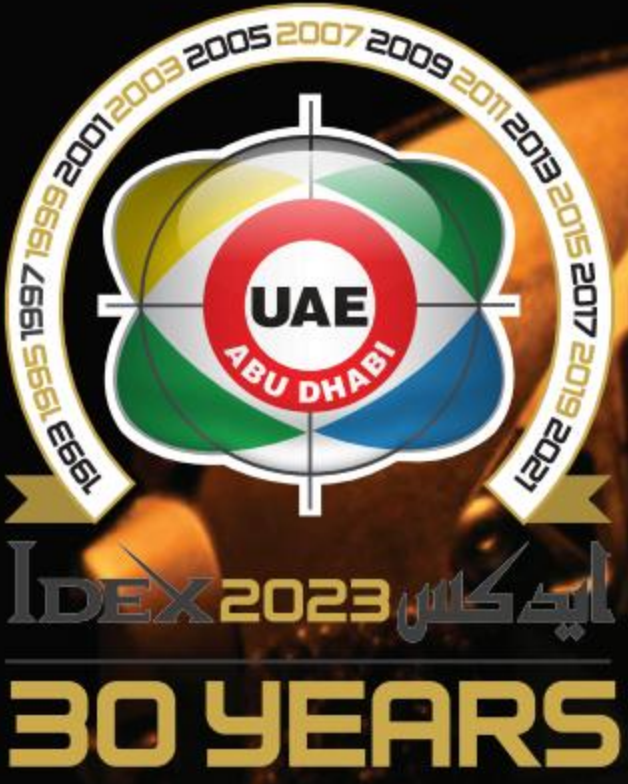


# M

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# M

**W**e welcome you to our first edition of 2023 and look ahead to the upcoming IDEX and NAVDEX exhibition.

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 magazine is designed to keep you up-to-date with latest news and events within the Defence Industry's Governing Bodies, Organisations and Companies.

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Under the Patronage of His Highness Sheikh Mohamed bin Zayed Al Nahyan, President of the UAE

# IDEX and NAVDEX 2023

to showcase a range of new  
and exciting features





# 16th edition of IDEX and 7th of Navdex organised by ADNEC Group at Abu Dhabi National Exhibition Centre

Abu Dhabi, UAE – 2nd of January 2023: Under the patronage of HH Sheikh Mohamed bin Zayed Al Nahyan, President of the UAE, ADNEC Group is set to host the 16th edition of the International Defence Exhibition and Conference (IDEX 2023) and the 7th edition of the Naval Defence Exhibition and Conference (NAVDEX 2023), which will take place on 20-24 February 2023.

Organised by ADNEC Group at the Abu Dhabi National Exhibition Centre, in association with the UAE Ministry of Defense, the events are set to showcase a wide range of new features and attract leading participants and exhibitors from the international defence industry.

The upcoming edition of IDEX marks the 30th edition of the event and, along with NAVDEX these events have become the largest of their kind in the world. The events are expected to host high-calibre participation, including



leaders, decision-makers, ministers and senior officials, as well as industry experts and professionals from all over the world.

As part of the event week, in a first of its kind, ADNEC will host a series of high-level round table discussions with prominent industry thought leaders and commentators. These leading industry experts will gather to discuss recent and critical topics around the defense and naval industries, with an outcomes based objective to collaborate on focused industry reports.

IDEX and NAVDEX will introduce IDEX Next\_Gen, a space dedicated for startups which will enable entrepreneurs







to demonstrate their solutions and technologies in the defense and naval sector to leading figures in the industry. The events will also introduce the Innovation Trail, a focused journey through the exhibition, highlighting the latest products and innovations for the defence and naval community, from the world's leading brands. Exhibitors will be able to submit their newest and most innovative products and solutions for selection as part of this curated journey, which will attract the interest thousands of international and local buyers.

On the content side, and again as a first of its kind, IDEX and NAVDEX will each feature dedicated free to attend

theatres for attendees to learn about the latest industry critical topics., NAVDEX Talks, located in the brand new marina hall, will focus on the naval defence industry, whereas IDEX Talks will include sessions that will cover a variety of engaging topics related to the global defence sector. These topics include: Women and, Youth in Defence, Defense Heroes and Motivational Masterclasses.

The events will also feature an area for fans of defense history. 'Defence Through the Decades' will showcase an interactive gallery style, highlighting products and technology from the industry throughout the past 30 years.

IDEX and NAVDEX provide a globally leading platform, showcasing the latest international defence innovations and technologies, along with the most advanced technology and equipment developed by defence industries across the world. The previous editions in 2021 recorded renowned success, welcoming over 62,000 visitors and more than 900 local, regional and international companies from 59 countries, in addition to hosting 35 national pavilions.

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# PROVEN PERFORMANCE, UNMATCHED INNOVATION



## Digital Engineering Helps Enable Fast Delivery of New Capabilities to Warfighters

**D**igital tools and analytic platforms are integral to today's military systems — how they are designed, engineered, tested, operated and sustained.

This process, known as digital engineering, is a core competency of GM Defense and central to how the business fulfills their mission as they work to transform the delivery of modern solutions and provide enhanced warfighter capabilities. GM Defense's ability to deliver commercially proven and tested integrated vehicles, alternative power solutions, and autonomy and connectivity that are streamlined, rugged and reliable is also a direct benefit of the close relationship with their parent company, General Motors, a global digital engineering leader whose capabilities have been developed, tested, proven and correlated for decades.

A subsidiary of General Motors, GM Defense has access to the extensive resources of its parent company which has a legacy of defense and innovation that spans more than 100 years. In addition to world class manufacturing, a global supply chain and billions of dollars investments driving cutting-edge commercial technologies, GM Defense also offers global defense and government customers the benefits of advanced engineering tools that can detect and remedy issues as they occur, and long before the manufacturing process begins.

### Disrupting Tactical Military Mobility

The Infantry Squad Vehicle (ISV), a purpose-built troop transporter designed for the U.S. Army's Infantry Brigade Combat Teams, is a cornerstone program of GM Defense. The program focuses on meeting the Army's need for rapid ground mobility and awarded the ISV prototype phase through an Other Transaction Authority to





# DEFENSE

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*ISV Family of Vehicles includes Heavy Gun Carrier (left) currently fielded nine-passenger ISV (middle) and All-Electric Military Concept Vehicle (right)*

speed modernization and acquisition. Based on the Chevrolet Colorado ZR2 midsize truck architecture, the ISV features 90 percent commercial-off-the-shelf parts, including Chevrolet Performance parts that enhance the vehicle's off-road capabilities. GM Defense showed its speed, flexibility, and agility when it delivered the first production vehicles within 120 days of contract award in 2020. The business delivered further enhancements to the ISV to meet U.S. Army requirements by leveraging data, virtual modeling and simulation to improve performance for various field conditions.

**Other benefits that digital engineering brought to the ISV program include:**

- **Speed of delivery.** With digital engineering, the ability to detect and evaluate designs in a multitude of use cases – and move straight into production with one optimized design-

provides tremendous cost savings as it reduces prototype costs and physical testing. The ISV is a proven example on how GM Defense leverages GM's proven technology and advanced manufacturing to support the U.S. Army program. Thanks to digital engineering, GM Defense supported the Army as they fielded the first ISVs to the 82nd Army Airborne Division the spring of 2022, with the second fielding to the 101st Army Airborne Division later the same year.

- **Flexibility to meet diverse mission needs.** With the help of digitally engineered prototyping, GM Defense self-funded an ISV family of vehicles with multiple variants based on the same chassis including:
  - the All-Electric Military Concept vehicle (eISV), which was developed in just 12 weeks using GM's commercial-off-the-shelf electric battery technology;





– *Five-passenger heavy gun carrier, also developed in just 12 weeks that includes a 46-inch/ 117-centimeter ring turret capable of mounting a variety of heavy and medium machine guns and grenade launchers;*

– *the two-passenger vehicle, with a configurable payload capacity to include a tactical network shelter, mortar carrier, mobile counter-unmanned air systems platform and electronic warfare systems;*

– *and the four-to-six-passenger military vehicle with configurable payload capacities and modular mission equipment packages to include heavy gun weapons carrier for direct action operations.*

- **Interoperability resulting in effective communication.** The ISV features an integrated communications and mortar system, supported by digital records, tools and analytics that ensure components connect and work together to deliver effective communications.

GM Defense employs best practices and advanced tools that result in a higher degree of reliability and quality from the design phase all the way to manufacturing. With the goal to meet the U.S. Army's rapid acquisition objectives, GM Defense opened a state-of-the-art, low-rate manufacturing facility in Concord, North Carolina, in May 2021. Completed in just over 90 days from the start of construction to the start of vehicle production, the advanced facility began manufacturing the ISV using the most advanced manufacturing tools available. As a result of GM Defense's ability to adopt GM's high volume manufacturing processes – optimized for maximum speed, efficiency and effectiveness – the National Association of Manufacturers' (NAM) Manufacturing Leadership Council selected GM Defense as a winner of the 2022 Manufacturing Leadership Award in the Operational Excellence category.

## Leading the Transition to a More Electric, Autonomous and Connected Future

As mobility and power generation needs evolve for global government and military customers, GM Defense is well-ahead of the innovation curve. As GM carries out its vision in the commercial industry for an all-electric future, GM Defense is leveraging GM's committed investments totaling \$35B in electric vehicle and autonomous vehicle technologies to help its defense customers transition to a more electric future.

Just as the commercial industry transitioned to alternative propulsion systems, starting from hybrid vehicles to now more advanced all-electric vehicles, defense and government customers are starting to see the benefits of bringing commercial advancements in battery electric technology for use in military applications. Digital engineering tools and simulations have played a critical role in electric vehicle development, including structural integrity and occupant protection, weight and stability, range and acceleration, and braking and handling. GM Defense has leveraged those learnings to help transition its global defense customers to bring forward electrification technologies that help them on a pathway towards a more electric future.

Electrification enables enhanced capabilities on the battlefield, including lower thermal and acoustic signatures, which helps conceal infantry brigades from sensors on satellites, aircraft and missiles. GM Defense developed the eISV with battery electric technology, to demonstrate the tactical benefits of silent drive, silent watch, silent operations and access to offboard power.

## A Trusted Partner in Propulsion Systems and Technology

Recognizing its leadership in electrification, GM Defense is exploring the tactical benefits for their U.S. customers on a path towards a more electric future for military fleets. Highlights include:

- In partnership with the Army's Ground Vehicle Systems Center, GM has been developing fuel cell vehicles in collaboration with the Department of Defense for nearly two decades.
- In 2022, GM Defense was selected by the Pentagon's Defense Innovation Unit (DIU) to develop a battery pack prototype for testing and analysis on Department of Defense platforms. GM Defense is using GM's Ultium battery platform to meet requirements for a scalable design for tactical military vehicles.
- Also in 2022, GM Defense was selected by the U.S. Army to provide a GMC Hummer EV pickup for analysis and demonstration.

By leveraging their digital engineering capabilities and commercially proven technologies that include electrification, GM Defense delivers faster, stronger solutions and a competitive advantage to U.S. and allied warfighters and peacekeepers.

To see digital engineering come to life through advanced commercial technologies, such as the ISV Heavy Gun Carrier derivative, GM's most advanced battery electric technology – Ultium Platform – and GM's fuel cell power cube, visit the GM Defense booth at IDEX, Feb. 20-24, or visit GM Defense.

[www.gmdefensellc.com](http://www.gmdefensellc.com)





DEFENSE



Infantry Squad Vehicle

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## Mine Blast & Utility Seat Systems



The **SCHROTH Mine Blast Protected Seat Systems** are tubular lightweight systems with a unique resettable Energy Absorbing (EA) system designed into the seat.

The EA design and technology comes from the years of experience **SCHROTH** has with energy management in seatbelt systems. The design of the seat gives the occupant not only excellent protection in a mine blast event, but also offers excellent protection in the event of an accident or impact. The All Belts to Seat (ABTS) design allows the vehicle manufacturer to optimize the installation of the seat within the hull. An integrated footrest can also be incorporated into the seating system for additional lower-leg protection. The unique **SCHROTH EA** technology is tunable to match the size and weight of the vehicle as well as the level of protection required and the available space within the vehicle interior. The EA is also designed to reset itself and offer high levels of protection for the secondary (slam down) event.



The Mine Blast protected seating system is available in two versions:

- **SU-62 compact forward- or rear-facing seat**
- **SU-63 side-facing seat with full or side specific headrest for exceptional side impact protection**

The **SCHROTH** seating comes standard with an ECE certified lightweight 4-point harness restraint. Restraint systems with ECE complaint 5-point seatbelts are also available.

**SCHROTH** offers the ideal system for military personnel & troop transport configurations.





## KEY FEATURES

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Our lightweight seat systems may be adapted to many ground vehicle applications. We can assist with interface, integration, installation and ergonomic requirements as well as any vehicle specific seat modifications that may be required.

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## C P C A S E S NEWS



# WHAT ARE THE BENEFITS OF CLIMATE CONTROL SYSTEMS IN 19" RACKS?

In today's modern world, valuable electronic equipment is paramount to the success of organisations from defence and military to broadcasting, keeping expensive equipment safe is vital. Whether it's storing or transporting technology, having equipment ready to deploy on demand is game-changing for multiple industries.

Electronic equipment is fragile and can be sensitive to extreme environments. This is why safe storage and protection are non-negotiable. Multiple industries may be required to transport electronic equipment in extreme temperatures that could damage the operational efficiency of equipment in critical situations. Climate control systems keep technology safe whilst maintaining the appropriate operating temperature, meaning equipment can be relied upon in all situations.

### **Protects sensitive equipment from extreme heat**

Extreme heat is bad for electronic equipment and it can impact how well technology runs. For military, security, broadcasting, satellite, live performance and more, failure of electronic equipment in the field is simply not an option. During times of high pressure, equipment overheating absolutely must be avoided.

Climate control systems in 19-inch racks enhance the performance of equipment in any environment whether it's during transportation or in an office. COOL Portable Air Conditioning offers temperature control that protects the sensitive components from heat which, as a result, maintains the optimum operating efficiency.

The air-conditioned server rack cools the equipment to reduce stress on the server's current cooling system which minimises the likelihood of overheating damage.

### **Reduces the risk of condensation/mildew damaging products**

Maintaining optimum temperature control is vital to prevent moisture from forming on electronic equipment. Moisture and technology don't mix well and can lead to condensation or mildew forming which can destroy expensive electronics. The benefits of climate control systems are that they maintain a consistently cool temperature with regular air conditioning that doesn't create an environment for dampness to survive.

When using technology in extreme conditions, from hot environments to high-pressure outdoor military climates, condensation can wreak havoc. This is why having a climate control system installed on 19-inch racks minimises the risk of equipment failure.

### **Improves the air quality for humans**

The benefits of climate control systems can help humans too. Keeping the temperature-controlled and cool reduces dampness and moisture in the air. As a result, the air quality where technology is stored is much improved. This allows not only the technology to perform optimally but also the personnel working with it.

Having improved air quality in mission-critical situations can make a huge difference in the outcome which is why climate control systems are a must.

The overarching benefits of climate control for rack-mount equipment include improved technology reliability, reduced running costs, a longer working life of systems and safe transportation in extreme heat. Technology is crucial in many industries and when used in the military or broadcasting, the failure of electronics is not an option. This is why storing 19-inch racks with climate control systems is vital.





**Delivering integrated solutions  
based on British excellence to  
counter the IED threat.**

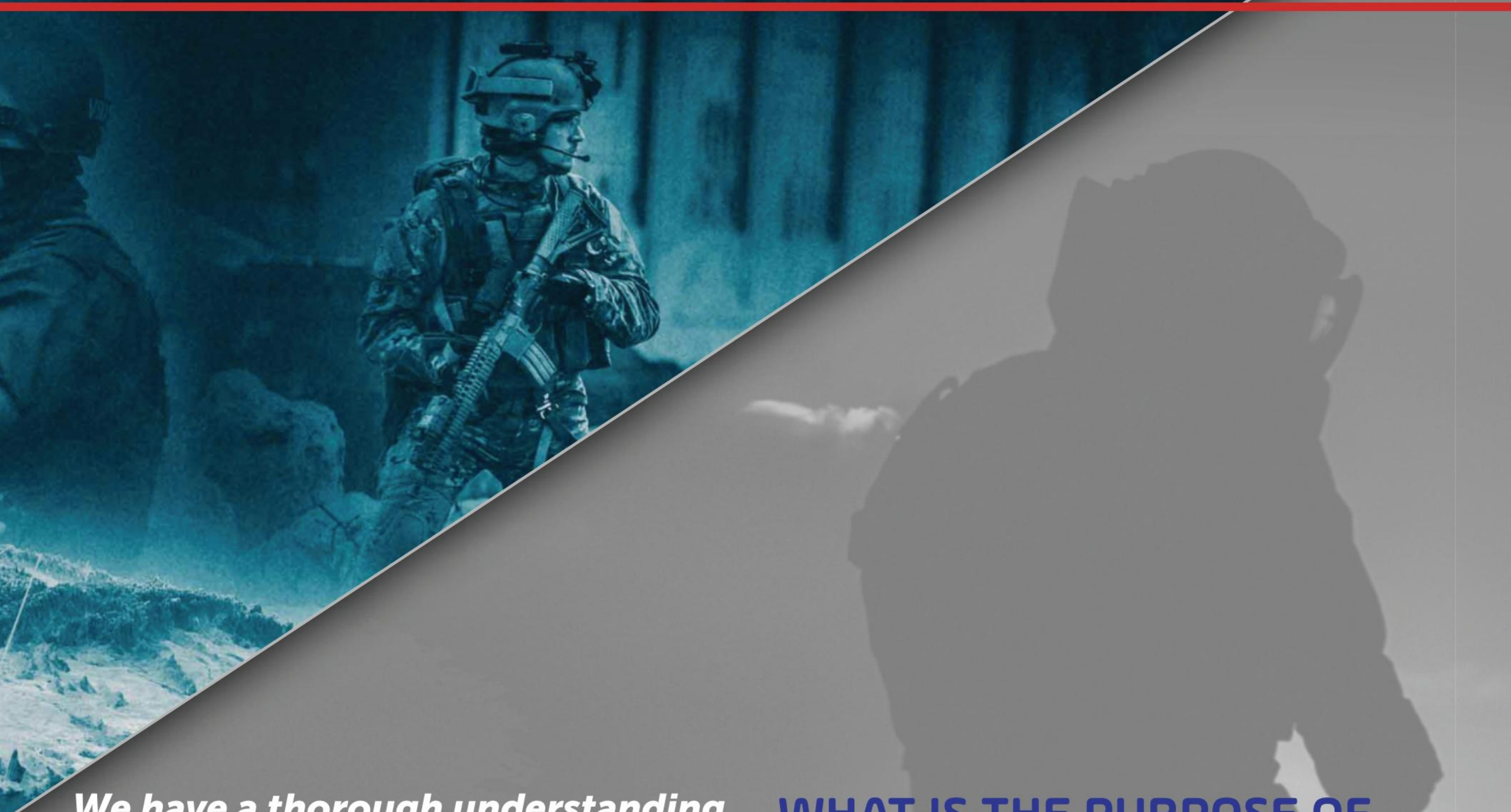
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A special Interest  
Group of







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Representing the UK's Counter Explosive Ordnance supply chain and collaborating with Her Majesty's Government, British Army and security forces, Counter-EO UK delivers integrated solutions to enable partners to counter the threat of IEDs, explosive remnants of war and other explosive threats. Working in line with the NATO Doctrine stated Lines of Operation: Attack the Network, Prepare the Force and Defeat the Device, and delivering a depth of operational understanding and Intelligence, Counter-EO UK can offer integrated improvised explosive device disposal and weapon intelligence solutions tailored to customer needs. The group can also help reduce the threat posed by unexploded artillery & mortar shells, hand grenades, cluster munitions, bombs and similar weapons often found after the end of active hostilities, plus the logistical disposal of energetic materials.

