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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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Land Tactical C4ISR

MORE POWERFUL AND READY FOR TODAY'S COMPLEX BATTLESPACE

Peter Hurst, Vice President, International Projects & Business Strategy at Leonardo DRS Land Electronics

Through more than 20 years of development and combat experience, Leonardo DRS's industry leading C4ISR integrated platform networking capability has provided commanders and platform operators the ability to easily control and interface with sensors, communications equipment, mission command applications, and navigational devices.

This proven technology has delivered cutting-edge tactical computing and networking solutions to customers around the globe giving them a situational awareness advantage from a workstation in a range of ground combat platforms, fires outposts and command posts.

Today, the Bowman C4ISR system is more powerful than ever with the latest processing systems and a range of upgrades, including A.I. to extend the reach out to the tactical edge. Leonardo DRS has delivered more than 14,000 Bowman units to the United Kingdom's ground combat forces. They have relied on its networking system through numerous military campaigns because of the wide range of capabilities that deliver a common picture for users across the battlespace. From voice, video and data, the devices can be connected across the tactical network with adjacent platforms, remote or mobile command posts, higher headquarters, as well as with coalition partners.



Like the U.S. military's Mounted Family of Computer System (MFoCS) C4ISR system from Leonardo DRS, Bowman is designed to be agnostic to the network and applications allowing the end users to adopt best-of-breed solutions in terms of communications and data applications such as Blue Force Tracker.

At the heart of this system is Leonardo DRS's line of ultra-rugged, military-standard qualified hardware and software solutions. The scalable system also provides new capabilities to integrate various platform C4ISR devices with significant reductions in size, weight, power and cost.

More Powerful and Always Rugged

DRS' ultra-rugged tactical computers are designed to allow for ongoing technology insertion and upgrades. Over the course of large-scale projects such as Bowman and MFoCS, Leonardo DRS has been able to use the same base infrastructure to deliver ever-increasing amounts of capability as computing, network and security technology advanced. Leonardo DRS's next generation tactical networking and computing products are now more powerful than ever with Intel multi-core technology, graphical processors, and new interfaces for future expansion.

to meet emerging needs. The ability to use the current infrastructure and upgrade the current systems is more cost-effective than buying lower-grade commercial off-the-shelf systems and ensures that there is no compromise regarding the environmental performance of the system.

Leonardo DRS's tactical computing and networking products are the choice of a growing number of demanding end-users. These systems are installed and operational in over 425,000 ground vehicles and command posts with allies across the globe. These systems are delivering unparalleled performance in terms of reliability, availability and cyber secure resilience. In addition to the U.S. and U.K. installed bases, end-users are in the Middle East and Europe with the Polish Land Force and Romanian Army. In Southeast Asia, they are in Thailand and Indonesia as well as Australia and Taiwan among others.

Always Evolving to Meet New Threats

As the battlespace becomes more complex, Leonardo DRS's Land Tactical C4/5i hardware and software architectures are also changing to meet new and emerging requirements. Today, the company has advanced its tactical C4/5i systems by integrating both A.I.-based advanced sensing technologies with network and application-agnostic tactical computing and networking, while adding dismounted soldier situational awareness as a core new capability.

Bringing together our advanced sensing capabilities in areas such as EW, Radar and Electro-Optics with modular tactical, AI based computing is a logical and necessary step in the continuous effort to ensure our customers have the tools to sense and counter an increasing number of asymmetric threats on the battlefield.

A.I. Processors Bring Enhanced Situational Awareness

A.I.-based advanced sensing has the potential to significantly enhance situational awareness, decision making and operational efficiency. In the Intelligence, Surveillance and Reconnaissance space, Leonardo DRS's multi-sourced data fusion capability integrates various sensors to provide a comprehensive operational picture improving reaction times and reducing the cognitive load on commanders and crew by providing actionable options associated with a range of systems such as Electronic Countermeasures and Signals intelligence, Counter-IED and Proximity Protection of mobile and fixed sites.



*Dismounted Soldier
Applique running
Systematic EDGE C2 &
Silvus Radio for seamless
integration with Mounted
C4/5i capability.*

The key technologies supporting these developments include A.I. machine learning processors supporting pattern recognition and anomaly detection aided by deep learning which enhances image and signal recognition greatly improving the accuracy of threat detection and identification.

Looking Ahead

As Leonardo DRS drives towards extending the reach out to the tactical edge, the company will be introducing a new secure dismounted soldier applique capable of running over various secure radios and waveforms and of supporting multiple applications such as Systematic Edge as well as tactical air control.

