning to conduct future fires operations under the concept of multi-domain battle, to enable freedom of manoeuvre and superiority against the fullyintegrated modern threat
- Adopt the latest technology and techniques to reduce vulnerabilities whilst using precision-guided munitions in a digitised battlespace
- Explore how to use your fire support systems in combat to better locate, track and assess hostile artillery, mortar units and formations
- Ensure an effective and rapidly mobile fires capability, by engaging in collaborative strategies to increase coordination and joint-capability between allied and partner nations























**Tel:** 0207 036 1330



















#### Vehicle Mounted Mobile Sound Ranging Array (MSRA)

AMMS: stand alone, not networked



#### A single Acoustic Multi-Mission Sensor (AMMS) is able to:

- detect and locate SAF postitions within two degrees angular accuracy and within 5% of range
- even if the bullet is passing the sensor up to 200m miss distance (Closest Point of Approach)
- point in the direction of a blast, e.g. Mortar & RPG
- detect, locate and track low flying attack helicopters

CAMEL: stand alone, not networked



#### Two AMMS, the CAMEL Configuration, is able to:

- improve the aforementioned acoustic capabilities
- separating incoming and outgoing fire on the vehicle deck

#### CARAVAN: the networked capability











When the CAMELS are networked, optionally over a variety of vehicles, a Mobile Sound Ranging Array is created, enabling:

- detect and locate Rockets, Artillery & Mortars
- detect, locate and track multicopter drones

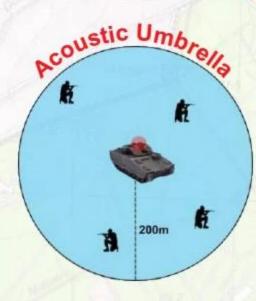
#### All sorts of Vehicles











- Self protection to the vehicle and/or convoy
- Self protection to its dismounted crew
- A contribution to the overall Mobile Sound Ranging Array

## CONTACTUS

# For further information and friendly advice...

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