The UK Counter-EO Industrial base has earned worldwide respect through over 40 years of experience of working alongside our government colleagues to deliver capability. We understand the threats and partner with government agencies to define requirements. We can then measure against a dynamic, UK Counter-EO database to identify system of system options, capability gaps and choice of suppliers. We listen and work with customers to analyse the threat and assess existing capability. We present options for an End to End Capability (E2EC) with a timeline for delivery and an integration plan to deliver the maximum effect.

## WHAT IS THE PURPOSE OF THE GROUP?

Counter-EO UK exists to generate opportunities for better business for its members, in the UK and international markets. By collaborating with relevant stakeholders in government, we secure a joint role in the planning of procurement, innovation and partnering. We establish a strong and unified presence in the Defence and Security markets in order to maximise the branding, activity and relationships for Counter-EO UK members and the value proposition to future customers of our End to End Capabilities.

## Membership:

- Presents opportunities for new business.
- Enables networking for the members within the group, with relevant decision makers and influencers in UK government and overseas customers.
- Generates opportunities for a joint presence at events.
- Delivers a strong marketing message for Counter-EO UK, including individual member company material.
- Regular, relevant information from the market to the members.
- Provides genuine influence for all members across the national and international Defence and Security sectors.

## How do I Join?

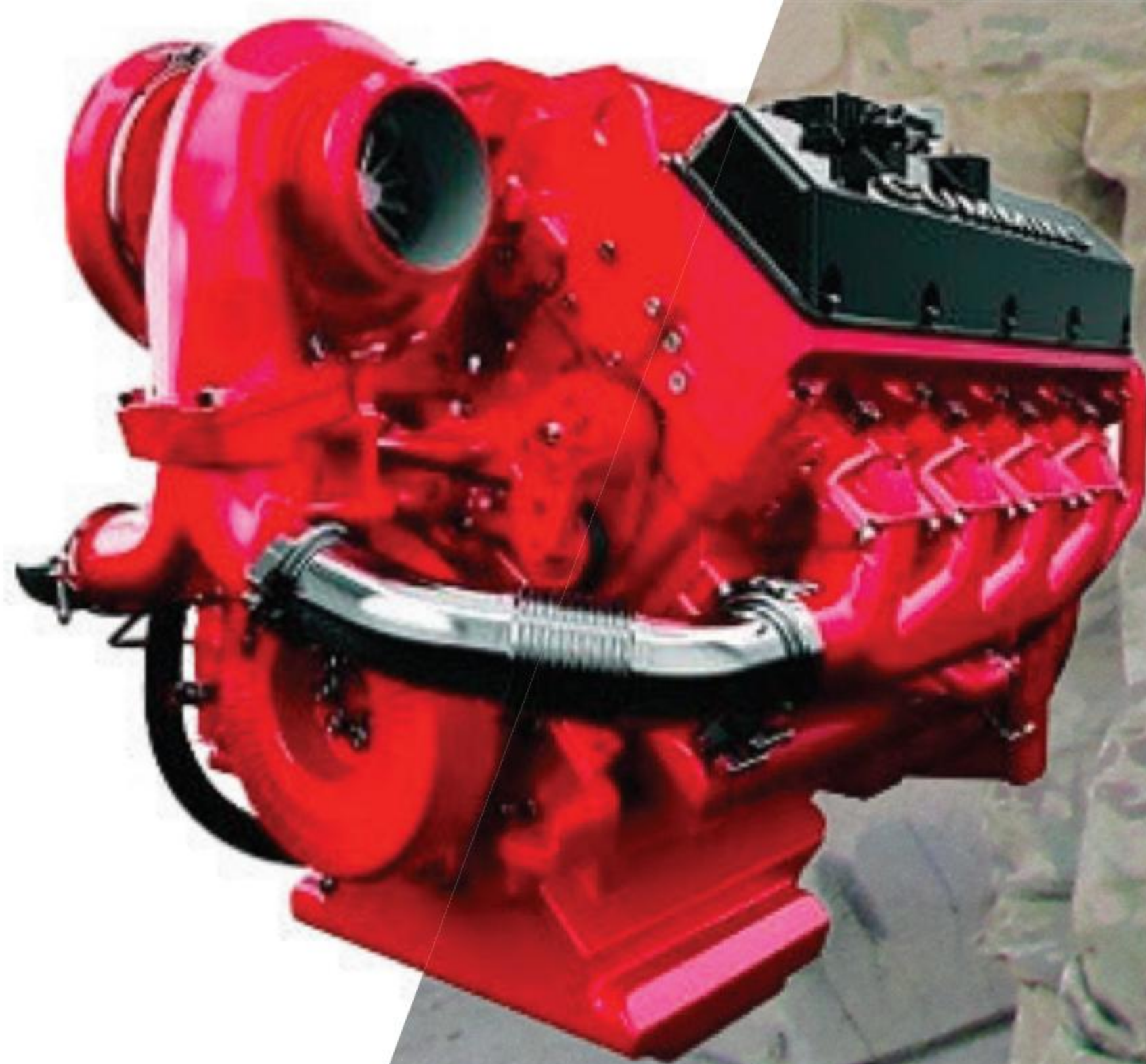
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# Benefits of blind mate connectors

Electrical connectors must often be mated in situations where they are hard to see or difficult to reach.





Combined with the fact that they are challenging to use in harsh environment applications, installation and maintenance times are longer, leading to increased costs. Here Dawn Robinson, Senior Product Manager at connector specialist PEI-Genesis, discusses how blind mate connectors can help engineers address these challenges.

Blind mate connectors achieve a connection through a sliding or snapping action or by using guide pins, without the use of special tools. Unlike other connector types, many blind mate connectors have self-aligning features that correct small misalignments when mating and help guide the connectors into the correct mating position. This feature is quite different from the more rigid coupling mechanisms found on threaded or bayonet couplings, reducing the chance of connector damage and preventing problematic errors caused by incorrect mating.

Since users might not be able to see if the connectors are correctly mated, blind mate connectors can provide auditory confirmation to give the user confidence that the connection is properly achieved. Again, this is a significant improvement from merely hoping that a reliable connection was made, especially when the application depends heavily on a stable connection.

There are various connector types available with blind mating options, including power and/or signal connectors with either cable or board mount options, connectors with multi-pin arrangement between racks and panels, optical connectors, and RF connectors. Blind mate connectors are also available in various orientations, including wire-to-board, board-to-board and wire-to-wire.

## When are blind mate connectors best for the job?

Blind mate connectors are a popular choice in a variety of mission-critical applications. From medical equipment to electric power transmission systems and military radar equipment, they excel in any situation where the receptacle is hidden or recessed so that it is difficult to see or reach. This includes the back of an interface card plugged into a chassis and other “black box” installations.

Using blind mate connectors provides several key benefits, including reduced production, installation and maintenance costs, shorter assembly times and a minimal impact on the size and weight of designs. Furthermore, using blind mate connectors typically results in fewer mismatched connections. This is invaluable in mission-critical applications where any unplanned downtime is disastrous.

It's important to remember that blind mate connectors are also designed to be extremely durable. If mistreatment occurs, they remain reliable and continue to perform as expected.

PEI-Genesis understands the frustrations of trying to mate connectors in hard to reach, hidden situations. It also knows that the ability to achieve a stable, reliable and correct connection is crucial to any design, whether you are engineering downhole test equipment for the oil and gas industry or power and data connections essential to an autonomous vehicle's safety. Let our design team help you find the right blind mate interconnect solution for your unique application.

To find out more about what connector type is best for a given application, subscribe to PEI-Genesis' blog for helpful articles that will help you choose.

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# Why use Open Architectures?

## Present Day Challenge – Disintegrated Stove-Pipe Solutions

**T**he historic approach to delivering RF mission systems for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) and Electronic Warfare (EW) saw the development of monolithic ‘stove-piped’ equipment. These systems responded to immediate RF mission needs, but without prioritising the integration between standalone systems. This has left a patchwork of hard-earned system interoperability, rather than creating a planned and optimised homogenous base to build future capabilities upon.

This evolved collection of disintegrated solutions sees a high degree of functional duplication with little useable redundancy. Dedicated compute nodes, power systems, and location services drive up the Size, Weight and Power (SWaP) envelope, leaving less space for personnel while making platform Electro-Magnetic Compatibility (EMC) control problematic.

The relentless pace of commercial telecommunications development has put extreme pressure on this legacy approach. This often renders custom equipment programmes superannuated upon delivery, plagued by obsolescence in support and unable to deliver their intended benefit within the Cyber and Electromagnetic Activity (CEMA) landscape. When coupled with long procurement cycles and a limited supplier base, staying ahead of the curve becomes all but impossible.

### The Benefits of Open Architectures as a Solution

Moving to an open standards based approach to Radio Frequency (RF) system architectures is a non-trivial task. To effectively prescribe a suite of standards that will service such a diverse range of requirements - some of which, as yet, are not fully known - might in the first instance seem like folly. However, the history of standards development in the commercial sector shows how an iterative and collegiate approach to developing standards can produce highly successful and sustainable systems.

### Coordinating the approach to CEMA

Current joint doctrine notes a move away from military services conducting CEMA independently, advocating for more coordinated joint force activities. This is considered an essential step within sovereign forces, but is also a key enabler when operating alongside a wider group of allies, many of whom are also transitioning to a holistic services footing. An enterprise approach to information management allows more portability of information between mainland and contingent theatres, and also presents opportunities for more coordinated activities between other government departments.

### Modular Open Suite of Standards

Implementing a suite of layered standards for hardware, software and networking allows the benefits of each standard to be individually realised, whilst also combining to form a fully converged architecture.

- *The hardware layer defines common form-factors for physical, electrical and environmental interfaces, ensuring new capability-specific hardware modules can be fielded with minimal disruption from platform integration activities.*
- *The software layer builds a framework for component-based applications that target heterogeneous embedded hardware systems (GPP/FPGA/GPU). This supports the portability of electronic surveillance, defence and attack capability applications across the full fleet of future platforms.*
- *The network layer provides a scalable interface for new intra-platform capabilities whilst also providing an interim interface for legacy systems to access shared services. In addition to supporting fleet management and In-Service Support (ISS) activities, a networked connection between platforms and the wider enterprise can augment local system configuration with wider strategic level EW management insights.*



User  
(Services)

## System Integrator Ecosystem

Technical  
(DSTL)

Commercial  
(DE&S)

Combining modularised radio functions such as switches, amplifiers and antennas with a system level scheduling service, allows sharing of scarce RF resources. This supports efficient use of the hardware that is often a challenge to SWaP and platform integration. A modular approach not only permits system scaling and dynamic re-configuration, but also lowers the operator's cognitive burden through the implementation of a common and familiar Human-Machine Interface (HMI).

### More than just a technical solution

Applying open standards to technical architectures clearly brings significant benefit to the capabilities available to commanders, but the potential of this approach is only fully realised when commercial entities (be that with industry or the Authority) internalise the possibilities into their cultures.

The most apparent benefit commercially for the Authority is the ability to break the strangle-hold vendors have had over the deployed 'stove-pipe' solutions. Although always commercially possible to move away from original equipment suppliers, the technical challenge in upgrading proprietary systems limits the available options. Seeking out independent industry partners who are willing to work at refining a suite of standards and publish into a pool of open knowledge is essential to realising the vision of an evergreen future; a future that can completely re-imagine the traditional In-Service Support (ISS) model.

It is not enough to merely drive the industrial base to convert to an open standards driven position. Many of the Authority's previous best-practises will also need to be scrutinised to ensure that the most can be made of the cyclical and incremental upgrade opportunities. This will require an agile contractual approach that prioritises a rapid procurement methodology to acquiring new Commercial Off-The-Shelf (COTS) technology as it becomes available.

### The New Normal is Here

This is not purely an exercise for the technical design authorities to advocate for the adoption, adaption or authoring of open standards. This pivot to an entirely new way of delivering capability will take strong leadership from all stakeholder groups. The embedded change of culture at all levels of the Authority triumvirate, from commercial, technical and users, will need to be matched by a re-structuring of the industrial base to take advantage of these new opportunities.

When future systems are built upon architectures that are underpinned by open standards, upgrades and enhancements can be smaller in scope and scale. This means they are serviceable by a wider industrial community, some of whom would otherwise have been unable to respond to large megalithic contracts. This energising of a broader ecosystem of SME suppliers will bring a greater number of niche technology experts closer to the problem space, ultimately resulting in capabilities that can better keep pace with changes in the external technology environment.

This is happening now. The Authority are learning what it means to let these new contracts; industry are learning what it means to be system integrators with diverse ecosystems of conscious and unconscious suppliers; and the whole domain is becoming more collaborative. As the standards drive the solutions, and the solutions influence the standards; the delivery, business and technical architectures of future CEMA systems are opening.

[www.ppmsystems.com](http://www.ppmsystems.com)

**ppm**  
SYSTEMS





Smart Battery Charger (SBC) is the premier manufacturer of high output charging systems. In our advanced production facility located in California, USA, SBC designs and produces the most advanced alternators and multiple alternator kits for a variety of vehicles.

As demand increases, SBC continues to expand its production volume and capabilities. Our production, engineering, and logistics teams have tripled over the past 4 years. Combined with new machining capabilities, our product line continues to advance and expand.



SBC in-house engineering and design team is dedicated to offering new and innovative solutions for even the most demanding situations. This includes high output alternators that integrate seamlessly with the new OEM systems as well as multiple alternator kits that can combine 12- and 24-volt charging circuits. You can find SBC products in the harshest environments and most demanding industries around the globe. This includes: military; police; rescue; armored vehicles; telecommunications; mining; and marine applications.

SBC supplies the most demanding customers with the most stringent regulations. Our alternators and charging systems are approved and used by: the United Nations; armed forces and militaries; government agencies; security contractors; and OEM car manufacturers worldwide.

Our partnerships with vehicle manufacturers and automotive diagnostic companies allow us to provide advanced solutions that cannot be duplicated. This includes OEM level tuning that will maximize charging output and vehicle engine performance while retaining all factory functionality and safety features. SBC has three branches in the Middle East that install and support all of our products. They can assist with prototype vehicles as well as service and maintenance.

Our products are built to the highest standards and using the most advanced manufacturing techniques and materials. This commitment to excellence is why SBC proudly offers an industry leading 2-year warranty on all of our products.

**TESTED  
TRIED AND  
PROVEN**





# TOYOTA LAND CRUISER 300 UPGRADES

AVAILABLE FOR V35A-FTV (GASOLINE) & F33A-FTV (DIESEL) ENGINES

## 320 AMP OEM UPGRADES

The SBC SPXi series of high output alternators for the new LC300 have been specifically engineered to seamlessly integrate with the advanced vehicle electronics found on both the V35A-FTV gasoline and F33A-FTV diesel engines. They produce the highest output at both idle and while driving, providing significantly more current at all engine RPM.

Designed specifically for military and off-road applications, these SBC upgrades are capable of performing continuously in the harshest environments.



## DUAL & TRIPLE ALTERNATOR KITS

SBC has designed extreme duty high-output charging systems for the new gasoline and diesel LC300. These kits are specifically engineered with the military in mind to ensure superior performance and reliability.

All SBC alternators and kits are manufactured in the US using components and materials from the US and Japan.

These multi-alternator kits feature SBC 24V alternators that add up to 400 Amps @ 24 Volts in addition to the vehicle's 12V system. The OEM 12 Volt system can be left as is or be upgraded to an SBC high output unit.

- Secondary Voltage: 24 Volts
- Secondary Idle Output: 83 to 200 Amps
- Secondary Max Output: 150 to 400 Amps



# GENERAL MOTORS 5.3 & 6.2L ECOTEC3 UPGRADES

AVAILABLE FOR GM & CHEVY TRUCKS & SUVs

2014 to Present Chevrolet Silverado / GMC Sierra | 2015 to Present Chevrolet Tahoe / GMC Yukon  
2015 to Present Chevrolet Suburban / GMC Yukon XL | 2015 to Present Cadillac Escalade / Escalade ESV

## TRIPLE ALTERNATOR KITS

SBC has designed extreme duty high-output charging systems for both versions of the 5.3 and 6.2L EcoTec3 engine found in GMC and Chevy trucks and SUVs. They are specifically engineered for military and other high demand applications. All SBC alternators and kits are manufactured in the US using components and materials from the US and Japan.

These multi-alternator kits are centered around a TWIN alternator that adds up to 400 Amps @ 24V in addition to the vehicle's 12V system. The OEM 12V system can be left as is or be upgraded to an SBC high output unit.



- Secondary Voltage: 24 Volts
- Secondary Idle Output: 166 to 200 Amps
- Secondary Max Output: 300 to 400 Amps

## 270 & 390 AMP OEM UPGRADES

SBC high-output OEM upgrades for the GM & Chevy trucks and SUVs provide increased current at all engine speed while also maintaining more stable voltage.

They are designed to be direct bolt on with no modifications to the vehicle and connect directly to the OEM wiring harness.

*Available models:*

SBC-GM2-270XP:  
270A max & 200A @ idle

SBC-GM2-390XP:  
390A max & 220A @ idle





# AJ+S

## Advanced Jamming + Spoofing System

### Navigation is everywhere!

**S**pace, or more precisely space technologies, have become a strategic field of operations, in times of peace and crisis, besides land, air, sea, and cyber. The development of new as well as the modernization of existing Global Navigation Satellite Systems (GNSS), which started in recent years, illustrates this fact.

Space technologies, -data, and -services have become an essential part of the daily lives of European citizens, but safety-critical applications in the area of national defense and internal security also depend on these technologies. However, the greater the dependence on Positioning, Navigation, and Timing (PNT), the greater the risk of unintentional and intentional disruptions and

interference (jamming + spoofing). While jamming deliberately blocks the signal reception of GNSS receivers, spoofing aims to manipulate the position and time information of the attacked receiver. This is of course enormously dangerous because the user thinks to be somewhere else than he actually is.