The dismounted soldier system will be designed to be integrated with Leonardo DRS's advanced suite of integrated weapons sights and its next-generation, Blacklab man-portable Intelligence, Information, Cyber, Electronic Warfare and Space sensor.

Bowman is built on a long legacy of proven and reliable technology drawn from large programs such as US Army MFoCS that has grown with the ever-changing battlespace. Tomorrow's Bowman technology will be more powerful than ever and ready for the challenging and complex threats that face today's warfighters.

To find out more, visit Leonardo DRS at:

- **IDEX 2025, Stand # 02-B12, Abu Dhabi, UAE**
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GUARDIANS OF THE SKY:

Revolutionising Ground Based Air Defence

Richard Varley, Senior Land Sales Manager, Chess Dynamics

As aerial threats become increasingly sophisticated and diverse, the importance of Ground Based Air Defence (GBAD) systems cannot be overstated.

These systems form the backbone of a nation's defence strategy, providing a critical shield against a variety of airborne threats, from manned aircraft to unmanned aerial vehicles (UAVs) and missiles, and enabling deployable operations under a layered and secure system of systems.



GBAD systems are essential for protecting against a variety of aerial threats, including manned aircraft, both fixed wing and rotary, unmanned aerial vehicles (UAVs), and missiles. These systems are deployed on the ground and are designed to detect, identify, track, classify and if necessary, neutralise incoming threats.

It is now necessary to maintain a network of advanced sensors, powerful radars, and precision guided missiles working in unison to neutralise incoming threats before they can cause harm. GBAD systems are not about firepower; they are about creating a comprehensive, multi-layered defence that ensures the safety and security of the assets they protect.

Key components and functions of GBAD Systems

- 1. Detection and tracking:** GBAD systems use advanced radar and sensor technologies to detect, identify, and track aerial threats at various ranges. This includes long-range radar for early warning, and short-range sensors for tracking and threat engagement.
- 2. Missile and gun systems:** these systems can be equipped with hard kill surface-to-air missiles (SAMs) and anti-aircraft guns to intercept and destroy incoming threats. Such systems can be operated from fixed or mobile platforms, providing flexibility in deployment.
- 3. Command and control:** a robust command and control (C2) system is crucial for coordinating the detection, tracking, and engagement processes. A good C2 system can integrate data from multiple sensors across a wide frontage to direct an appropriate response to neutralise threats.
- 4. Layered Defence:** effective GBAD systems employ a layered defence strategy, combining short, medium, and long-range defence capabilities to create a comprehensive screening and effector shield. This enables multiple opportunities to intercept threats at different stages of their approach.



5. Mobility and flexibility: for survivability purposes, increasingly GBAD systems are designed to be mobile, allowing them to be quickly redeployed based on the tactical situation. This mobility enhances their effectiveness in dynamic combat environments.

At Chess Dynamics our engineers have developed comprehensive GBAD technologies bringing these functions together into a tailored, adaptable, and innovative family of systems known as Hawkeye. Hawkeye Land Surveillance and Air Defence

Our end users operate in some of the world's most hostile environments; in conflict situations, stability operations, and supporting roles. They deserve the best in electro-optical surveillance for land-based operations, and we deliver.

We work with the military users to ensure that they have the most reliable products and solutions for their land-based missions. By applying our engineering excellence, we deliver future-proofed, advanced technology for land-based operations. Our modular, and scalable multi-sensor systems are suitable for precise reconnaissance, surveillance, targeting and fire control purposes across the land domain.

Hawkeye systems provide comprehensive 24-hour surveillance and target identification in a broad range of operational scenarios and tactical applications, benefitting from dynamic direct-drive positioners and high-definition sensors (thermal imager and daylight tv), high performance laser range finders and built-in trackers. Our equipment integrates into end user battle management systems via digital architecture, and is combat system agnostic. Key features include target classification, video tracking, video analytics, image processing, video recording, georeferencing, laser range finders, and ruggedised processing.

Hawkeye EOSS-D (Electro Optical Surveillance System – Digital): a powerful surveillance and reconnaissance system that can be mounted in a fixed installation or in a stabilised configuration on vehicles. The EOSS-D's digital architecture allows employment of the latest generation thermal imager and TV camera sensors and includes

Chess's advanced tracking and target classification algorithms. It delivers superior situational awareness to operators.

Hawkeye Air Defence (AD): this system provides an integrated fire control solution for all types of ballistic effectors. It contains a high-definition thermal imager and daylight TV sensors, coupled with a high-performance laser range finder, all mounted on a dynamic direct-drive positioner. With a built-in tracker, Hawkeye AD delivers precise 3D coordinates of both air and surface targets to gun control or combat systems. It is suitable for use on both fixed and mobile platforms.

Hawkeye Multi Sensor (MS): Chess's latest electro-optical solution for the land domain, building on the combat proven Hawkeye Vehicle System for long-range detection and 24-hour target observation. Designed for easy installation, this system can be integrated onto any tracked or wheeled vehicle and is suitable for fixed or mobile installation. The modularity allows for additional payloads to be added or incremental technology improvements to be integrated, thereby expanding the systems capabilities and allowing mission-specific configuration.

Hawkeye Counter-UAS (C-UAS)

The field of counter-unmanned aerial systems (C-UAS) is rapidly evolving to address the growing threat posed by drones, the proliferation of which is responsible for increasing numbers of casualties in combat areas of operations, represents a significant danger to critical national infrastructure, and is increasingly being used in grey zone operations.

From safeguarding airports and critical infrastructure to protecting military operations and public events, these advanced technologies are at the forefront of modern security. C-UAS systems can detect, track, and mitigate the dangers posed by drones, ensuring the safety of both the skies and the people below. The systems employ a range of techniques to mitigate the threats posed by unauthorised drones, from jamming and spoofing to kinetic interceptors and directed energy weapons.



1. Detection Technologies

- **Radar:** uses radio waves to detect and track drones, providing information on their range, speed, size and direction.
- **Radio Frequency (RF) Scanners:** these detect the communication signals between a drone and its controller, allowing for the identification and tracking of the drone.
- **Electro-Optical and Infrared (EO/IR) Cameras:** these cameras provide visual and thermal imaging to detect and track drones. A combination of both is vital, especially in low visibility conditions.
- **Acoustic Sensors:** detects the sound produced by drone motors and propellers, which can be used to identify and locate drones.

2. Mitigation Technologies

- **Jamming:** disrupts the communication link between the drone and its operator by emitting RF signals, causing the drone to lose control and potentially land or return to its point of origin.
- **Spoofing:** sends false GPS signals to the drone, misleading it about its location and causing it to deviate from its intended path.
- **Kinetic Interceptors:** physical methods such as nets and projectiles to capture or destroy drones.
- **Directed Energy Weapons:** uses high-energy lasers or microwave systems to disable drones by damaging their electronics or sensors.

3. Integrated Systems

- **Command and Control (C2) Systems:** integrates data from various sensors and coordinates the response to drone threats, ensuring a cohesive and effective defence strategy.
- **Artificial Intelligence (AI):** enhances detection and tracking capabilities by analysing patterns and predicting drone behaviour, improving the accuracy and speed of threat identification.

Chess Dynamics has developed C-UAS technology designed to detect, identify, track, and defeat UAS engaged in hostile airborne surveillance and malicious activity. The system uses a combination of cutting-edge cognitive radars, electro-optical sensors, and directional RF detection and inhibition to provide 360-degree layered situational coverage.

The system combines a smart-sensor and solution agnostic effector package and is equipped with advanced AI capabilities for target identification, classification, and tracking.

Looking to the future

The future of GBAD and C-UAS is evolving rapidly to address increasingly complex and diverse threats and operating environments. These advancements are driven by the need to counter increasingly sophisticated threats, as well as a proliferation of low technology, easily produced and used drones, and to ensure that air defence systems remain effective in a rapidly changing technological landscape.

Chess Dynamics's solutions include:

- **Modular and integrated systems:** future GBAD systems will be highly modular, allowing for integration of various components such as sensors, effectors, and command and control units. This modularity enhances flexibility and interoperability among NATO and other allied forces.
- **Advanced detection and tracking:** enhanced radar and sensor technologies are being developed to improve the detection and tracking of a wide range of aerial threats, including drones, missiles, and aircraft. These advancements

are crucial for early warning and effective response. Chess Dynamics' designs are able to integrate these advancements as they are developed.