### Navigation Warfare

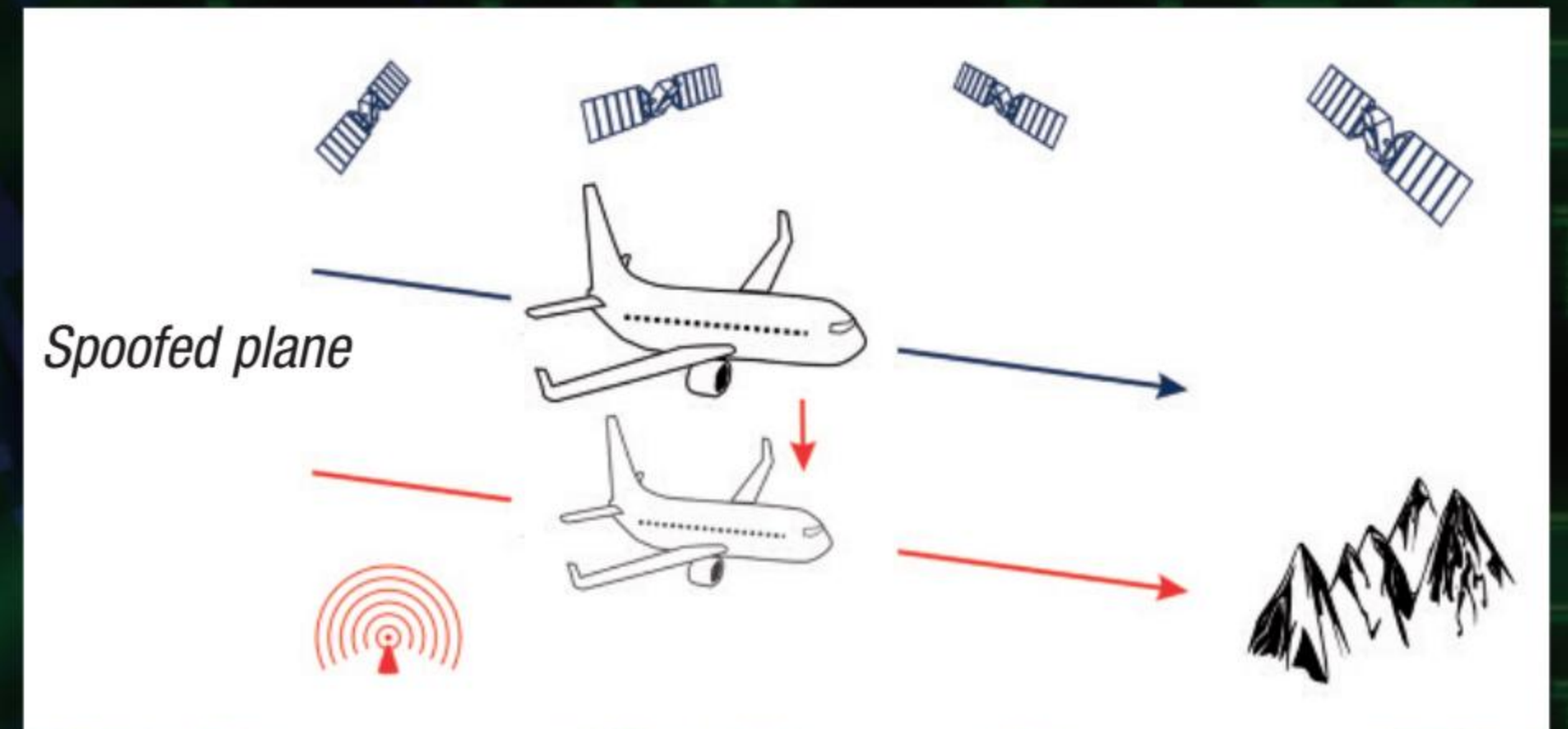
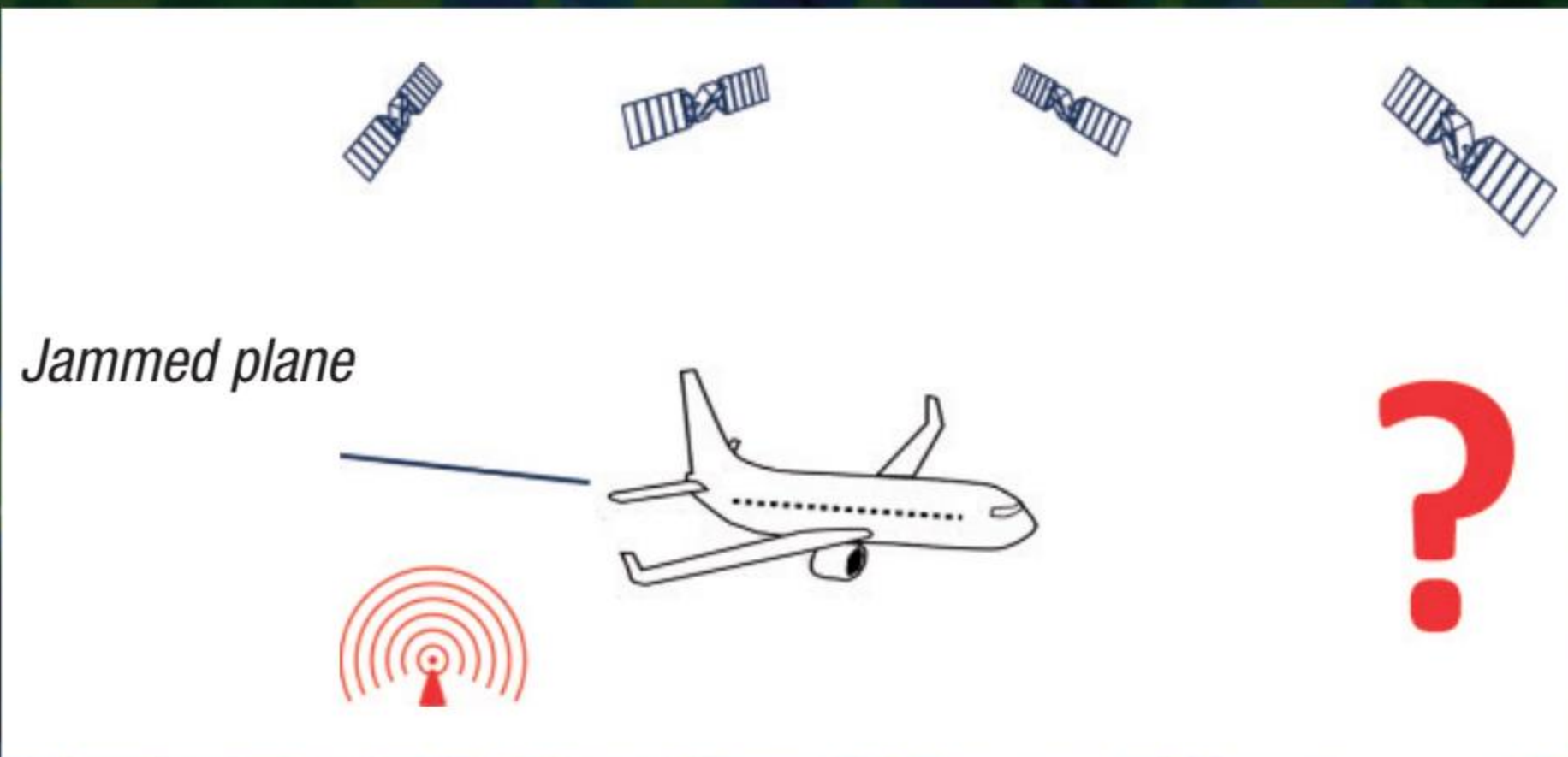
The goal of Navigation Warfare is the geographically limited disruption of (satellite-based) PNT information of an enemy while ensuring the resilience of the own systems.

However, since the use of GNSS and PNT will continue to increase in the future, it can be assumed that jamming and spoofing will also continue to increase. Navigation Warfare would therefore also affect the use of navigation systems in the public domain and for each individual.

Governmental authorities, armed forces, system integrators, and GNSS equipment manufacturers should be aware of the danger caused by GNSS signal jamming and spoofing. They should get the possibility to test their equipment in a protected and realistic environment to assess vulnerabilities and improve equipment in order to better tackle GNSS interference.







## AJ+S

OHB Digital Solutions has developed an Advanced Jamming + Spoofing (AJ+S) system that is able to assess the vulnerability of existing GNSS equipment and the performance of its countermeasures in a protected environment.

- **Mobile and sturdy system for navigation warfare scenarios in the field**
- **Easy to use system to test GNSS equipment against jamming + spoofing**
- **Covers a wide range of jamming and spoofing scenarios**
- **Supports synchronized attacks via built-in GNSS receiver**
- **Satellite data via built-in GNSS receiver or OHB's assistance service**

AJ+S is able to generate and transmit jamming and spoofing signals but be aware that its use in public space is prohibited by the authorities.

AJ+S is a mobile and sturdy 19" rack box, including:

- **A user control unit (monitor, keyboard, and intuitive graphical user interface)**
- **A performant industrial-grade PC**
- **A signal generator with dual-channel high-fidelity RF output**
- **An integrated GNSS receiver for time synchronization and ephemeris data**
- **A broadcast antenna**

## AJ+S is a compact solution to generate and broadcast jamming and spoofing signals

Get in touch with us to learn how to harden your GNSS-based infrastructure!

OHB Digital Solutions GmbH

[www.ohb-digital.at](http://www.ohb-digital.at)

[info@ohb-digital.at](mailto:info@ohb-digital.at)

**WE ARE THE NAVIGATION EXPERTS**

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**ATA 300**  
**DEF STAN 81 41**  
**STANAG 4280**

Easy to open double throw latches

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Load tested soft grip handle



Interlocking system

Holes for double padlocking

Watertight seal around lid

Full length hinges

Thick body material

Holes for shoulder strap



## UK'S LEADING

### CASING MANUFACTURER & SUPPLIER

Trifibre is the UK's leading case manufacturer and supplier with a vast array of products offered on a global scale. Established in 1981, the company has over 40 years of experience. During this time, we have developed and progressed into a highly respected and innovative casing solution provider that caters to many industry sectors, including: Aerospace, Medical, Broadcast, Scientific, Music, and more...

Based in the heart of England, our 70,000sq ft premises has the facility to produce large order volumes using a wide range of manufacturing techniques and the latest design software packages. Trifibre is able to produce the highest quality products consistently with short lead times at very competitive prices.

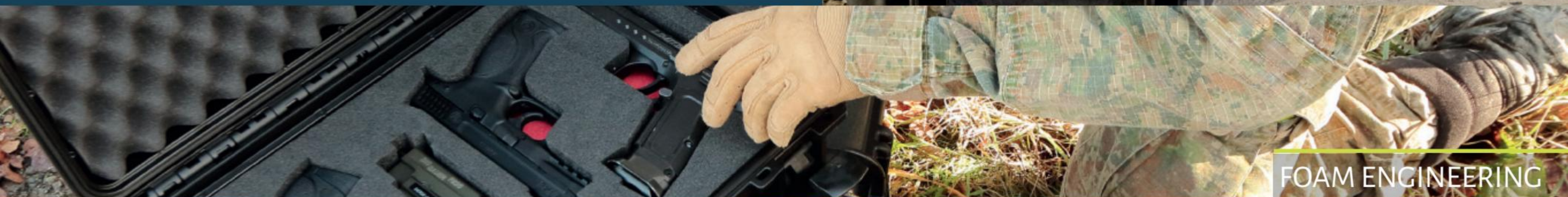
" We are proud of all the work we do, be it large corporate supply, or a simple box for personal storage. Our decades of experience means we're best at what we do. "



CUSTOM ROTATIONAL MOULDING SERVICES



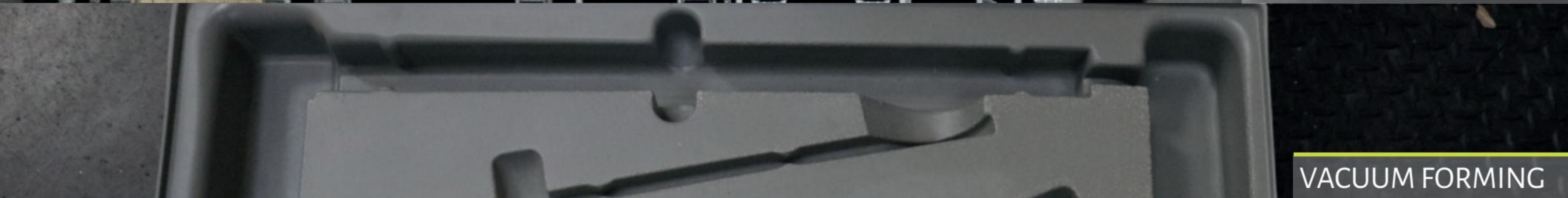
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TEXTILE ENGINEERING



# Bruker Detection

Technology to combat  
every CBRNE threat



Bruker develops, manufactures and supplies CBRNE technologies worldwide for a diverse number of clients that include most of the world's Militaries, Emergency Responder teams, Police Forces, government departments and numerous civilian clients that have industrial complexes and critical infrastructure. We mitigate the threat from toxic agents and harmful materials. This is achieved by being strongly committed to meeting our customers' needs through the design, manufacture and distribution of detection tools that are regarded as the 'Gold Standard' by threat mitigation experts.

## Broad Technology Base

Investments in intellectual horsepower, research and development; enable Bruker to offer a wide range of products with a broad technological base and high-end proven and reliable instrumentation that includes:

- *Mobile Gas Chromatography / Mass Spectrometry (MS)*
- *Ion Mobility Spectrometry (IMS)*
- *Passive FT-IR Spectrometry*
- *Radiological Detection*

## Supporting the Armed Forces Effectively- Providing the best equipment to combat a dynamic and complex threat

Conventional and homemade CBRN weapons and Toxic Industrial Hazards are an ever present and complex threat that commanders in all military circles must deal with; it is a key component of Force Protection. Personnel must be protected and adequately prepared to deal with CBRN incidents. The ability to warn and respond to an event quickly and efficiently is imperative in mitigating its impact on people and the mission.

Our equipment is widely used by military forces across the globe. They are attracted by our state of the art technology that is built to the highest standards with the operator in mind. Our kit is easy to use and train. We also understand the part logistics plays in any operation and that's why we develop equipment to require minimal maintenance and consumables keeping the logistic burden as low as possible.







Our range of equipment is comprehensive and can be used stand alone, fully integrated in to land, air or sea platforms and controlled by software that provides a simple yet complete common operating picture.

Handheld, portable, mobile, stationary and standoff equipment designed specifically for the Battlespace.

**Providing CBRNE detection solutions for emergency responders has always been a core competency of Bruker. We have been supplying class leading equipment since 1980.**

Our development goals center on innovative, robust, reliable and easy to use equipment that can be trusted in an emergency. We offer a complete CBRNE package for Emergency Response and can provide stand alone and integrated systems for mobile, point, stand off and vehicle use along with controlling and consequence management software.

CBRN software provides commanders with a common operating picture and response tools for the execution of operations.

## **Explosives Trace Detection and Narcotics Trace Detection**

Explosives and Narcotics trace detection technology is used at airports, ports, cargo facilities and at the access control points of critical infrastructure and major events as well as by the emergency services. This regulated measure is critical in maintaining a safe environment for us all.

The Bruker Roadrunner, the first of its kind, is a unique handheld device that offers both vapor-based and swab-based sampling. This enables the system to meet the requirement for detection despite the variation in vapor pressures of the respective explosive. The Bruker DE-tector Flex is a high quality portable benchtop explosives trace detection instrument designed for long term stability and analytical performance. Both instruments meet ECAC standards.

**Protect, Integrate and be**

## **Prepared to React - Critical Infrastructure & Putting People First**

The term "Critical Infrastructure" refers to the basic backbone of a functioning society's economy. Examples include facilities and services associated with power, oil, tele-communications, agriculture, water and sewerage, public health and transportation. However, to protect Critical Infrastructure fully, we need to consider the human aspect. This includes the people that work in these facilities and in many cases, the customers or users that rely on this infrastructure.

Protecting against CBRNE hazards in and around critical infrastructure can be easily achieved with strategically placed detectors and complimentary light role response equipment. A specialty for Bruker. We provide protection to some of the most important global infrastructure including government buildings and transport networks.

## **Protecting Naval Assets and the Marine Environment**

BRUKER has developed a unique capability in maritime detection systems. Designed, configured and tested to be used in the extreme and harsh maritime environment, these systems focus on the detection of nuclear (radiological) and chemical material surrounding the vessel. BRUKER maritime NC-detection solutions permit the installation of highly customized configurations to any class of naval surface vessel or submarine. For ships assigned to environmental protection tasks, a configuration can be made available that provides an enhanced analytical performance beyond a CBRN threat detection capability. A standard BRUKER IT-module manages all sensor data and interfaces this to the ship's management Systems.

**[WWW.BRUKER.COM/DETECTION](http://WWW.BRUKER.COM/DETECTION)**







CBRNE DETECTORS

# LEADING AUTHORITY

## on the Use of stand-off Detection and Identification

We offer the world's most comprehensive range of remote detection and identification solutions and can help you to assess how these can be best employed to protect people, property and the mission.

We have been providing equipment and services to a global customer base for over thirty years and continually strive to provide Gold Standard solutions with high levels of customer service support and training.



### **RAPIDplus MOD3**

Most widely used stand-off CWA/TIC Detector



### **HI 90**

Hyperspectral Imaging System



### **RAPIDplus MOD4**

The only purpose built Maritime stand-off CWA/TIC Detection



### **SIGIS 2**

Scanning Imaging Remote Sensing System



For more information please visit [www.bruker.com/cbrne](http://www.bruker.com/cbrne)

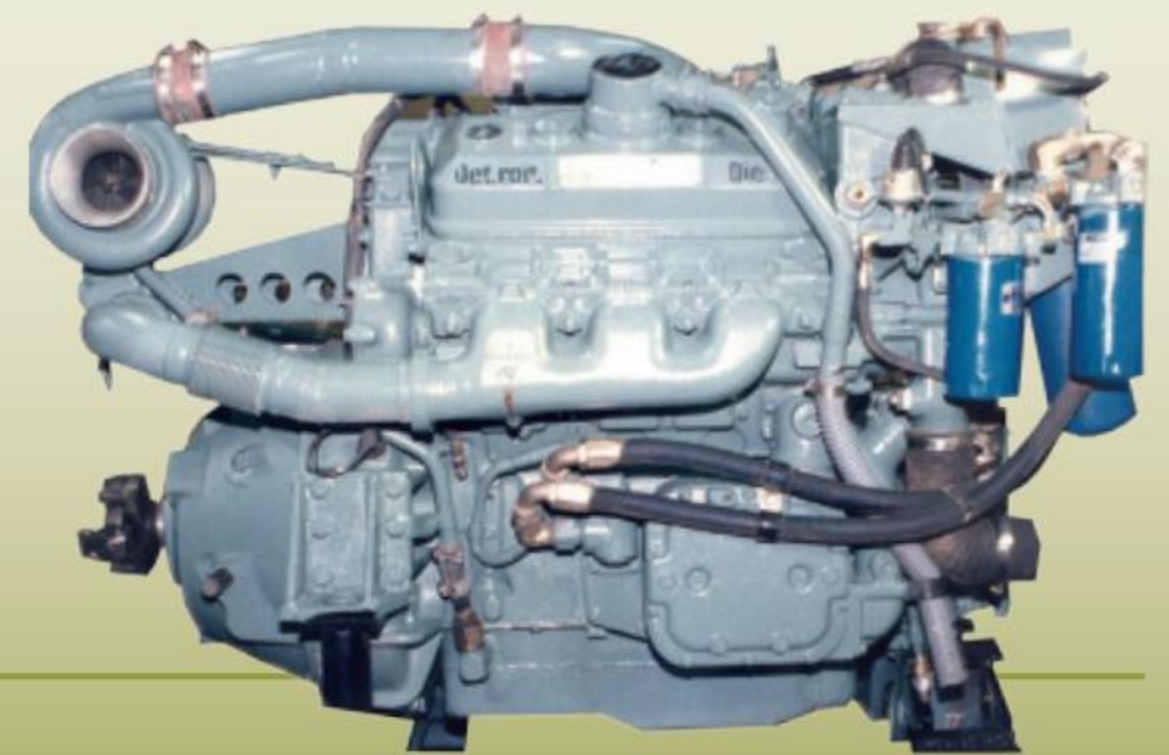


# NIMDA



# LEADS TO THE FUTURE

With more than 40 years of Engineering and Manufacturing experience, Nimda co. has the know-how and the ability to upgrade and modernize your ground forces platforms fleet with new powertrain systems



**M-60 | T-72 | M-113 | BTR-50-80 | M-41 | PT-76 | BMP-1-3**

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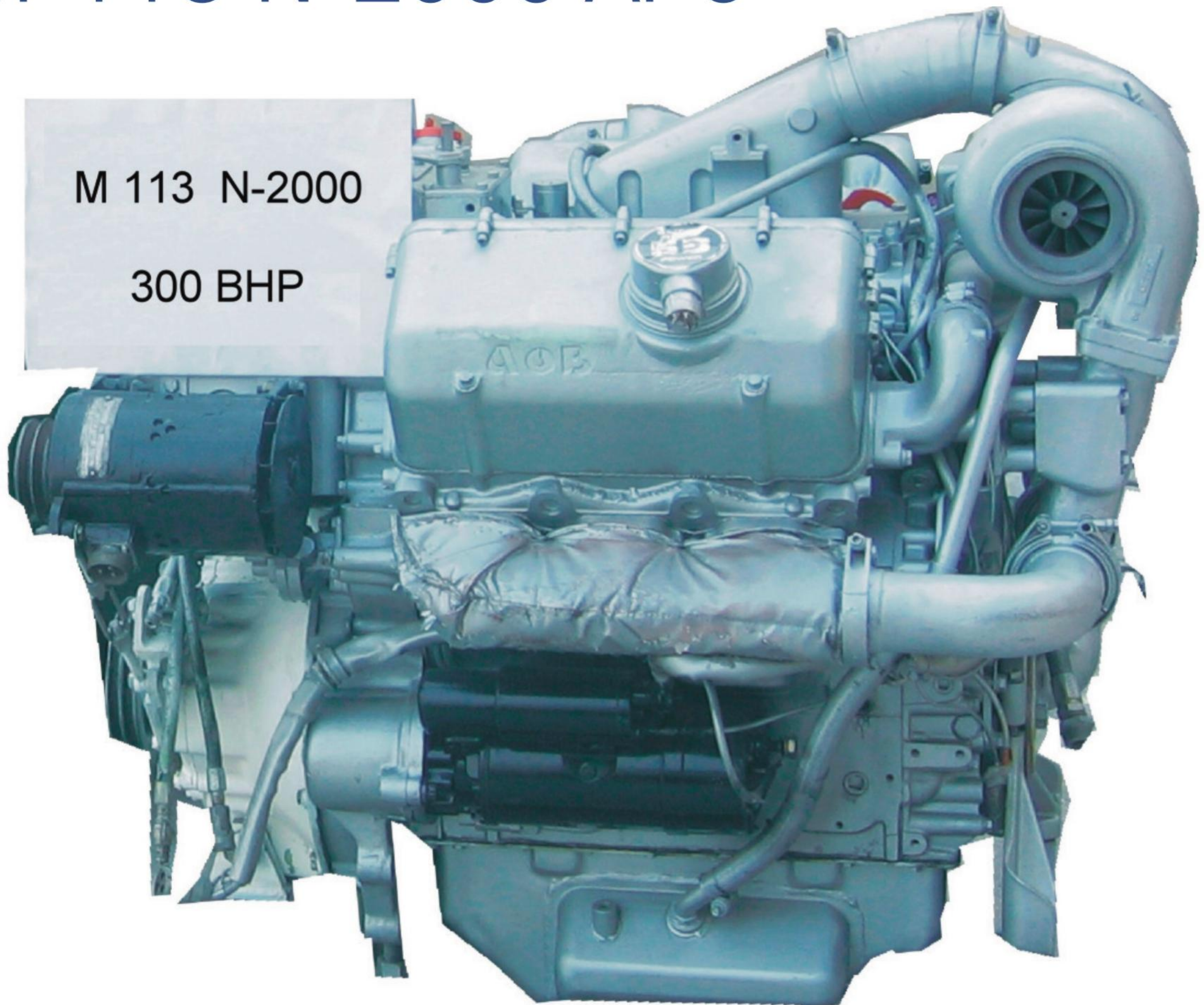
To list your company or find out more about  
our wide range of services, please visit:

**>> www.militarysystems-tech.com**



# NIMDA DIESEL GROUP.

## M-113 N-2000 APC



**N**imda is proud to present the M-113 N-2000 – an upgrade project of both the M-113 A1 or M-113 A2 Armored Personnel Carriers (APCs), and many of its systems.