- **Artificial intelligence and automation:** AI and machine learning are playing a significant role in the automation of threat detection, identification, and response. These technologies can process vast amounts of data quickly, improving decision-making and reducing the time from detection to action. AI and machine learning are being increasingly integrated into C-UAS systems to enhance detection, identification, and response capabilities. These technologies enable systems to quickly analyse data and make real-time decisions, improving the accuracy and efficiency of threat mitigation. Chess' in-house image processing brand continues to make strides in improving the reliability, accuracy and speed of threat detection.
- **Collaborative defence networks:** future air defence strategies will involve collaborative meshed networks where multiple systems and platforms work together seamlessly. This networked approach enhances situational awareness and allows for coordinated responses to threats across areas of operations.
- **Directed energy weapons:** the development of directed energy weapons, such as high-powered lasers and microwave systems, is a significant trend. These solutions are at an ever-increasing Technology Readiness Level and will be able to disable or destroy drones and air platforms without the need for traditional ammunition, offering a cost-effective and scalable option.
- **Smarter sensor clusters:** advances in sensor technology are leading to the deployment of smarter sensor clusters that can detect and track drones more effectively combining radar, optical, and acoustic sensors to provide comprehensive coverage and improve detection accuracy.

Helping the military become future proof

Chess Dynamics is committed to helping our land-based military customers operate smarter and be capable of adapting to unknown future threats. We understand the increasing need for information

analysis and support our land-based customers through smarter (HD) sensors, Machine Learning, AI, and sensor fusion. Our world-class and intuitive human-to-machine interfaces enables operators to be well-equipped and informed in the most complex of scenarios.

We blend our 30 years of expertise in defence technology with innovation and creativity to deliver solutions that are modular and integrated, while also drawing on cutting edge technology. Chess recently launched Deep Embedded Feature Tracking (DEFT), an advanced real-time video tracking capability that provides accurate and robust tracking in complex situations.

DEFT uses a deep learning approach to create a comprehensive model of the tracked target, allowing the system to accurately locate dynamic targets and reliably re-acquire the target following periods of occlusion. DEFT provides improved tracking of difficult targets, such as dynamic objects that are changing appearance or rapidly accelerating, against foreground and background clutter, where traditional algorithms struggle.

The technology enhances our AI-driven target detection and tracking capability and integrates with Neural Network-based object detection and classification of targets including multi-rotor drones, vessels, and land vehicles.

As the tracking progresses, the model is continuously fine-tuned to enhance its understanding of the target, resulting in precise long-term, robust tracking performance. Accurate classification allows the system to take advantage of automation technology for threat prioritisation and alerts, while also developing robust analytics data to enable more accurate decision making.

There is huge potential for further innovation in advanced technologies for GBAD; Chess has already played a hugely significant role in this development and will continue to do so as we use AI to support and ultimately optimise operator and system performance.

Chess continues to deliver class leading technology to protect what our customers value most: strategic assets, critical national infrastructure, geographic borders and most importantly, their people.

For more information about our latest innovations, visit:

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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**

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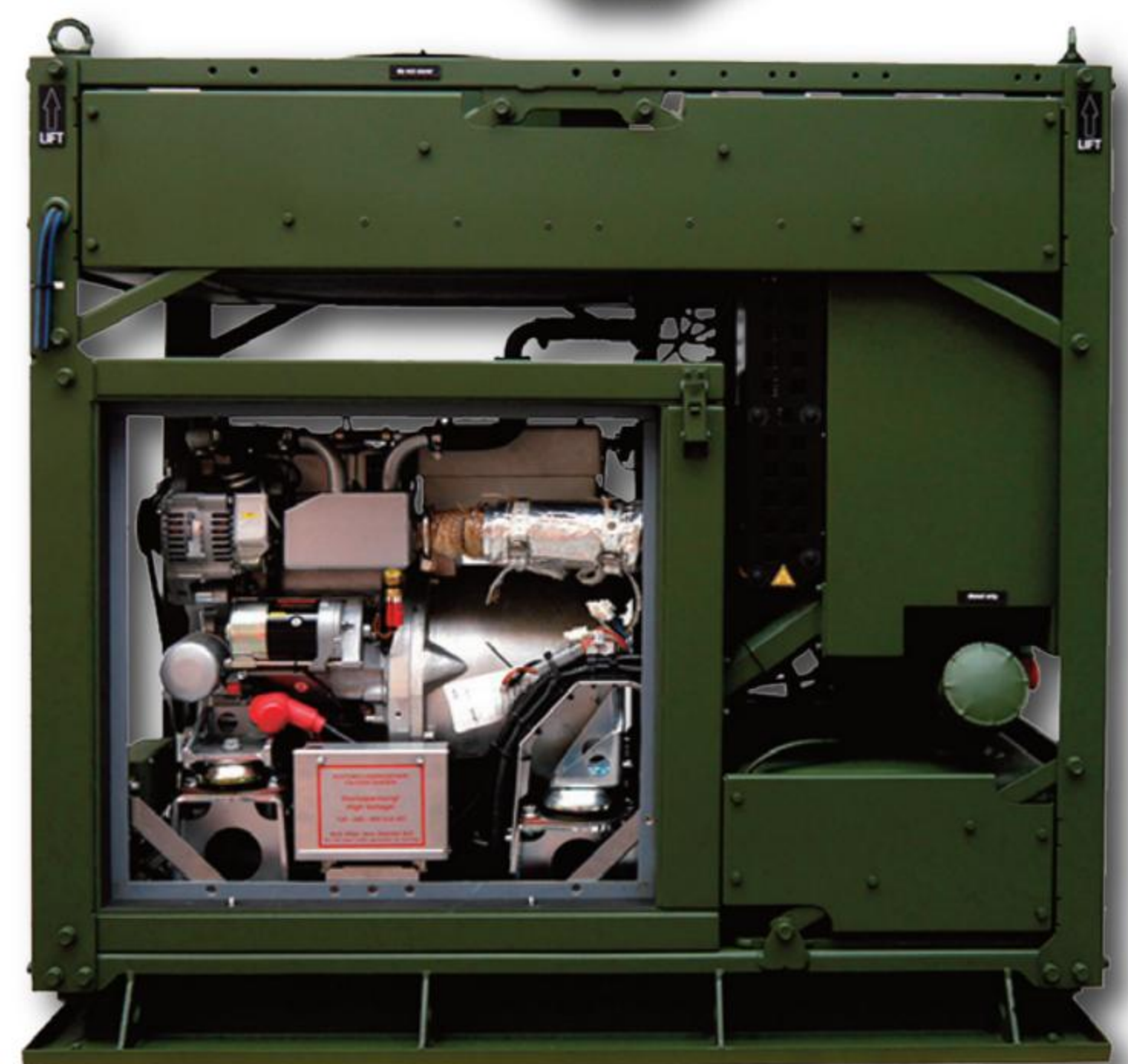
FISCHER PANDA UK - LEADING THE WAY IN MOBILE ENERGY SOLUTIONS

From military-grade generators built to handle the toughest terrains to eco-friendly propulsion systems, Fischer Panda UK is driven by a commitment to keeping people moving, working, and exploring. For over three decades, this family business has been at the heart of mobile power innovation, serving the Defence, Marine, and Vehicle sectors with an eye on quality, reliability, and sustainability. Today, as a trusted name across the UK and Europe, Fischer Panda UK combines technical expertise with a personal approach that keeps customers returning year after year.

Fischer Panda UK: A Journey of Progress Since 1994

It all started in a small facility in Verwood, Dorset, where Fischer Panda UK first began supplying mobile power solutions to customers looking for reliable, robust equipment. Founded in 1994, the company quickly grew beyond a simple generator supplier to become a leader in comprehensive, integrated solutions that are trusted across Europe. Today, Fischer Panda UK is not just a fixture in the UK—it has expanded with facilities and staff in key European locations, ensuring fast, reliable service for customers throughout the continent. Listening to customers' needs and adapting to deliver the best solutions remain core values.

Barry, one of the founding members, recalls: *"We didn't just want to sell products; we wanted to solve problems. For us, it was always about making life easier for our clients, whether they're on the front lines of defence or deep in the wilderness. That drive has taken us a long way, and we're grateful to have built strong relationships across Europe."*



Pioneering Power Solutions for Defence and Industry

When it comes to Defence, Fischer Panda UK stands out. Their military-grade generators—designed for extreme environments, from the icy grip of -45°C to the sweltering heat of 55°C, and high altitudes up to 3,000 metres—are trusted by NATO, European, and US armed forces. Designed with the latest water-cooling technology, these generators operate quietly with minimal exhaust heat, a critical advantage for military operations that demand stealth and durability. Fischer Panda's unique "tunnel" system integrates power, cooling, and heating within a compact design, transforming military shelters and command posts across remote locations into efficient and reliable hubs of power.

Marine and Vehicle Expertise

In the Marine sector, Fischer Panda UK is a name recognised for reliability and innovation. For decades, their compact, quiet marine generators have been a top choice for boatbuilders and operators alike, whether for leisure or commercial vessels. With a focus on reducing environmental impact, the company has developed electric propulsion systems that offer a clean, quiet alternative to fuel engines—answering the demand for sustainability in the marine market.