The new M-113 N-2000 has a new Powerpack which integrates the Detroit Diesel 6V53T 300HP Engine and the Allison 3000 series automatic transmission. The Allison transmission is fully electronic, automatic and has multiple commercial uses worldwide.

In addition to the new Powerpack, many other systems were improved, among which are: the engine braking system, cooling system, drive shafts, final drives, suspension system, shock absorbers, torsion bars and driver's controls. All these improvements enable the M-113 N-2000 platform to carry extra weight for add-on armor. In this upgrade Nimda also offers RAFAEL's add-on armor applications and a Remote Controlled Weapon Station (RCWS) available.



# Nimda Co Ltd, – Company Profile

With over four decades of success in the upgrade and modernization of military and commercial vehicles, Nimda is well known world-wide as a provider of Powerpacks and advances automotive applications, the assembly and installation of power-trains (propulsion) systems as well as various platforms modernization of advanced weapon systems for anti-tank and air defense uses.

Acting as a main supplier for its main customer - the Israel Defense Force (IDF) Nimda has been providing products and solutions for a variety of applications and has applied its knowhow to enhance its contribution to its customers with newly development technologies.

While based in Israel with branches in the U.S and in Europe, Nimda Co. is an expert in turn-key projects for

tanks and APCs (wheeled or tracked types), MBTs, amphibious armored vehicles and its portfolio including vehicles of U.S. British, French and Russian original. Nimda also shares knowhow with its customers, through the construction of local infrastructure including logistic centers, military work-shops and vehicles production plants.

Some of Nimdas projects are: T-72, Achzarit, M-109, M-113, M-41, T-55, M-60, PT-76, BTR-50, BMP-II.

Nimda as recently nominated as a distributor of C.E. Niehoff & Co. Alternators in Israel for military / Heavy duty applications. Nimda also provides the costumer needs of design, supply, integration and support.



## For more information and enquires:

Nimda Co. Ltd.  
Lev Pesach Street, North Industrial Zone P.O.B 768 Lod,  
Israel 7110604

Tel: **+972-8-9781120** Fax: **+972-8-9781137**  
Email: **info@nimda.co.il** Website: **www.nimda.co.il**



# Nimda Co. Ltd



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Flexzorb®  
Defence

# 75+ YEARS OF PROTECTION

## ACTIVATED CARBON INNOVATION

### ACTIVATED CARBON CLOTH FOR THE DEFENCE SECTOR

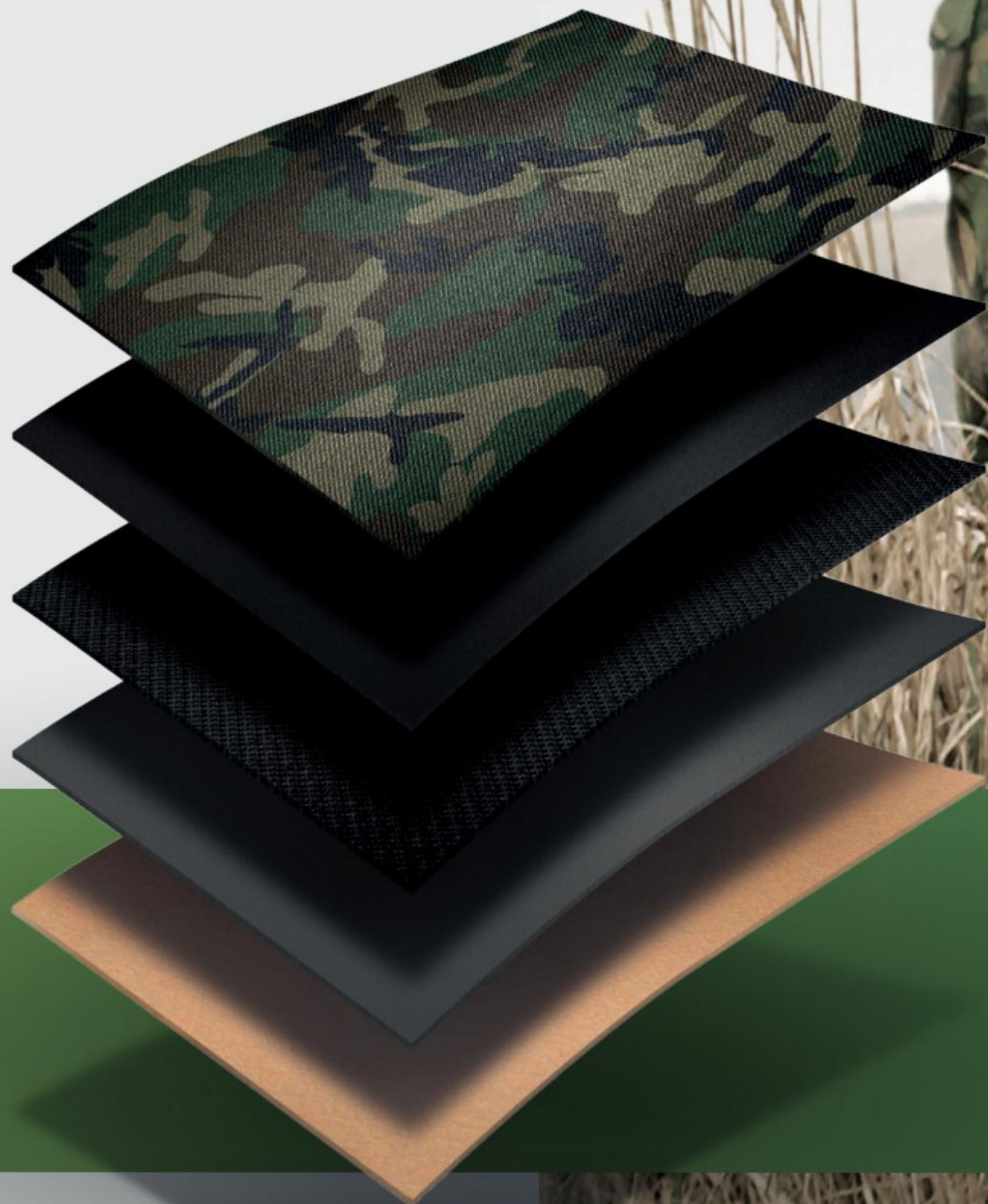
Flexzorb™ - The flexible, lightweight protective textile that is widely used by many of the world's leading defence vendors, making us the leading provider of activated carbon cloth for defence applications.

Lightweight and breathable, Flexzorb is used in a range of defence applications, including:

- CBRN Respirator filtration media
- CBRN Personal protective equipment (PPE)
- CBRN decontamination wipes
- Missile decoy media
- Phosphine gas adsorption media

### WHEN FAILURE ISN'T AN OPTION

Chemviron, the European Operation of Calgon Carbon Corporation, has a long history of protecting and defending troops with our activated carbon products, and we remain committed to providing adsorbents to combat chemical warfare agents. In an environment where there is no room for failure, why wouldn't you rely on products that have been used and trusted for over half a century?











# The BDSV e.V.

welcomes you to the German Pavilion  
at the IDEX & NAVDEX 2023!



**T**he BDSV e.V. (Federation of German Security and Defence Industries) was founded in 2009, comprises of more than 200 companies of the German Security and Defence Industry and consisting of globally operating companies as well as highly innovative SMEs. All are privately held and profit-oriented.

The BDSV e.V. represents the interests of the entire German Security and Defence Industry at both the national and international level. Taking an active part in the NIAG (NATO Industrial Advisory Group) as well as in the ASD (Aerospace and Defence Industries Association of Europe) and additionally keeping close contact with our partner organizations worldwide, the BDSV e.V. is the door for international co-operations with the German Defence and Security Industry. Additionally, it aims to increase the visibility of the competitiveness and viability of the German Security and Defence Industry.

This is evidently performed by BDSV EXHIBITIONS e.V., a subsidiary of BDSV e.V.. Both work closely together and have a common Director. "German Defence Technology" is the Trademark under which the Security and Defence Industry displays its wide range portfolio and excellence in High Technology on International Security and Defence Fairs since more than 20 years.

We see in Europe presently a shift towards the consolidation of security and defence industries as well as an increasing need for security and an urge for European autonomy where feasible. Aspects of the fore mentioned situation are, among others:

- ***R & D as the key element for our high-tech branch***
- ***Operationally ready and fully equipped Armed Forces***

Germany is leading with its potential for highly innovative products. Future systems are directed towards mobility across the entire operational spectrum. Germany concentrates on autonomous systems in the Air/Land/Sea arena. Electro mobility becomes a challenge for the future, Germany develops answers.

28 of our member companies display their highly innovative product portfolio and potential of the German Security and Defence Industry.

We are proud to be part in the IDEX & NAVDEX 2023, thus displaying

**"Quality Made in Germany"**

and providing our share to a safe and secure world.

**CONTACT**

Friedrichstrasse 60

10117 Berlin

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**INTERNATIONAL DEFENCE  
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# Field Hospitals

## when and where you need it

**F**ield hospitals are a response to the medical needs of troops deployed in remote areas.

Originally the goal was to care for ill soldiers but parallel to various developments in medicine, especially surgery, its primary mission turned into saving lives and preventing disabilities.

Field hospitals must always be mobile to ensure the medical personnel can resuscitate and operate close to the frontline. Combat and disaster zones require complete medical support for everything from simple illnesses, cuts, and scrapes to intensive care, surgery, and even isolation capacity in the event of the outbreak of a disease or virus such as Ebola or chemical and biological attacks.



They are key in the chain of medical responsibility on the battlefield or in disaster areas to support troops or disaster victims and are also temporary hospitals or mobile medical units that take care of casualties on-site before they can be safely transported to more permanent facilities.

It is mostly constructed from durable materials such as high-strength polyvinyl chloride (PVC) fabric and powder-coated steel frames. These facilities can be rapidly set up and taken down, making mobile field hospitals the most efficient, portable medical facility option available.

Today, field hospitals are used for a variety of applications, depending on the level of need for medical treatment and care. At Redeployable Camp Systems, we follow the same principles to ensure our medical facilities are manufactured from the best PVC fabrics so that we deliver a product that will last and that will stay functional for the purpose it was intended for.

With Canvas and Tent Manufacturing as our own ISO-accredited, award-winning in-house factory, specializing in containerized solutions and canvas and PVC fabric products, we can also offer hybrid solutions to ensure lives are saved on the battlefield with facilities installed and operational within hours.

Solutions are designed to withstand the harshest conditions and materials are tested against international standards at our in-house laboratory, to ensure the durability and longevity of our products and that it complies with set specifications. Within the Canvas and Tent Group of Companies, we have exported our products and solutions extensively over the years and our efforts were recognized



by winning the “Exporter of the Year” in 2015 by the Department of Trade and Industry.

With the recent Covid-19 pandemic, we were tasked with the manufacturing, delivery, and installation of a 200-bed UN Level II Field Hospital, and this was achieved within only 42 days! Bushtec Originals, the official brand for Redeployable Camp Systems SA (Pty) Ltd, managed to set this record during the height of Covid. Hospitals were in high demand as most countries strived to support their countrymen during this trying period.

We processed 66 000m of fabric and 76 000m of steel into fabric structures to construct this fully-fledged 200-bed Field Hospital, complete with 3 x 400 KVA Generators, quick erect ablution container facilities, and even negative pressure HVAC systems fitted with HEPA filters and a mortuary.

The general wards, Isolation wards, and ICU units are all PVC fabric structures and all are linked via a 119 m-long corridor.

The field hospital is fitted with a water purification plant and full reticulation, a wastewater treatment plant, and electrical reticulation throughout the camp.

After only 3 weeks of manufacturing, 84 tons of materials were flown out, 21 tons of cargo was shipped, and the complete camp was installed within 3 weeks by our seasoned installation team. From order to installation – only 6 weeks.

This is just one example, but with many successful base

camp installations for various military forces for their troops and solutions for Peacekeeping Operations, to camps at Border Posts in various countries, Redeployable Camp Systems has been privileged to play our part in the housing of troops, providing kitchens and dining facilities, ablutions facilities, offices, recreation areas, laundry facilities, operational facilities, and even barber shops.

Our services include the design of full re-deployable solutions which include infrastructure support, installation, training, training manuals, and maintenance. Our products are best showcased in installations that face challenging transportation and logistics or require high mobility and maximum performance. Our solutions are designed to be durable and to cater to the comfort of your troops when deployed in harsh environments.

Look no further than Redeployable Camp Systems for your military camp solutions.

Let us take care of your facility requirements while you take care of us – [www.rcssa.com](http://www.rcssa.com) or visit us at the South African Pavilion at IDEX – **Stand 12-B43**.

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## Manufacturers of turnkey redeployable military solutions

- ⤴ Field Hospitals
- ⤴ Forward Operating Bases
- ⤴ Medical Facilities / Wards
- ⤴ Containerised Solutions
- ⤴ Border Posts
- ⤴ Disaster Relief Tents
- ⤴ Military Turnkey Solutions
- ⤴ Redeployable Solutions
- ⤴ Base Camp Accommodation
- ⤴ Perimeter Protection
- ⤴ Infrastructure Support
- ⤴ Solutions for all environments





# COMPLETE CUSTOM SOLUTIONS

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DELIVERING CUTTING  
EDGE DESIGN AND  
DEVELOPMENT  
FOR RUGGEDIZED  
CASES AND FOAM  
PACKAGING  
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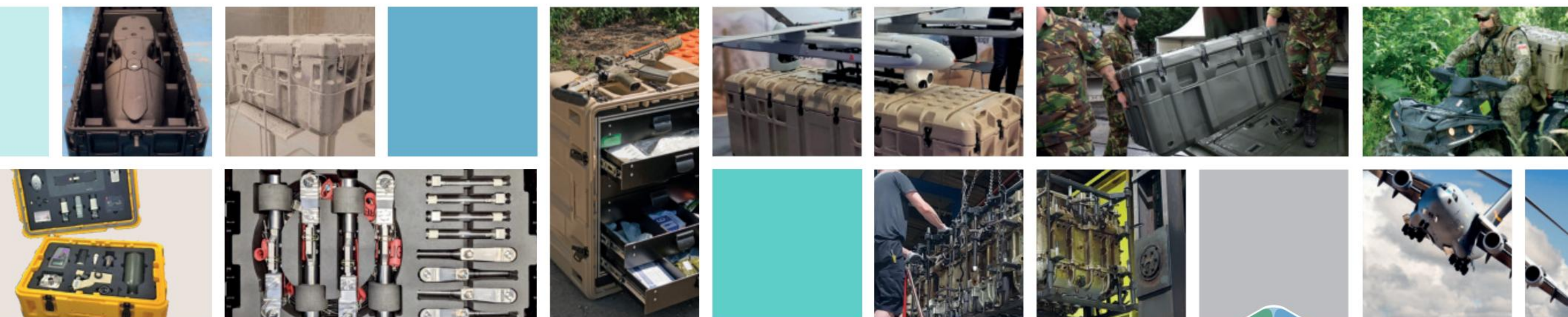
ROTATIONALLY MOULDED, TOUGH,  
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Leaffield Cases has an innovative in-house engineering design team to customise every aspect of the Aegis protective system. From vibration attenuation to shock and impact protection, waterproofing to dust exclusion.

Our vastly experienced project teams work closely with customers from concept, through design and development, to delivery and installation.



**PORTSMOUTH  
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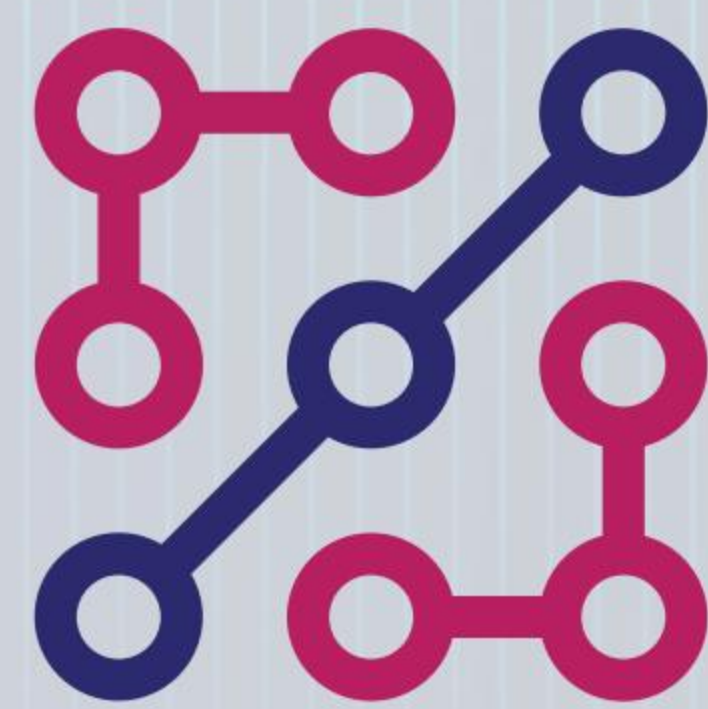
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# CONCURRENT TECHNOLOGIES



## Time Sensitive Networking (TSN) & The Warfighter



### Solutions Brief

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based solutions in the defense space, such as Situational Awareness, Software Defined Radio, and RADAR processing applications. TR L9x/6sd-RCx also supports up to 100GBASE-KR4 Ethernet capability, making it suitable for many future applications requiring high throughput communications.

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This latest Solutions Brief provides an insight into how TR L9x/6sd-RCx, a ruggedized 3U VPX Plug-In Card from Concurrent Technologies, supports Time Sensitive Networking (TSN) and enables a converged fabric deterministic system solution.

TR L9x/6sd-RCx is designed in alignment with the SOSA™ Technical Standard, for use as the system controller in high-performance sensor-

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or Brent Salgat on: **+1 (781) 933 5900**

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Solutions Brief

## Time Sensitive Networking (TSN) & The Warfighter

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## TR L9x/6sd-RCR

### Rugged 3U VPX Card with 100G Ethernet



Designed to  
align with the  
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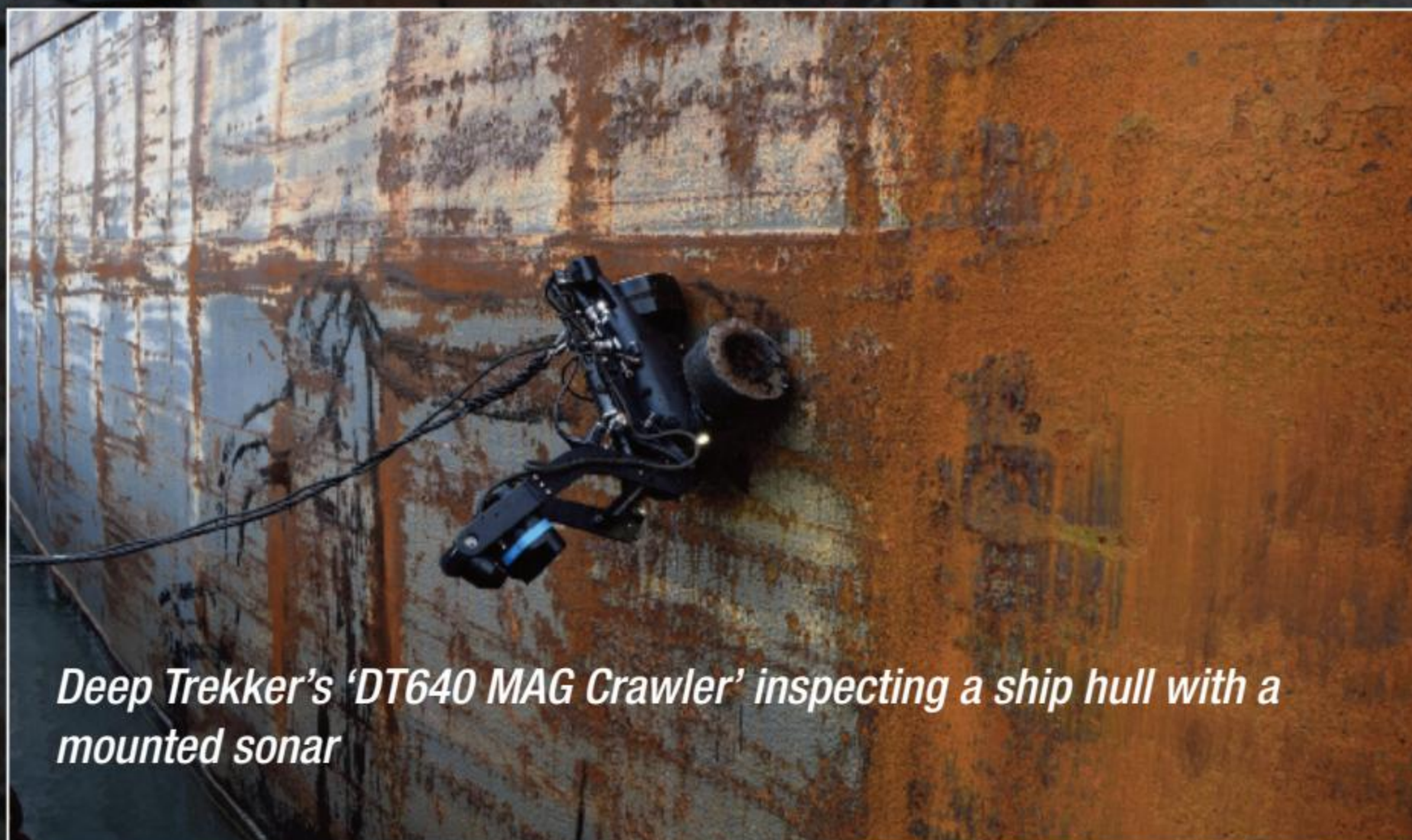
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# The Remote Advantage

## How Defense ROVs are Reshaping Underwater Missions



*Deep Trekker's 'DT640 MAG Crawler' inspecting a ship hull with a mounted sonar*

**S**ince first being introduced into the military-industrial complex, remote operated vehicles (ROVs) have significantly changed the battlefield.

The ability to quickly deploy an unmanned vehicle capable of safely navigating dangerous environments, deploying or retrieving equipment, or utilizing surveillance tools provides tremendous benefits. This has been a common practice among aerial devices for many years, however, water-borne solutions encounter different obstacles.

Underwater ROVs have existed since the 1960s, however until recent decades, these devices were extremely large, expensive, and difficult to operate. Modern observation or micro class ROVs have revolutionized this concept to provide operators with

a simple, sophisticated, and easy-to-use vehicle, similar to the advancement in compact military grade aerial drones. So what missions do these modern ROVs seek to accomplish?

### Port Security

Performing time sensitive inspections of incoming vessels for contraband is essential. Similarly to how an aerial drone can quickly survey raised structures for abnormalities in lieu of large aircraft, ROVs act as a rapid surveillance tool for underwater spaces. Within seconds, operators can have a live camera or sonar feed to perform sweeping surveys or spot checks to identify contraband.

Capable of traveling through the water at up to 3.0 knots, and holding position utilizing a DVL sensor and six thrusters powered by intelligent BRIDGE software, a Deep Trekker ROV is well equipped for the rapid navigation as well as precise movements. Around the world, teams including Canadian Customs and Border Control, US Customs and Border Control, US Coast Guard, and the Chilean Army are using underwater ROVs to perform record breaking seizures.



*Deep Trekker's 'REVOLUTION ROV' inspecting a ship hull*



An unexploded underwater missile discovered by a Deep Trekker ROV



2.75-in Rocket

## Explosive Ordnance Disposal

Drones and ROVs are advancing the way EOD units manage the identification of, extraction and detonation of ordnance/IEDs. The incorporation of ROVs as a tool for early detection, inspection and initial inspection, has radically increased both the efficiency of teams and the safety of units across all services of the military.

More than 550,000 sea mines were laid during World War II alone, which could still detonate by contact, or by sensing the magnetic change by a passing ship or submarine. Modern advancements in these devices mean they have begun to appear on vessels, bridges and underwater structures such as piers. Clearance Divers are often placed in harm's way while performing underwater reconnaissance to identify ordnance. ROVs can identify the ordnance and aid in the removal of the device without a diver being put at risk.

## Search and Recovery

Whether combined with a boat equipped with side scan sonar or used independently, ROVs have become a staple in search and recovery. Deep Trekker ROVs are portable enough to be transported and deployed from any sized vessel, and when equipped with imaging sonars, can be used to scan even the most turbid waters from 0.1m to 200m ranges. Implementing robotics dramatically reduces the need for bounce diving to investigate side scan anomalies, since the ROV can be deployed and retrieved instantaneously with no preparation required.

ROVs can also effectively be used in a similar fashion for the search and retrieval of lost equipment or discarded evidence. Depending on the scope of the retrieval, this can either be done entirely remotely via the ROV's grabber arm function, through divers after identifying with the ROV, or via a rope and carabiner using a custom ROV lift kit.

## Ship Husbandry

Traditional methods of ship hull inspections require the vessel to be completely topside for a drydock survey, or for a dive team to enter the water to perform an underwater inspection in lieu of drydocking (UWILD). The issue with these methods is that both are time consuming, costly, and can be hazardous for divers depending on water or ship conditions. ROVs offer a rapid response tool for crew members to immediately get eyes



underwater. In addition, magnetically attached utility crawlers also provide a solution to perform a general visual inspection (GVI) or conduct thickness readings on the surface side of the vessel.

Whether for battle damage assessment, biofouling inspection, GVI, or sensor cleaning, ROVs are designed to provide rugged performance even through harsh weather conditions. Intuitive add ons such as thickness probes, calipers, power washers/cavi blasters, laser scalers, and more offer ship crews a multitude of inspection and work-capable options to inspect and maintain the vessel exterior.

## Facilities Maintenance

In addition to external maintenance, ROVs are efficient tools to monitor interior facilities of naval ships. Onboard ballast tanks or potable water tanks can become damaged or degrade over time, leading to complications which may require the vessel to dock for repairs. With an onboard ROV, crews can quickly investigate concerns in these tanks without concern of contamination after a quick sanitization.

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A photo taken from a Deep Trekker ROV identifying a jammed propeller

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Camero-Tech systems are operated daily all around the world by top elite special forces, police, intelligence, and search & rescue units and assist in the detection of live objects in crime, terror, and disaster (fire, collapsed buildings) scenarios.

Camero-Tech develops, manufactures and markets 3 product lines: The short-range, Mid-range and the long-range.

The short-range line consists of Xaver™ 100 and Xaver™ 400. Those systems are targeted for near wall use or in a stand-off mode, up to 20 meters from the object. The Xaver 100 is a handled device that detects live objects, their number, and their distance from the wall.

The Xaver™ 400 is equipped with a location capability: the system notifies the user/operator of the location of the live objects in the room.





The mid-range line consists of Xaver™ 1000, the new generation of the Camero Xaver™ product line - is a real-time 3D 'Sense Through Wall' imaging equipped with an AI-based tracking of live target patterns in more than 30 meters. The Xaver™1000 is able to distinguish whether the object is an adult, a child or an animal.

The long-range line consists of the Xaver™ LR 40 and the Xaver™ LR 80 that detect live objects from significant distances – from 20 meters to more than 100 meters– there is no other system that can reach and detect lives from the aforementioned distances.

Camero also offers a Search & Rescue Kit – a professional solution for SAR teams, packed in a backpack and includes 2 Xaver™ 100 systems, 1 Xaver™ 400, XaverNet™, special accessories and enough power (batteries, power supplies) to operate the systems continuously in challenging disaster areas. Camero's headquarters, based in Netanya, Israel, includes its R&D center along with the global sales and marketing department. As an ISO 9001:2015 rated company, Camero is committed to ultimate Customer Satisfaction with the highest standards of design, development, and manufacturing.

Camero is working with world-class partners to bring its unique Through-Wall Imaging solution to customers worldwide - Please visit our website at: **www.camero-tech.com** and our YouTube channel for more technical and marketing information about our systems, applications and use-cases.



**Xaver™ LR40**



**Xaver™ 1000**



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MITIGATE**



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Skycope is a leader in effective counter drone solutions boosting a wide range of diverse deployments in every continent on the globe. Skycope develops radio frequency (RF) spectrum sensing devices, including software and hardware that search for drones and their remote-controllers, classify and identify them, and track their direction and location.

The four pillars in Skycope products are being data-driven, cutting edge signal processing technologies, continuous innovation in RF artificial-intelligence (AI), and countless real world experiments.

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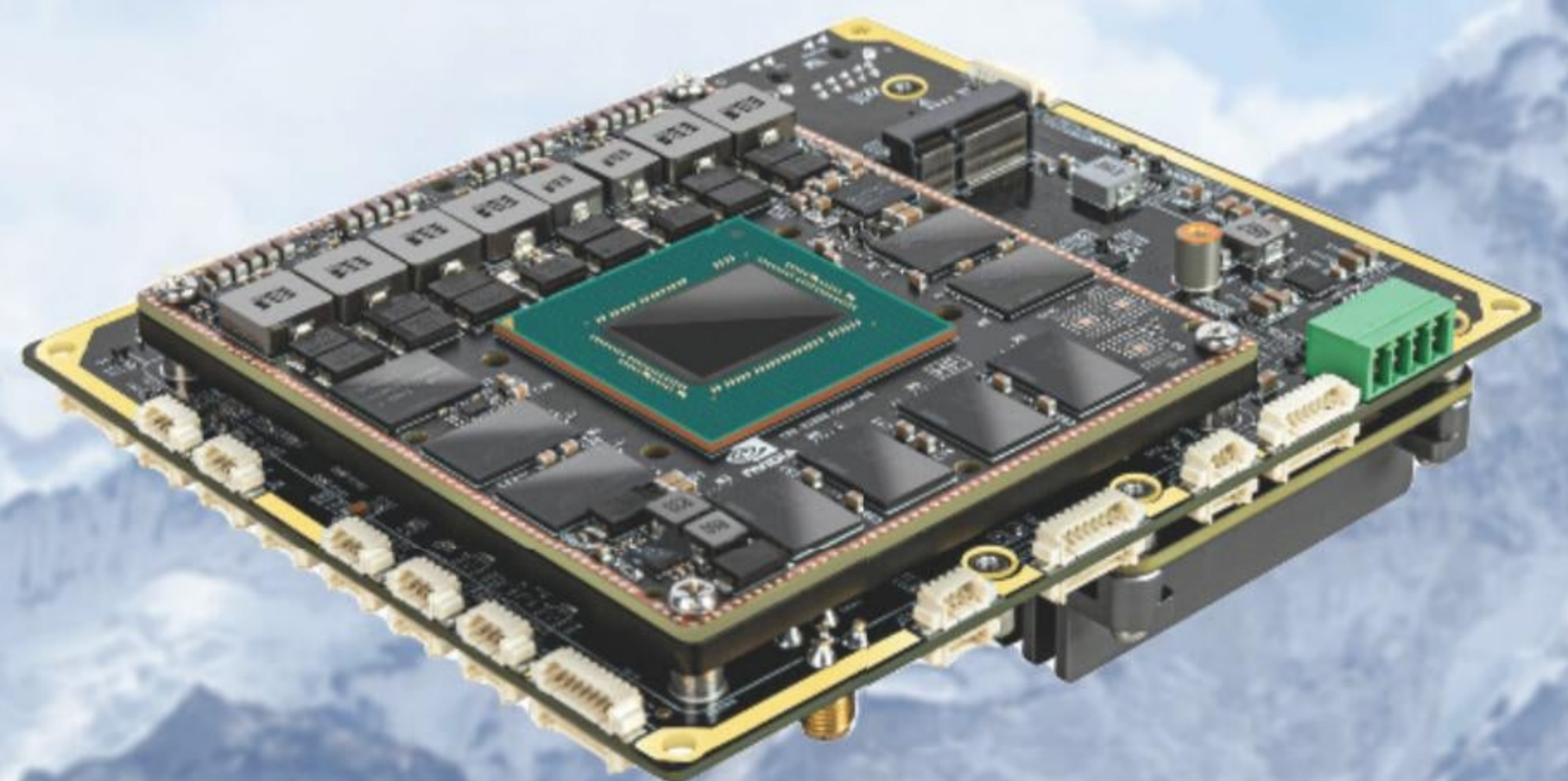


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**Ultimate Training Munitions manufactures a complete system of innovative and widely applicable training products for military, law enforcement, security personnel and civilians, enabling better preparation to accomplish their mission.**

All UTM firearm conversions cycle semi-automatic and automatic weapons at a normal rate of fire with live fire realism. Our munitions' patented dual primer technology maximises reliability and accuracy with every fired round.

Ultimate Training Munitions (UTM LTD) was founded with a mission to produce the most technologically advanced, non-lethal training ammunition in existence. By safely converting service or duty firearms and using precision engineered training ammunition, UTM products allow military and law enforcement professionals to 'train as they fight' for the most realistic, force-on-force training possible.

Though the original zinc cased rounds were a success, UTM later pioneered a brand new and improved aluminium cased round. This innovative design completely revolutionised the industry with its unprecedented consistency and reliability. The breakthrough engineering and quality of UTM quickly gained recognition after it was tested by the United States Military and achieved a 99.8% reliability rating. The result of this accomplishment was UTM being awarded a major US Department of Defence contract for their Close Combat Mission Capability Kit (CCMCK) program supplying 5.56mm loose and linked marking ammunition to the United States Army.

Since then, UTM has continued to set new quality and performance standards for non-lethal training ammunition (NLTA) and firearm conversions. UTM products, including force-on-force personal protective equipment (PPE), have been utilised globally by military, law enforcement and professional training organisations. Additionally, UTM has begun offering its cutting edge products to responsibly armed citizens seeking a safe and realistic alternative to live fire training.

With over 100,000 square feet of state-of-the-art manufacturing space Ultimate Training Munitions manufactures an array of training ammunition and over 150 firearm conversions in Mildenhall, Suffolk, United Kingdom. Coupled with its fulfilment warehouse in Brownsville, Texas, UTM is poised for unlimited growth in production and technology.

We look forward to showcasing our products at IDEX 2023 in Abu Dhabi and hope to see you there!

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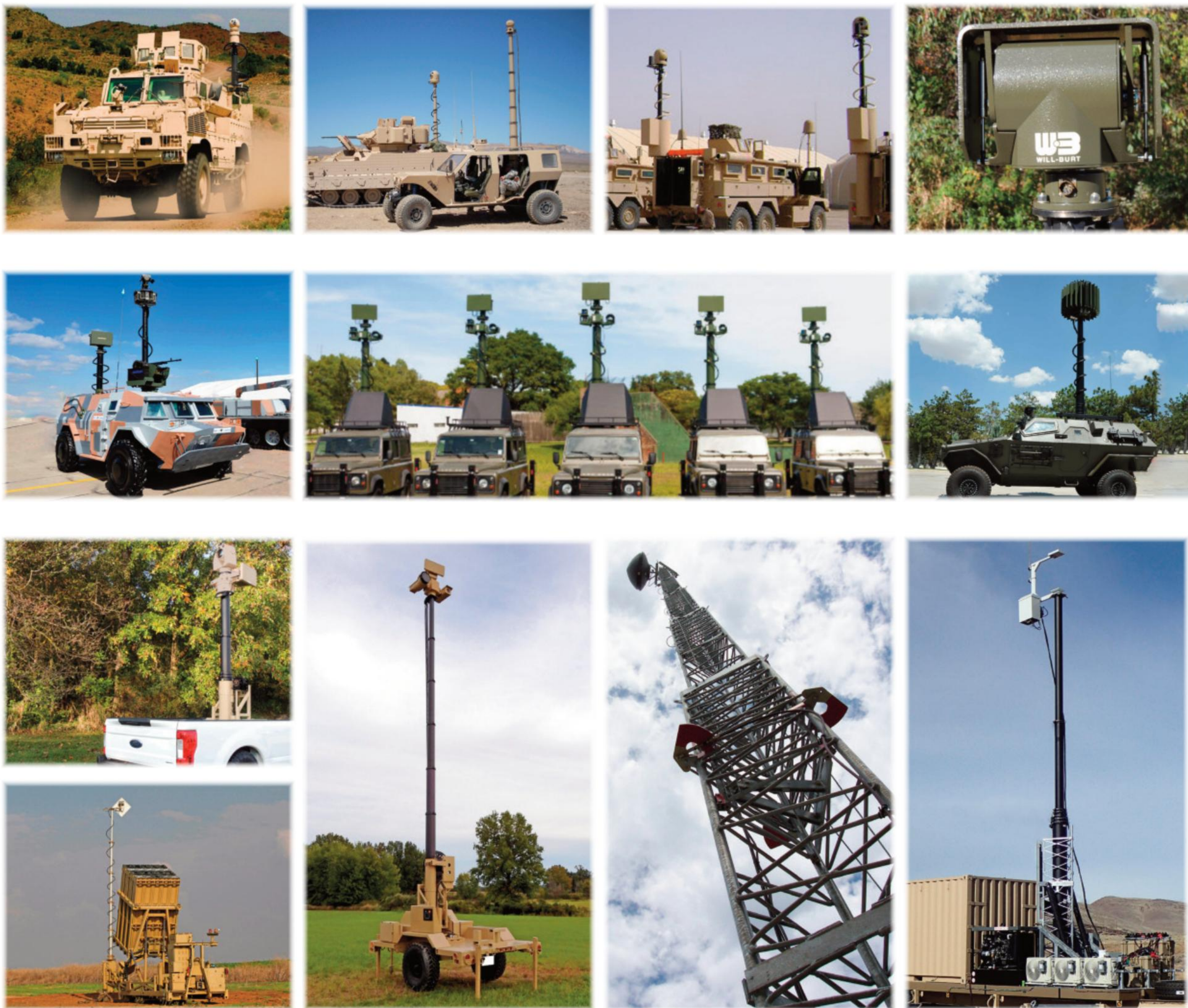
  