The company's expertise extends to specialist vehicles, where Fischer Panda UK's advanced power systems are designed to perform in even the harshest conditions. From innovative air conditioning solutions to desalination units and hybrid power systems, Fischer Panda UK ensures that its clients have the reliable, adaptable solutions they need. This commitment to high-performance technology makes Fischer Panda a valued partner across sectors where reliable power is essential.

A Vision for Sustainability and Hybrid Systems

As more businesses seek environmentally friendly solutions, Fischer Panda UK is at the forefront of developing sustainable, hybrid power systems. These systems blend battery storage with renewable energy sources to reduce environmental impact without sacrificing performance. Representing leading brands such as Clayton Power and EFOY fuel cells, Fischer Panda UK provides power options that utilise methanol or hydrogen for a cleaner, greener approach.

"We're seeing a major shift towards hybrid systems," Barry notes. "Our clients want to cut down on fuel consumption, reduce emissions, and increase efficiency, and we're here to make that happen."

The company also pioneers' solutions in water and fuel purification, essential for military and humanitarian efforts. With innovations like the H2O Pro system, which generates 114 litres of clean drinking water per hour from virtually any source, Fischer Panda's technology is invaluable for disaster relief and remote missions.

A Family Business with Global Reach

While Fischer Panda UK has expanded into Europe, becoming a global name in mobile power, it's never lost the personal touch that started it all. *"At the end of the day, we're still a family business,"* says Barry. *"We're proud to have grown our reach, but we've never lost that personal approach. We're here to listen, to adapt, and to make sure our customers get what they need—whether they're right here in Verwood or anywhere across Europe."*

The team at Fischer Panda UK is ready to help power the future of mobile solutions. As industries evolve and the demand for sustainable, high-performance power solutions grows, Fischer Panda UK will continue to lead the way, offering innovation, reliability, and a service that's personal, professional, and always ready to adapt.

To learn more about Fischer Panda UK's full range of solutions or to speak to a member of their team, or visit Fischer Panda UK's website - <https://www.fischerpanda.co.uk>. Whether you're seeking reliable power for a marine vessel, specialist vehicle, or Defence application, Fischer Panda UK has the experience, technology, and passion to meet your needs.

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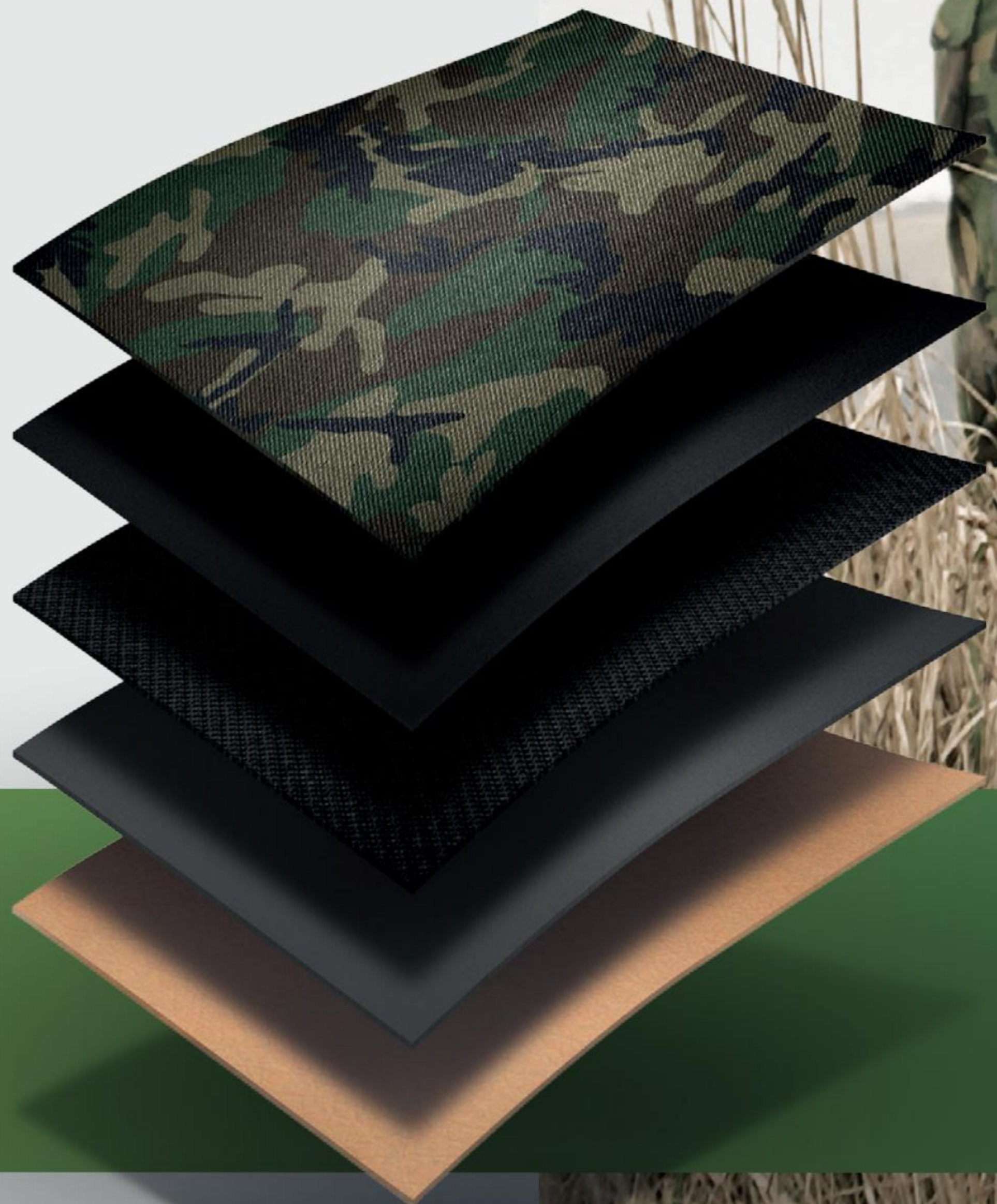
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AUGMENTING UAV SAFETY WITH UBIQUITOUS RADAR TECHNOLOGY

Integrating ubiquitous radar technology for advanced detect and avoid capabilities

In the fast-evolving field of uncrewed aerial vehicles (UAVs) the need for sophisticated detect and avoid (DAA) capabilities has never been more important.

Developing these technologies is critical in enhancing operational safety whilst allowing stringent regulatory standards in aviation to be met. Plextek is addressing this crucial safety challenge by pioneering innovative solutions through our ubiquitous radar technology.

Ubiquitous radar provides UAV safety

As UAVs become more prevalent in commercial, industrial, and civil airspace, ensuring their safe coexistence with both crewed and uncrewed aircraft is increasingly complex.

Unlike traditional scanning radars that rely on sweeping a narrow beam to survey the environment, capturing information sequentially, Plextek's ubiquitous radar revolutionises traditional sensing by

continuously illuminating and monitoring the entire scene within its field of view. Plextek's innovative radar system can detect returns from multiple objects, in multiple directions simultaneously, and this constant situational awareness enables the radar to maintain a real-time, comprehensive view of its environment, thereby enhancing its detection capabilities.

The potential to integrate ubiquitous radar technology into uncrewed systems could offer a leap forward in collision avoidance capabilities. This advanced sensing solution enhances autonomous detection and evasion abilities, reducing the risk of in-flight incidents. Importantly, this technology serves a dual purpose: for it not only safeguards the uncrewed vehicles themselves, but also protects the broader airspace ecosystem. By enabling UAVs to coexist safely with other aircraft and obstacles, ubiquitous radar contributes to the overall safety and integrity of shared airspace, paving the way for more widespread and responsible autonomous UAV operations.

Extending beyond visual line of sight operations

The ubiquitous radar technology can expand UAV operational capabilities, offering the potential to enable flight beyond visual line of sight (BVLOS). This functionality could open new possibilities for UAV use, from long-range logistics to emergency response or where it is necessary to operate safely over extended distances.

A demonstration of innovation: Flowcopter

Flowcopter are partnering with Plextek to transform remote logistics through its innovative FC100 heavy-lift UAV powered by a novel hydraulic transmission. One of the challenges the project faces is ensuring the safe navigation of the UAV beyond the visual line of sight in complex or unpredictable environments.

Reliable detect and avoid technology is crucial for enhancing flight



Credit: Flowcopter

Credit: Flowcopter



operations. To address this, we performed preliminary integration of our Ubiquitous Radar technology platform (PLX-U16) with Flowcopter's heavy-lift UAV. By equipping the UAV with autonomous obstacle detection, we substantially reduce the risk of mid-air collisions and enhancing overall operational safety. The improved reliability and autonomy of the system can open new possibilities for UAV applications in challenging environments where conventional transportation methods face limitations.