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# Autel Robotics at IDEX 2023:

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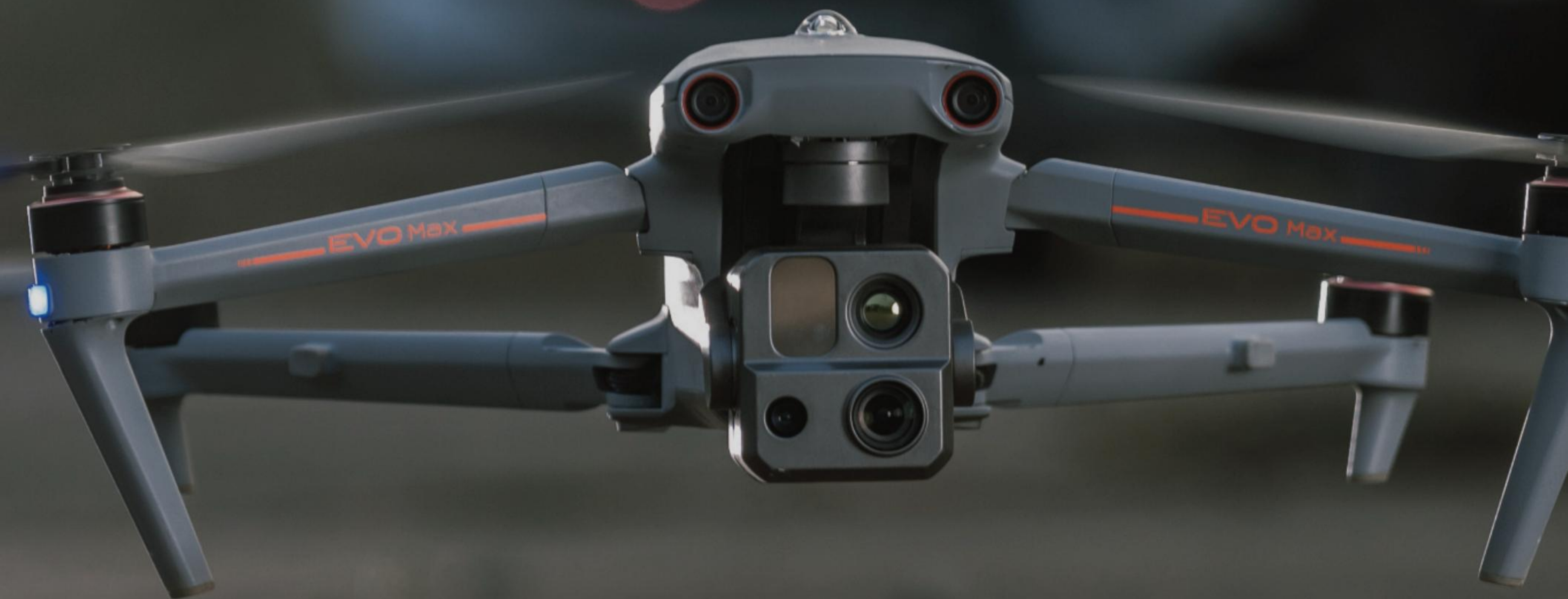
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from February 20-24.





We recently debuted our newest enterprise drone, the EVO Max 4T, receiving a lot of attention in a relatively short period of time. Following our reveal at CES, this will be the EVO Max 4T's first showcase after launching at CES. We will also bring our Autel Smart Antenna Transmission (ASAT) to IDEX to demonstrate how it can contribute to the Air Defence field.

We're excited to continue expanding our awareness in the MENA market and show off new products and new solutions for the world's most demanding, discerning markets.

## Recent Success

Our latest drone, the EVO Max 4T, will be on display at IDEX 2023.

The EVO Max 4T drone was recently unveiled at CES 2023 in Las Vegas, along with a range of new accessories. The EVO Max 4T is an intelligent, autonomous flight platform with powerful self-reliance and navigation capabilities, omnidirectional obstacle avoidance, tri-anti interference capability, and a versatile payload bay. It also includes three high-quality cameras, allowing it to excel in complex environments.

The other key notable release from us was the Dragonfish NEST and EVO NEST stations. The NEST stations are hubs that serve as highly automated stations for our drones, allowing users to conduct semi-autonomous reconnaissance, land surveys or other missions. Supported drones can take off, land, and carry out consecutive missions with little to no human intervention needed. It includes a retractable canopy, a glass-fiber charging board as well as our exclusive software to plan flight tasks remotely.

The EVO NEST is compatible with all EVO II Series aircraft and offers live video feedback, a standard application programming interface, and customization support.

## IDEX 2023 and Autel Robotics

At IDEX 2023, Autel Robotics are planning to exhibit the following products:

Enterprise Series: EVO Max 4T; Autel Smart Antenna Transmission (ASAT); Dragonfish Series (Lite and Standard); EVO II V3 Series; Live Deck 2; Autel Smart Controller V3 & SE.

Consumer series: EVO Nano+; EVO Lite+; EVO II Pro V3.

For those who wish to know more about our products, usage scenarios and more, come find us at Booth 03-A34, at the upcoming IDEX exhibition.

We hope to see you there, and wish you success in 2023.

Visit Autel Robotics at IDEX 2023:

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# Five military electronic technologies driving consumer products



Military developed its first exoskeleton-assist devices to be mounted onto dismounted soldiers to improve their weight carrying ability and speed of travel on foot.

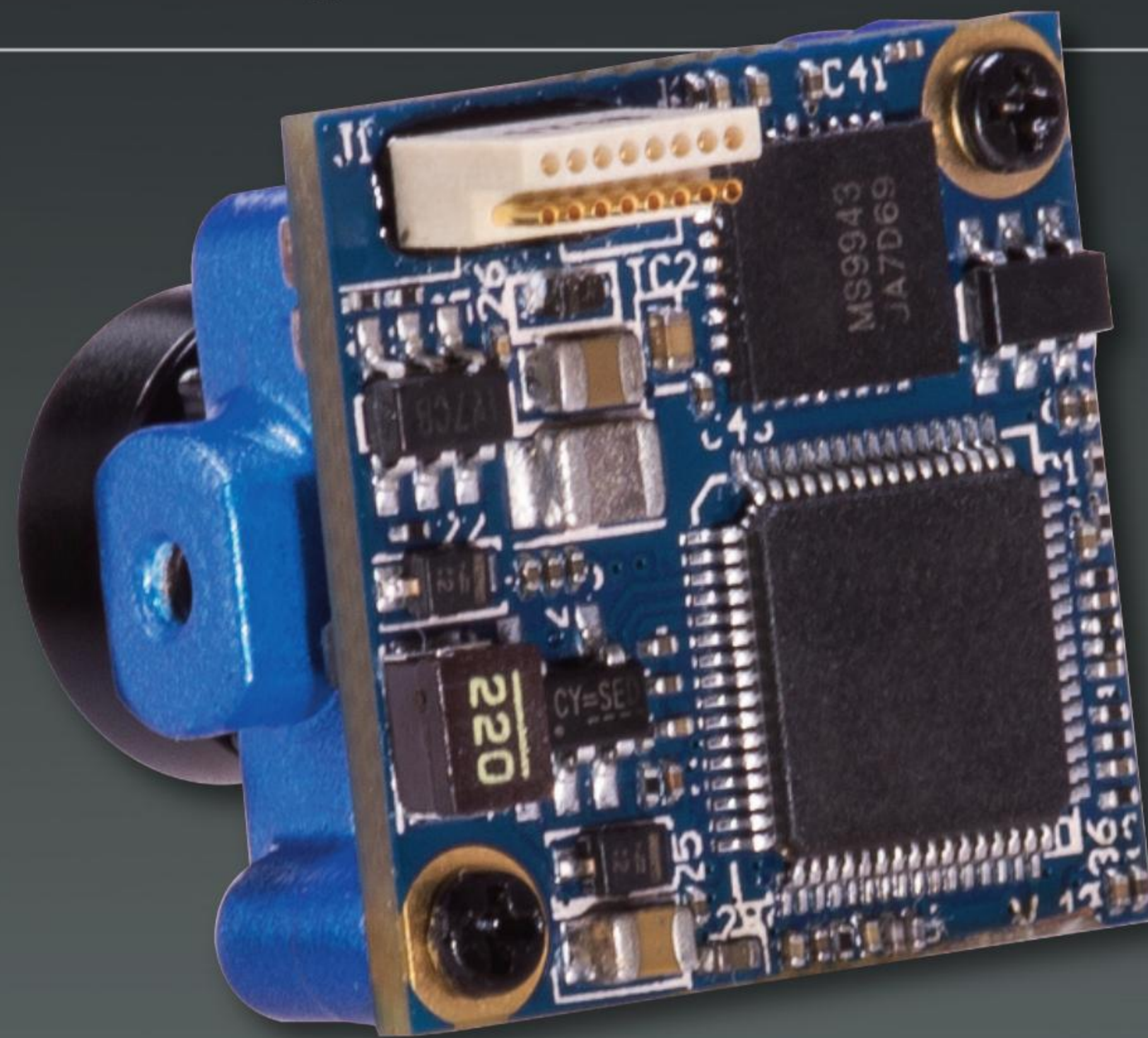
Weight was then supported by the extra structure of the hybrid leg that was part human and part machine. Electronics were often attached to detect pressure as well as to initiate hydraulic response equipment in the knee area. In time, full functioning human robots have emerged in the development process for the military. The electronics became popular in assisting amputees from military accidents and then in civilian hospitals. Biomed sensors: In our daily medical field, biosensors followed the exoskeleton technology and now offer sense of touch and pressure pads on prosthetic hands as well as can transmit data from a motion sense module mounted on an amputees head that sends Bluetooth signals down to the lower leg and foot to tell it to walk for the patient. Biosensor signal are very small that use nano-sized cable and connectors for board to board to board signals and to route low current battery power to the gears that respond in wrists, knees and feet.

FLIR and image collection: Forward looking infra-red imaging systems are designed for night operations in the military. Camera technology as well as binoculars and other surveillance

devices were exclusively military for years. Serious multi-frequency modules are often mounted on the bottom front nose of helicopters. Today we can buy and use night vision cameras, goggles and binoculars for hobbies such as hunting and or watching wildlife and making educational films. Security, police and rescue teams use night vision. Night vision head mounted movie devices are also popular. Some of the most significant advances in FLIR imaging is when it is applied in the medical industry for esophageal scopes or other camera systems used for inner-body inspection. This reduces surgery and or helps define specific position of items being operated on.

Drones and UAVs were originally developed for flying aircraft targets to help train navy gunnery systems to hit in-bound enemy aircraft. This was triggered from the surprise from the Kamikaze era in the later part of WWII. Drones were operated using old hand held analog frequency signal boxes as the Navy guns tried to shoot them down in the air overhead. The military drone got its first cameras for sending images during Vietnam where it was difficult to see from the ground. Today's drones





*Camera sensor pods under an unmanned aerial surveillance drone aircraft*

are used widely by hobby to industrial uses with cameras onboard. They are used for watching crowd control during public events, taking great photos of scenery, border control as well as building inspections.

Newest ones are well controlled and often connected to GPS signaling for position monitoring and for matching images to a map. Forestry, agriculture and even petroleum use smaller civilian drones in their business. Connectors are notably small and lightweight to allow longer flight times. Electronics must be quite rugged to sustain constant vibration of small UAVs and to survive shock of some landings.

The FAA maintained control of drones, for home based remote-controlled airplanes for kids and hobbies for years. With the shift to digital transmission being released for other civilian technologies like cell phones, small hobby drones were developed and used for radio control flights.

Software Defined Radio (SDR) was initially designed for military applications such as the Joint Tactical Radio (JTR) and has now

moved into other specialty defense programs. SDR has also become a key support technology in many other commercial and non-military areas, such as from communications with the international space station, specialty police radio scanners, and emergency services from ambulance and fire department communications to forest fire crews directing aircraft above. Recently portable radio astronomy devices are using it for satellite and planetary tracking. Finally we see international cyber communications security offices using SDR systems.

**Bob Stanton**  
*Director of Technology*  
*Omnetics Connector Corporation*

# OMNETICS

CONNECTOR CORPORATION



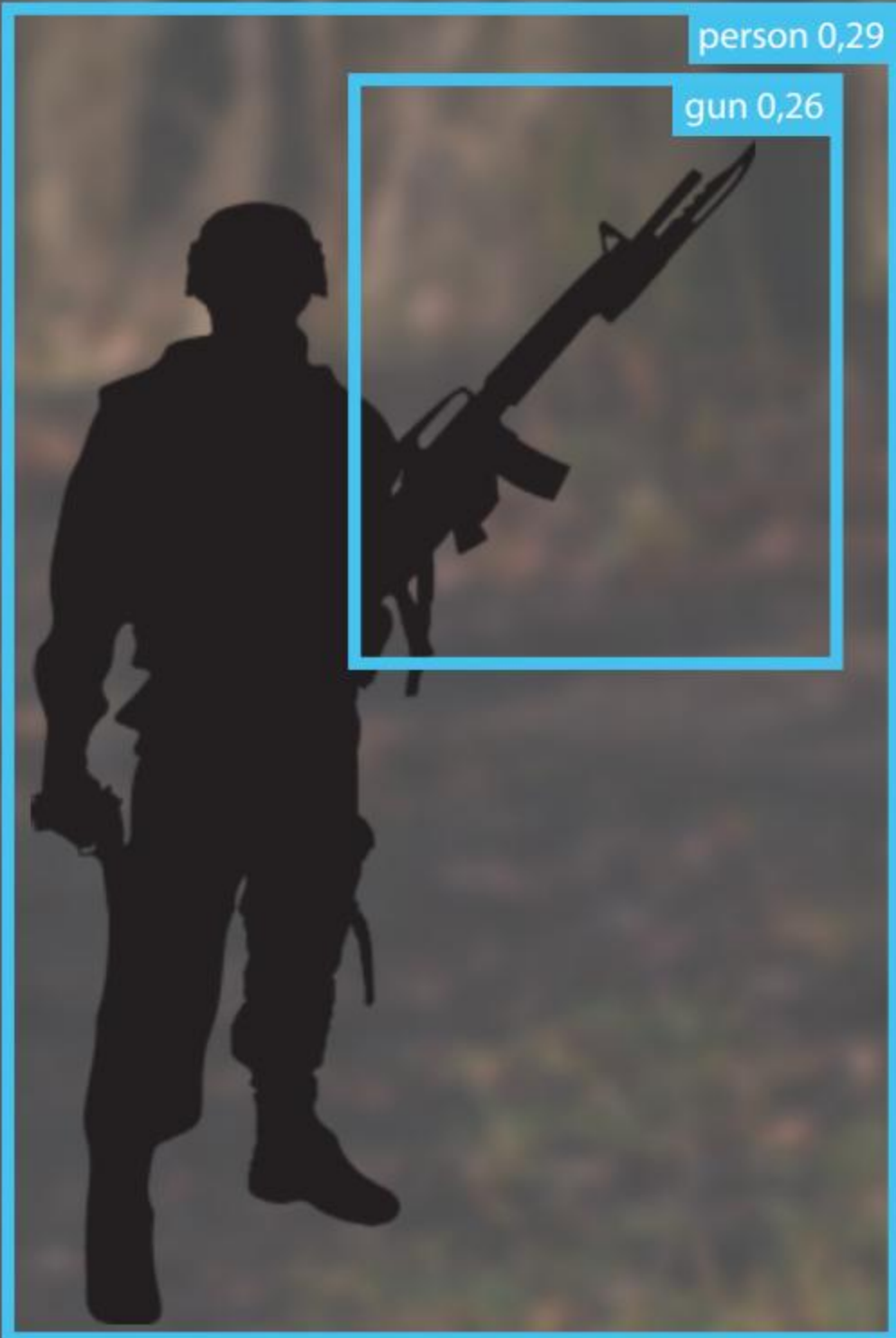
“Our company proactively responds to the problems that plague the military sector and armed forces. We are constantly trying to solve these issues with our guard and surveillance technologies simplify everyday processes and, above all, increase security and human safety.”



Peter Mraz  
CEO

# Keep the borders and military areas safe!

MRAZ X is the world’s first AI controlled guarding robot capable of identifying object in the air, on the ground and even hidden under the surface at once



## MRAZ X ARMED GUARD ROBOT



NOTHING STAYS HIDDEN



# ROBOTS THAT WORK FOR YOU.

## For a safer future!

Accomplish financially demanding tasks that are dangerous and time consuming, with a reliable technological device.

Our mission is to make your life easier with safer and more sustainable autonomous solutions. Mraz robotics and its subsidiary company Mraz defence have been making strides in the military sector, geology industry and for firefighting solutions. All our solutions involve experts from our clients' industries and have undergone rigorous testing and debugging, in order to bring you only the most reliable products.

## MRAZ X ARMED GUARD ROBOT

Mraz Robotics has created an excellent combination of diagnostic robot, ground-penetrating radar and artificial intelligence capable of utilizing neural network which brings autonomous armed guarding robot – Mraz X.

Surveillance, guarding borders, objects and possible intervention with unknown objects or people is simpler and safer with Mraz X technology. The robot autonomously monitors the predefined area and is able to recognize objects or persons intruding the area.

In the case of noticing an unknown person in the vicinity, the mobile robot sends a notification about the exact location and the recorded event to the operator, who can take over manual control of the robot and using the built-in microphone prompt the person to leave the area, while the operator is not forced to leave the surveillance center.

With Mraz X, the human factor is kept at a safe distance from risk events in the surveillance center, but is able to manually control the device, which provides the same or better informative control and guarding performances as if it were performed by a human.

## How it all started?

After the family member of the founder of the company passed away from radiation poisoning at a nuclear power plant, Mraz felt a calling to prevent future mishaps in other families. After many difficulties and many failures, Mraz robotics developed an autonomous solution - a robot that could handle routine work around the nuclear reactor without the need for direct human intervention.

Today in 2023, these solutions not only prevent similar event such as that fateful day in the nuclear power plant, but also in other high-risk situations. At Mraz companies are able to create a unique solution based on the specification and needs of customers to make increase safety standards and reduce the risk rate in the workplace!

Robot is capable of locating subsurface materials and objects. Ground and air scanning is processed with multiple sensors and cameras. This new robotic solution is capable of identifying anomalies such as underground tunnels, non-identified flying object, non-identified persons, emerging infrastructure damage, damaged cables. Notifications are transmitted across any distance and to any platform. Operation can be even watched online by several users. The robot works autonomously without the need for human intervention.

MRAZ X is a perfect solution for military sector because it operates on difficult terrains and overcomes obstacles. It is capable of scaling inclines of up to 30 degrees and operates on decline surfaces. Device is powered by an easily replaceable battery that allows operation time up to 12 hours. The robot is able to charge autonomously or battery can be replaced manually in less than one minute.

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# Georegistration

the process of accurately assigning geographic coordinates to images, videos, and other visual assets, is a crucial step in the modern world of analytics, collaboration, and targeting.

**S**atellite and airborne imagery are inherently inaccurately located, with errors often ranging from tens to hundreds of meters. This is due to a variety of factors, including the accuracy of the sensors used to capture the imagery, the quality of the navigation data used to position the sensors, and the effects of the Earth's atmosphere on the imagery. To address these errors, georegistration techniques are used to accurately assign geographic coordinates to the imagery. These techniques involve comparing the imagery to other sources of geographic data, such as maps or other images with known geographic coordinates, and applying mathematical transformations to the imagery to bring it into alignment with the other data.

For accurate analytics, including machine learning and artificial intelligence, georegistration is essential. By accurately aligning images to references, algorithms can analyze patterns and trends in the data and make more accurate predictions and decisions. For example, georegistered satellite imagery can be used to monitor crop growth and predict crop yields, or identify and pinpoint breaches of construction certificates, while georegistered traffic camera footage can be used to optimize traffic flow and reduce congestion.

Georegistration is also important for situational awareness and collaboration over visual assets. By accurately placing images and videos on a map, multiple parties can view and understand the same visual information in a shared context. This is particularly important in emergency response and military operations, where situational awareness can mean the difference between success and failure.

Accurate targeting is another critical use case for georegistration. By accurately locating target indications over visual assets, organizations can more effectively plan and execute operations, whether it be for emergency response or military purposes.

Finally, the incorporation of geographic information system



BEFORE



AFTER



(GIS) elements in visual feeds is made possible through georegistration. By overlaying GIS data on top of visual assets, organizations can gain a deeper understanding of the context in which the visual assets were captured and/or are operating. This can be particularly useful in fields such as agriculture, urban planning, and environmental management, where the spatial context of visual assets is important.

Overall, the importance of georegistration cannot be overstated. It is a crucial step in the analysis, collaboration, targeting, and visualization of visual assets, and is essential for making accurate and informed decisions in the modern world. Despite the inherent inaccuracies of satellite and

airborne imagery, georegistration techniques can achieve relatively high levels of accuracy, with errors often on the order of a few meters or less. This level of accuracy is imperative for many applications, such as those involving critical infrastructure or fine-scale analysis.

Contact us at [info@edgybees.com](mailto:info@edgybees.com)  
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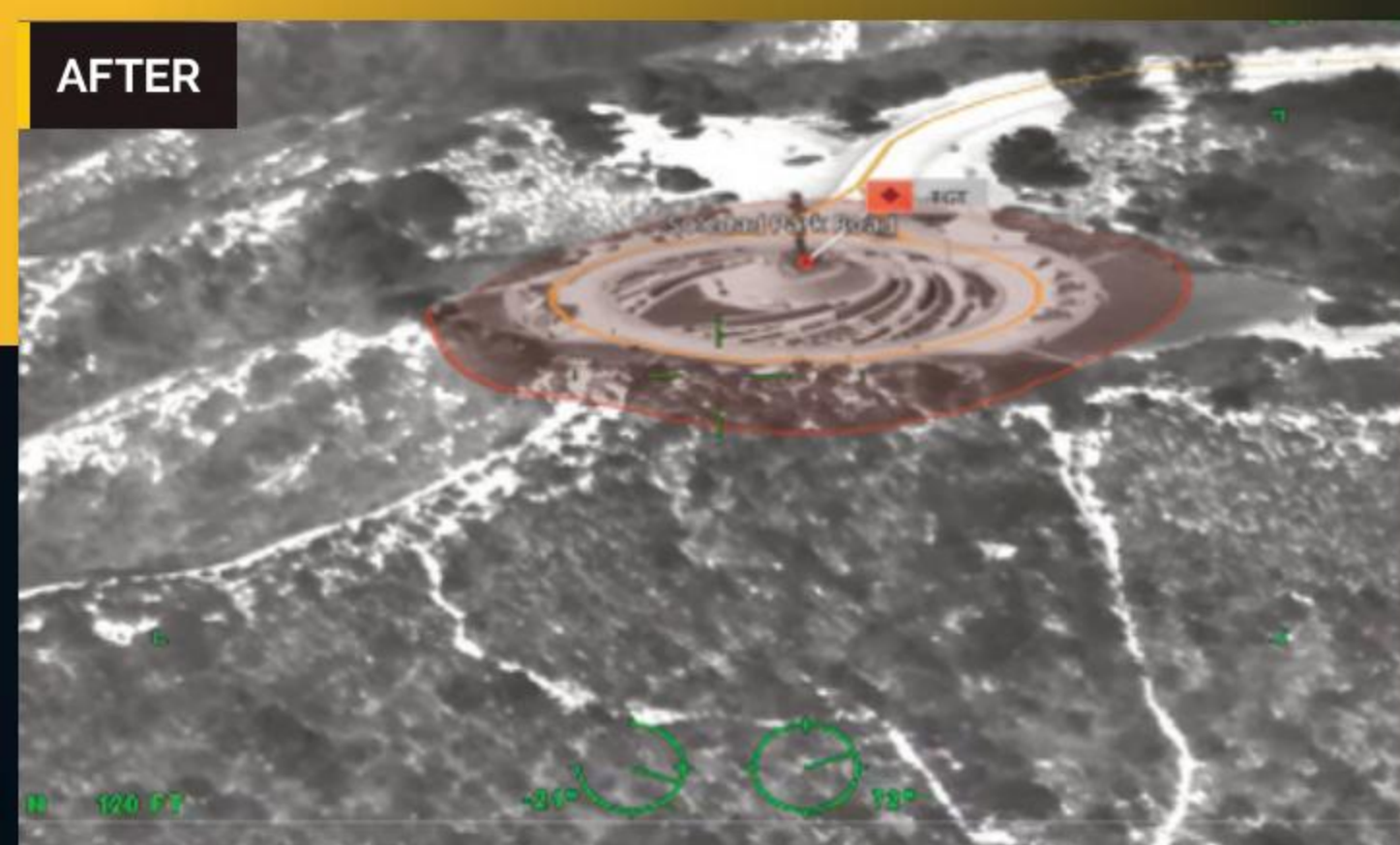
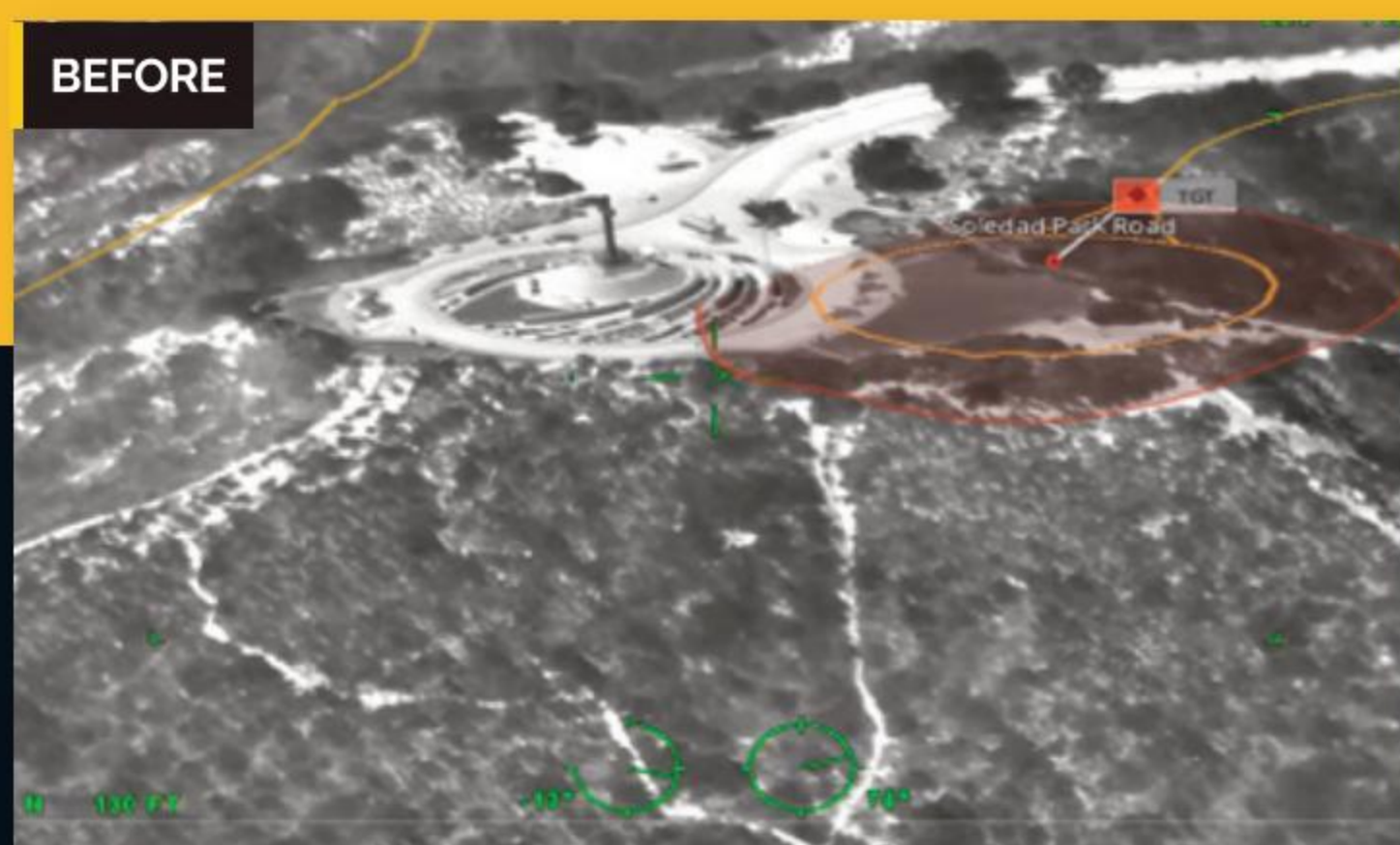
# Make the World Accurate

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Before

After

## FMV



Edgybees delivers highly accurate, EO/IR georegistration and alignment of Full Motion Video in real time. It enables rapid decision-making by visually augmenting roads, key landmarks and other mission-critical data on top of live video feeds, and enhances team collaboration, situational awareness, and mission effectiveness.

## SATELLITE IMAGERY

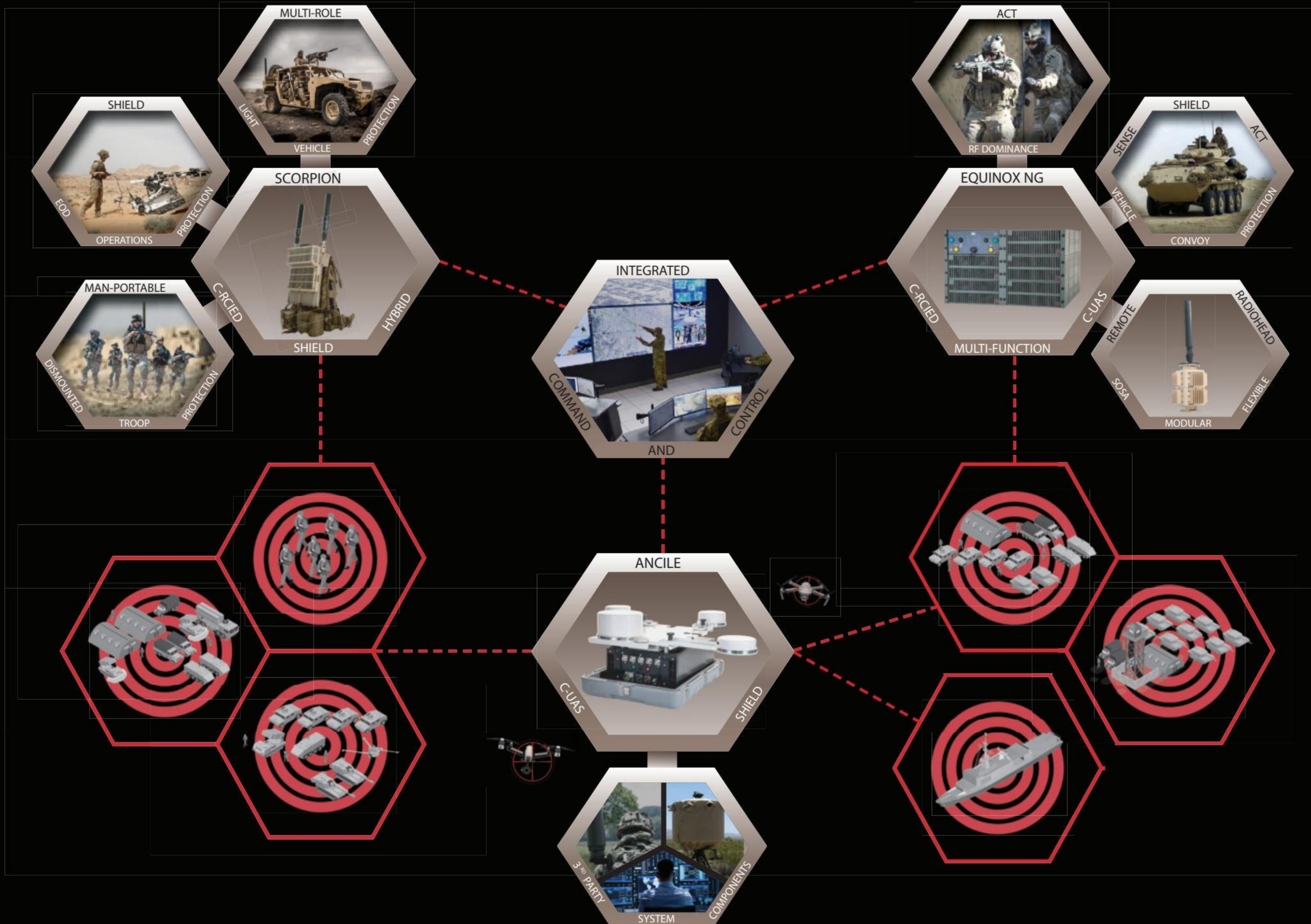


Edgybees Satellite software corrects Inaccurately positioned satellite images, significantly increasing the effectiveness and efficiency of satellite imagery consumers and analysts, and maximizing the value of AI and ML technologies that require accurately located images and source data. Edgybees Satellite imagery georegistration software enhances the accuracy of imagery to within 2.7 meters (CE90) in seconds.



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*This article is adapted from the original published in the cove (<https://cove.army.gov.au/article/enhancement-army-combat-techniques-through-non-ballistic-ranges-and-man-marking-rounds-high-accessibility-training-systems>) by Dan R. It is republished with permission of the author.*



# TRAINING ENHANCEMENT

## Through Non-Ballistic Ranges and Man Marking Rounds in High Accessibility Training Systems

### Current problem set

Existing combat shooting within infantry battalions and the Army is, by all accounts, highly effective and is based on the combat shooting techniques refined from various Special Forces training packages;

however, there are limitations currently in the training that have been identified by soldiers in regard to the ongoing maintenance of these critical martial skills (Bowles 2020).

Bowles (2020) identified that in Australian infantry battalions the skills learnt during the Enhanced Combat Shooting package were degrading and suggested that this was due to extended time (months or years) between visits to the live-fire range to train this skill, further attributable to a limited number of ranges and limited training time. Bowles (2020) identified an alternate method of training (Blocked vs Interleaved) that could reduce the loss of skills without reducing the time between range visits.

This article seeks to further expand on Bowles' discussion through the use of additional training tools and systems which could be utilised to improve not only the critical skills, but also complex urban warfare for infantry units by systems.

In Bowles' (2020) article it was identified that shooting is a perishable skill, that repetition is the key to learning and developing new skills(2) and that training consistently over longer periods of time will enhance shooting and combat skills and reduce degradation. This enhancement of shooting and combat would lead to increased lethality and martial skill levels throughout Army.

We could seek to increase our training and repetition through more accessible and realistic training systems such as nonballistic ranges and improved, accurate 'non-ballistic' man marking rounds.



## Upgraded Man Marking Rounds

Current training standards require live-fire build up shooting to undertake training and live-fire to conduct a pass/fail assessment on the tests. However, high quality man marking rounds provide an opportunity for shorter range and tactical urban engagements.

A high quality system – as those used by US Elite Units - would allow soldiers to shoot and train combat shooting within an environment that accurately replicates, but that is not, a live-fire ballistic range facility.

This would improve the accessibility to training for units as they could internally, easily and efficiently run basic to advanced shooting and urban warfare training, including opposed training. This could be done at home units in open space outside (with a designated 360-degree distance gap as a safety zone), in an empty warehouse or Q-store, or in a non-ballistic range facility (discussed further below).

## Non-Ballistic Ranges

Non-ballistic range facilities are already utilised internationally, with facilities used variously throughout the United Kingdom and in Fort Bragg, USA.

Non-ballistic ranges utilise accurate man-marking munitions to replicate live-fire warfare and complex scenarios and have been designed to 'reduce the training to operational reality gap'(5), improving a soldier's ability to deal with similar complex scenarios at a later date due to a reduced cognitive load.

By only training heavily restricted live-fire environments we are reducing combat effectiveness in operational situations, which are highly dynamic and require high cognitive loads.

Overwhelming soldiers cognitively has been shown to impair physical, mental and fine motor performance, but most importantly Head et al.(3) showed it significantly affects marksmanship decision performance. Soldiers being overwhelmed during complex combat will create poor target engagement decisions leading to decreased combat effectiveness or potentially dangerous situations for other friendly forces during training or operations.

Non-ballistic ranges (with accurate man marking rounds to replicate realistic training) allows training that is broader in scope and more realistic, without the heavy safety restrictions that are required for live fire. Safety in live firing is highly important for participants but the safety requirements create 'rangeisms', ie. range only restrictions that are unrealistic. For instance, live firing restricts where targets that are to be engaged can be placed to ensure that safety is maintained. This restriction on target placement leads to predictable targets and easily 'solved' scenarios for soldiers.

Whilst we train to win, training without complex scenarios is going to lead our soldiers to being overwhelmed when they first

find themselves in combat, in a complex scenario.

These same 'rangeism' restrictions do not exist for non-ballistic ranges and the realism and effectiveness of training can be improved when utilised with accurate man marking rounds. These systems together allow the replication of live fire at close, urban ranges whilst improving our training capability through both increased repetition and more advanced scenarios. Leading to soldiers with better martial skills in close and complex urban combat in an environment that is forgiving to participants, should errors be made, allowing soldiers to learn from mistakes in a complex environment, rather than either not conducting complex training or creating higher than required risk levels found in complex live-fire training.

## About UTM (At IDEX Stand 03-C40):

To be the best, you have to train with the best. Ultimate Training Munitions manufacturers a complete system of innovative and widely applicable training products for military, law enforcement, security personnel and civilians, enabling better preparation to accomplish their mission. All UTM firearm conversions cycle semi-automatic and automatic weapons at a normal rate of fire with live fire realism. Our munitions' patented dual primer technology maximizes reliability and accuracy with every fired round.

## About 4GD:

4GD is a veteran-owned and operated specialist in intelligent urban training environments, specifically the 4GD SmartFacility.

The 4GD SmartFacility® integrates the physical and synthetic worlds into a single urban training environment. It is an instrumented, reconfigurable, non-ballistic training facility for use by DCC (dismounted close combat) troops, which uses synthetic reality to introduce complex combined arms elements within the virtual sub-system Acies®, while keeping the "close" combat training in the physical. It achieves this by allowing actions taken in the physical world to have an effect in the virtual world, and actions in the virtual world to have an effect in the physical world.

Keeping the close combat in the physical and complex & expensive combined arms in the physical open's significant opportunities for contemporary multi-domain urban operations. For example, larger formation training units could use "lived in" conurbations for the physical clearance while practising intensive combined arms in the synthetic.

*Our systems are already in use with elite units in both the US and UK, with 4GD's flagship SmartFacility in service with the British Parachute Regiment.*

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The VXR Series is optimized for a broad range of applications from military ground vehicles to commercial and military aircraft and is intended for harsh environments including severe vibration, shock and temperature cycling, and features VPT's patented V-SHIELD® advanced packaging technology. V-SHIELD® is an integral epoxy encapsulation which incorporates EMI shielding and dual-sided thermal conduction. It is highly resistant to chemical, solvent and salt environments, and is fully compatible with high-volume manufacturing processes including wave solder, cleaning solvents, high-pressure sprays and aqueous wash. It also simplifies system thermal design with dual-sided conduction cooling, coupled with reduced power dissipation.

With V-SHIELD® packaging, the DC-DC converter combines the reduced radiated emissions advantage of the metal packaging and the water/chemical resistivity of the epoxy packaging. Merging these two options provides a design with superior performance at a reasonable cost. V-SHIELD® packaging allows the converter to be used for multiple rugged applications, from military ground vehicles to commercial and military aircraft. It can withstand harsh environments including severe vibration, shock, and temperature cycling.

The V-SHIELD® packaging technology was recognized by the judges of the Military & Aerospace Electronics Innovators Award with the highest, platinum level award in 2016. The platinum level recognizes military and aerospace electronics featuring a superb innovation, characterized by a groundbreaking approach to meeting a need, a new level of performance, efficiency and/or ease-of-use.



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The **NANUK 980** is a mid-size, long case that's versatile enough to protect not-so-long gear, lots of smaller gear, or both. Not as lengthy as our Long Cases, but twice as long as some of our Medium Cases, it's built to protect valuable equipment in tough conditions.

It's designed with deeper stacking ridges that gives it better stability for long term storage, transport, or quick access. At the same time it's just the right size and light enough for personal carry.

Like all **NANUK** waterproof protective cases, the **980** is made of crushproof NK-7 resin certified to withstand extreme impact and continuous vibration – in other words, it's indestructible. It's also equipped with 1 oversized spring loaded-carry handle as well as four (4) of our legendary Power Claw latches and will never open accidentally.





#### Interior dimensions

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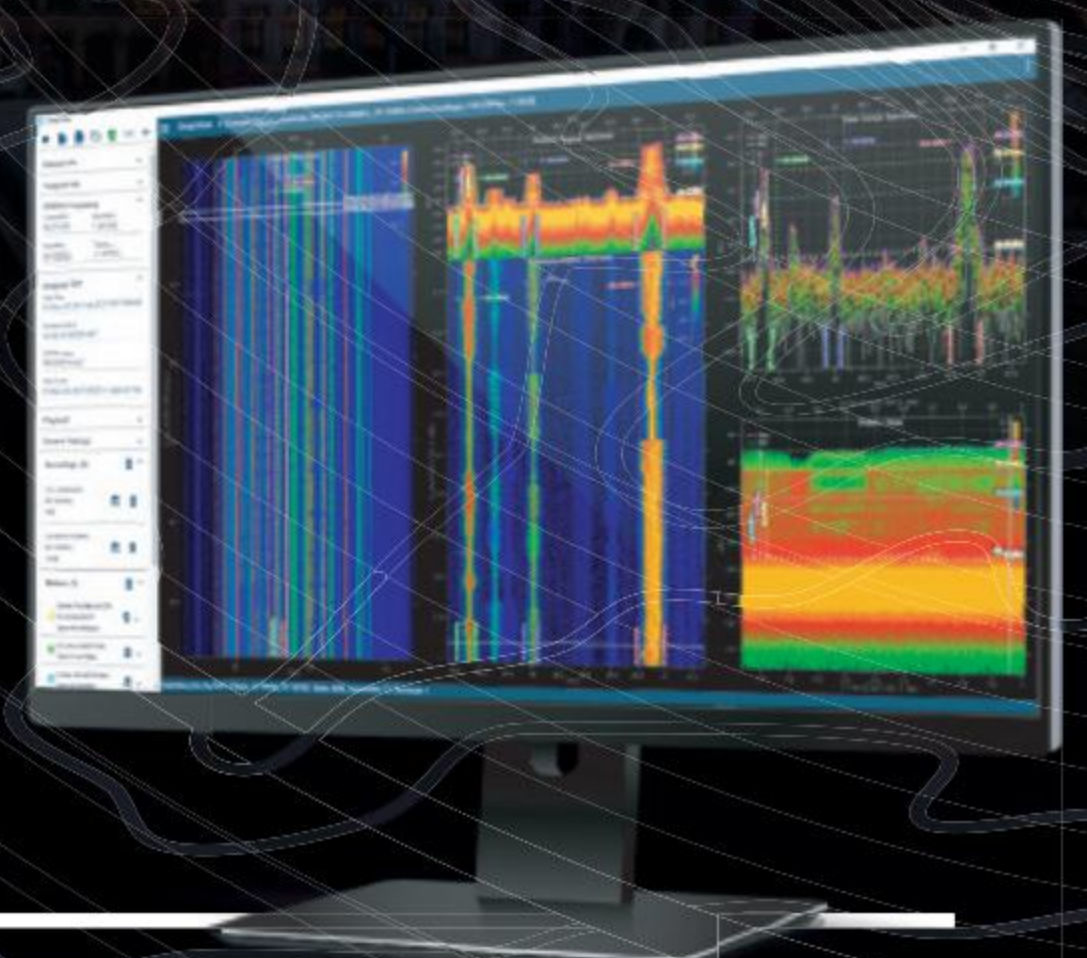
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# Latest innovations in military textiles

Carrington Textiles to showcase latest military textile innovations in the Middle East.



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**G**lobal Textile manufacturer, Carrington Textiles, is set for its first appearance at the International Defence Exhibition (IDEX) taking place in Abu Dhabi in February, where the company will be unveiling some of their latest innovations in military textiles.

After announcing their development of a fabric and pattern in collaboration with the Dutch Ministry of Defence, Carrington Textiles is showcasing a brand-new product as part of their Defence Range.

The new Spartan HT Flex Lite fabric is a lightweight textile that features military grade INVISTA T420 nylon 6.6 staple fibre to be light yet strong. It offers integrated stretch properties thanks to its LYCRA® composition, and the comfort of cotton.

The company has also revealed the launch of their new camouflage print concept called Night Stealth Camo, created for military special operations carried out in the dark. Night Stealth Camo incorporates infra-red signatures of printed camouflages when viewed under night vision

devices, but in normal daylight appears as a black dyed fabric.

Carrington Textiles' Sales Director, Paul Farrell, says: ***"We are pleased to be attending our very first IDEX in 2023 with these outstanding military propositions. Night Stealth Camo is a concept unique in the market that has already received great feedback from partners. The same for our new Spartan HT Flex Lite fabric which offers the stretch properties, comfort and durability our customers in the armed forces are currently looking for."***

Carrington Textiles will be exhibiting at IDEX from the 20th until the 24th February at **stand 04-A23**.

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# BUILDING AND MAINTAINING RESILIENCE IN THE AEROSPACE AND DEFENCE SUPPLY CHAIN: THE ROLE OF A GLOBAL ‘LOCAL’ SUPPLIER

## A union of four of the world’s leading suppliers of metals to the A&D industry allow OEMs to ‘think globally and source locally’

In the wake of the widespread supply chain disruption across the aerospace and defence (A&D) industry during the COVID-19 pandemic, compounded by further disruption arising due to Russia’s military action in Ukraine, A&D companies across the globe are ever more cognisant of supply chain resilience.

The A&D industry is global and, as such, needs a global capability from its supply chain. But, regional stakeholders also play a vital part in ensuring a resilient supply chain. A&D equipment manufacturers are increasingly sourcing suppliers that not only demonstrate a global, efficient service, but also a supplier that recognises the value of local support and reliability of supply.

### Reaching new heights in Aerospace & Defence metal supply

Multi-metal stockholders have long played an important role in the A&D manufacturing supply chain. Aero Metals Alliance (AMA) is one such stockholder. AMA is a global partnership of four world-class metal suppliers, and delivers a unique offering that brings together materials and supply chain management services that enhance the supply chain for customers, wherever they are in the world.

All four AMA businesses have established their own reputations for industry experience, knowledge and expertise to service the needs of its ‘local’ customers. Collectively, the Aero Metals Alliance structure enables a pooling of resources and technical knowledge to bring a trusted global supply chain to the A&D manufacturing industries. This unique alliance enables AMA to aggregate demand across a single supply chain on behalf of the world’s leading original equipment manufacturers (OEMs), while providing a truly responsive local service to meet the needs of individual sub-contractors anywhere in the world.

### Setting the standard since 1947

AMA has been supplying the global aerospace, defence, energy, and motorsport industries with product ranges, processing capabilities and services for over 75 years and is accredited and approved by the biggest names in the business.

The stringent rules and regulations of the A&D industries govern AMA’s code of conduct, engagement with customers and specify minimum compliance levels. Each of the AMA businesses hold long-standing individual certification, and the partnership has global consolidated certifications for EN/AS9100 and 9120 and single AS9100 certification – the aerospace, aviation and defence industry-recognised QMS standard. Single certification

underscores AMA’s commitment to meeting and exceeding the increasingly stringent industry requirements for A&D related products, while giving customers the reassurance and confidence that AMA’s operations work to the highest industry standards.

### ‘Think globally and source locally’

AMA provides an easier route through which OEMs and sub-contractors in A&D manufacturing can source their metals, their processing requirements, and services. It offers a single point of contact - effectively a one-stop-shop - to access the best capability in dedicated aerospace, aviation and defence metal supply. Wherever materials are required to operate in extreme environments AMA has a solution.

AMA operates from thirteen service centres in seven countries throughout the Americas, Europe and Asia Pacific. AMA’s businesses - Gould Alloys, Service Centres Aero (SCA), Progressive Alloy Steels Unlimited (PASU) and Sunshine Metals – is a network of strategically located service centres, each with its own processing capabilities. It collectively offers cutting, shape cutting, milling, surfacing, sawing, drilling, guillotining, waterjet cutting, USI testing, heat treating or re-tempering, forgings and machining to near net shape to national, regional and international customers.

AMA’s capabilities are back up to full demand since the pandemic, and with a vast stock range in aluminium, stainless steel, carbon and alloy steels, titanium, copper alloys and nickel alloys, AMA’s stock range is unrivalled. AMA is committed to maintaining these unrivalled stock levels, and delivering a genuinely high-quality service to customers. AMA does this by placing each and every customer at the centre of our business, regardless of the size of the account.

AMA’s regional and local capabilities not only serve to strengthen the global union but, in an increasingly volatile and unpredictable world, they also provide OEM’s with a critical defence against supply chain interruption.

If your operations are too dependent on a particular supplier, country or region, and you are considering diversifying to build and maintain your supply chain resilience, AMA has the answer. Contact your global ‘local’ supplier today.

To learn more, visit [www.aerometalsalliance.com](http://www.aerometalsalliance.com)

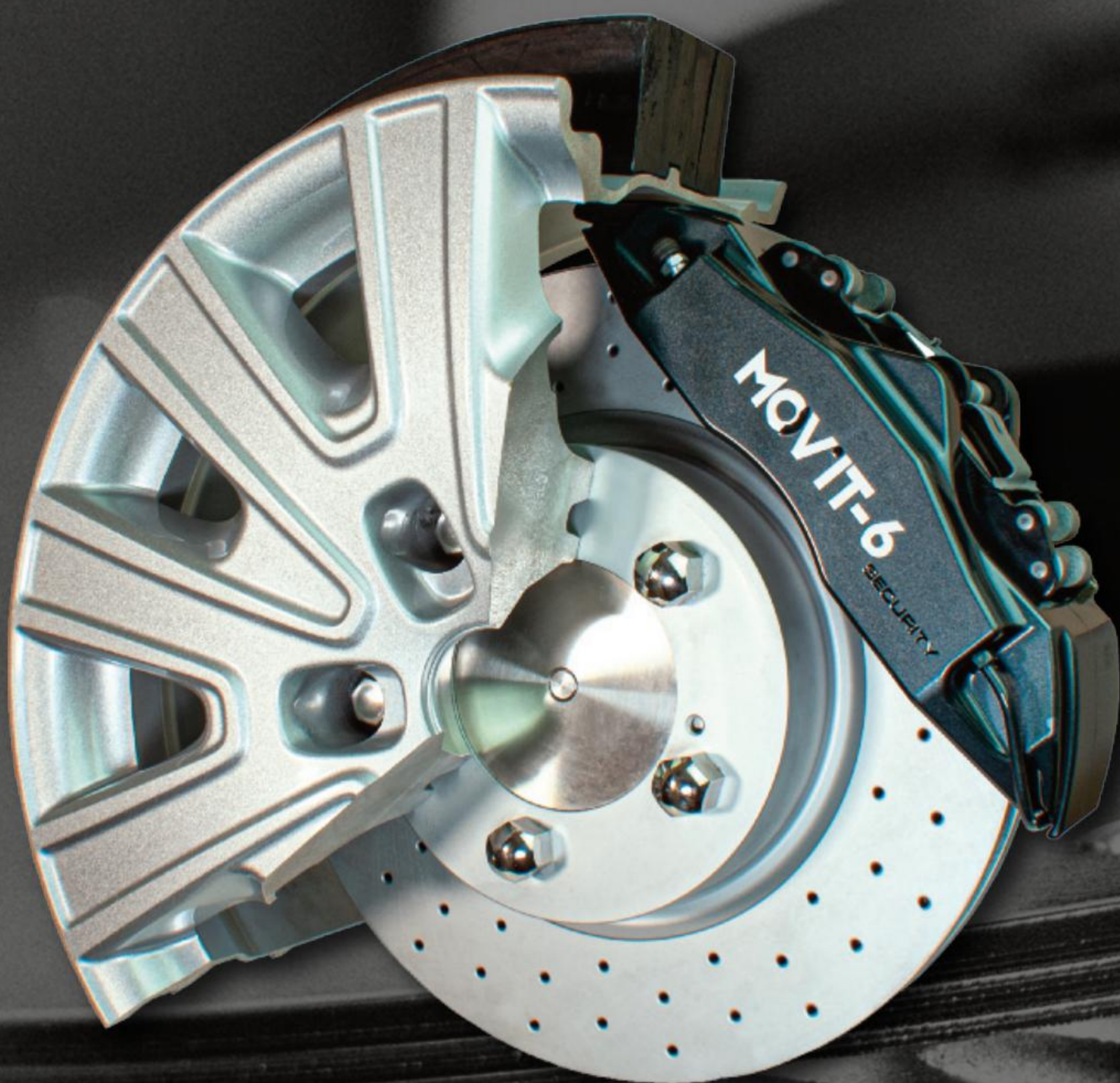


# ARMOUR MOBILITY



## @ IDEX 2023

TSS International is very proud to see the first series of armoured Toyota Land Cruiser 300s rolling out of the factories with a package of TSS' Armour Mobility products.



**D**eliveries of runflat wheel assemblies with a payload of 2250 kgs, adjustable suspension systems (complete with springs and sway bars), self-sealing fuel tanks, IED-protective SKYDEX floor mats, vehicle intercoms and complete brake upgrades with OEM-compatible parking brake confirm that TSS will continue to be a strategic partner for the armoring industry going forward. The Toyota Land Cruiser 300 is the long-expected successor to the highly popular and industry-defining Land Cruiser 200. Being a completely new vehicle, most of TSS' products had to be redesigned and re-tested. Close collaboration with TSS, its vehicle building customers and the engineers at its manufacturing partners have resulted in a shorter than usual design phase.

Parallel to the completion of mobility products for the LC300, TSS has also expanded its package for the latest generation of the Mercedes-Benz G-Class.

Similar to the LC300, the G-Wagen can now also be equipped with a complete Armour Mobility package,





containing a self-sealing fuel tank; heavy duty (runflat) wheels; bespoke upgraded suspension; brake upgrades with fully functional OEM Parking Brake; vehicle intercom and shock mitigating floor mats.

TSS will be present at IDEX 2023 to discuss these and many more developments for (civilian) armoured vehicles. Other platforms that benefit from Armour Mobility are Nissan Patrol Y62, MB S-Class, BMW 7-Series, MB Sprinter, VW Crafter, Toyota Land Cruiser, Hilux, Ford Pickup Trucks and many, many more.

Besides attending IDEX, TSS will also be exhibiting at EnforceTac 2023 in Nuremberg, Germany on 28 February and 1 March. Visit TSS' stand 9-651 at EnforceTac to see the complete package of products designed for the armoured Toyota LC300 up close and personal.

Contact TSS via **sales@tssh.com** or **+31180618922** to schedule an appointment at IDEX or EnforceTac.

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# THE LATEST TECHNOLOGY TRENDS IN SURVEILLANCE

The surveillance landscape is driven both by the pace of technological advancement and the changing requirements of providing persistent surveillance with a lower operator burden.

Effective detection and identification remain the key pillars of surveillance capability, regardless of whether it's used in the border, coastal or maritime domains, but the ways in which operators achieve this is continually changing.

It can be challenging to keep track of this continually evolving picture, but as but as a leading surveillance specialist, working every day with partners to fulfil their operational requirements, Chess Dynamics is well-placed to keep you informed.

Here, we'll explain some of the recent technological developments influencing the surveillance industry and share how Chess Dynamics has responded with new capabilities.



## Digital advancements

It's no surprise that digitisation is leading the change in surveillance capability. With the needs of security providers growing more complex, operators require the very best sensors to provide an accurate picture of the operational environment.

A system built with a digital architecture enables integration with a range of the most accurate, high-definition sensors to generate richer and more abundant data for operators. When configured for modular sensors, end users are given the option to customise their system to meet their surveillance need and ultimately, provide a greater range of sensing capability and flexibility.

This approach also enables secure network access to allow for improved integration with other sensors and systems, increasing the level and quality of data available to operators. The result of this is improved situational awareness, leading to better detection and identification.

Last year, we launched our next generation digital, electro-optical surveillance system which enables more accurate, flexible and integrated surveillance thanks to its digital architecture. The system is also modular, meaning sensors can be swapped out easily to ensure the highest levels of operational availability, further contributing to a persistent capability.

## Intelligent tracking

One area of significant technological adoption is in target tracking and clarification. We hear a lot about the impact of technologies such as artificial intelligence (AI) and machine learning in many different industries, but there's no doubt that they are causing a seismic shift in surveillance.

Vision4ce, a Chess Dynamics brand, introduced a next generation tracking feature for its CHARM Video Target Trackers product range in November 2022, incorporating AI and machine learning into the systems.

These technologies are able to automatically process images and identify threats themselves. This is improving tracking performance in the complex scenarios that operators are increasingly facing by enabling automated acquisition and reacquisition of targets.

The advent of AI and machine learning in the surveillance space is removing the traditional burden of the operator needing to stare at a screen for a long period of time. Systems are increasingly able to automatically track dynamic targets such as a jet ski or a drone and notify the operator when a threat has been identified.

Operators are therefore able to focus on other tasks while concurrently monitoring threats to maintain persistent surveillance. As with most applications of these technologies, they are a work in progress, but we are already seeing impressive results in the simplification of the target acquisition process.

Technologies that are providing operators with more and better data are here. If you require a surveillance capability, surveillance specialists such as Chess Dynamics can give you the tools to make the process as simple as possible.

If you're interested in finding out more, Chess will be on stand 03-C25 at IDEX



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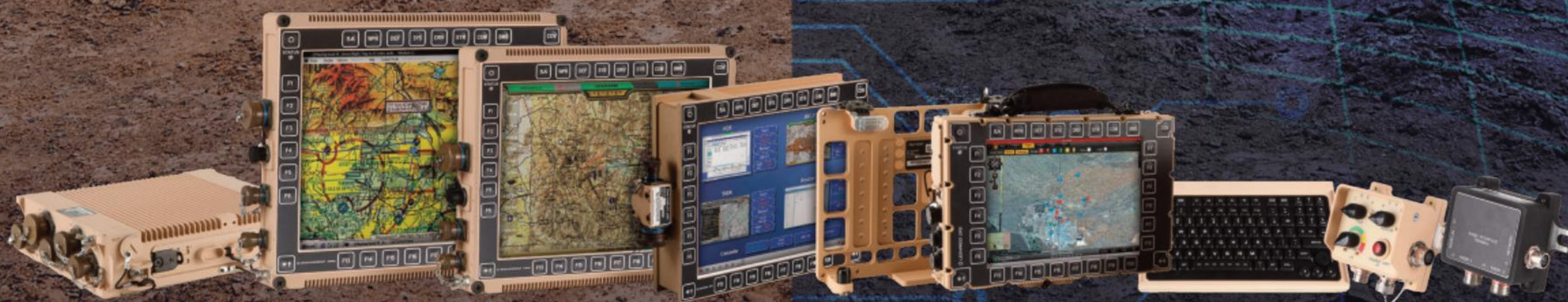
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