The FC100, has been designed and developed to support a wide range of critical operations, including search and rescue, law enforcement, and remote delivery. This versatile utility copter boasts an impressive payload capacity of up to 200 kg, making it a game-changer for various industries and applications. Its design enables it to excel in challenging maritime environments, supporting ship-to-shore and ship-to-ship operations. Its robust construction and advanced features make it particularly well-suited for offshore logistics, where it can significantly enhance operational efficiency and safety.

Continued trials with Flowcopter are focussed on refining the radar's range, accuracy, and ability to differentiate between various types of obstacles such as other aircraft or terrain features. This research is crucial for developing systems that can firstly match, and then outperform human pilots in terms of detection range and reaction time, ultimately paving the way for safer integration of UAVs into non-segregated airspace.

Key benefits

- **Autonomous collision avoidance:** enables UAVs to autonomously detect and avoid potential obstacles, significantly enhancing operational safety.
- **Shared airspace:** for efficient operations in shared airspace, ensuring safe coexistence with crewed aircraft.
- **BVLOS:** UAVs can safely conduct operations beyond visual line of sight, expanding operational scope.
- **Efficiency and reliability:** reduces reliance on human operators for collision avoidance, improving efficiency and reliability.
- **Compliance:** Assisting compliance and integration into national airspace systems.

- **Situational awareness:** improves UAVs' situational awareness in complex environments, for safe navigation and missions.
- **Industry-wide:** improves UAV applications across industries, from logistics and delivery to emergency response and environmental monitoring.

Why work with Plextek?

We have a long history of innovation, plus a deep understanding of the challenges faced by uncrewed systems, which positions us as a leader in the development of sense and avoid capabilities for UAVs. Our skies are increasingly shared by crewed and uncrewed systems, so safe and efficient operation of these vehicles is essential. Through the integration of Plextek's ubiquitous radar technology, we are actively building aerial safety and efficiency.

For more information on our ubiquitous radar technology and how it can revolutionise your UAV platforms, please visit Plextek's ubiquitous radar page: <https://www.plextek.com/technology-platforms/ubiquitous-radar/>

About Flowcopter

Flowcopter is a UK-based aerospace company that has developed a long endurance, heavy payload utility UAV. Their low-cost, robust platform is ideally suited to remote logistics applications in environments where traditional infrastructure isn't available or where there is a risk posed to crewed aircraft.

www.flowcopter.com



Credit: Flowcopter



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RELIABLE EQUIPMENT FOR FIELD HOSPITALS: TRUST PELI TO PROTECT WHAT MATTERS MOST

In the challenging environments of military field hospitals, reliable equipment is essential. Ensuring critical medical supplies, diagnostic tools, and communication systems remain functional, secure, and easily transportable is paramount for effective operations.

LEARN MORE



■ WHY PELI?

Peli, a registered trademark of Pelican Products, has over 45 years of experience in delivering premium protective cases and advanced lighting solutions. Recognized globally for their durability and performance, Peli's products are trusted by military forces, healthcare professionals, and field engineers. Every Peli product is designed to withstand extreme temperatures, rough handling, and harsh environments, making them the perfect choice for the critical needs of field hospitals. Additionally, Peli protective military cases are rigorously tested to MIL-STD standards, ensuring they meet the demanding requirements of military use.

Peli's continuous development, field testing, and improvement of its products based on user feedback have led to an exceptionally reliable portfolio that excels under the harshest conditions.

■ CUSTOM SOLUTIONS FOR UNIQUE NEEDS

Every field hospital operation is different, and Peli understands that a one-size-fits-all solution doesn't always meet the needs of diverse missions. That's why Peli offers customization options, from bespoke foam interiors for unique medical devices to special labeling and organizational features. This flexibility allows military procurement agencies to ensure every piece of equipment is securely stored and easily accessible when needed.

Peli's engineering teams across France, Spain and Germany are dedicated to designing, developing, testing, and manufacturing customized case solutions. These centers are equipped to work on bespoke projects, ensuring that each solution meets the exact specifications required by the military and defense agencies around the world. This approach allows Peli to develop tailored cases that fit specific equipment, such as portable diagnostic machines or essential surgical tools, offering superior protection during transportation and storage.

■ REAL-WORLD APPLICATIONS

Peli products are already being used by military field hospitals worldwide. These products have been tested and proven under real-world conditions, supporting medical teams in various operational environments. By choosing Peli, military procurement agencies and field hospital personnel can trust that their equipment will perform, even in the most unpredictable situations.

When it comes to safeguarding critical equipment and supplies in military field hospitals, reliability, durability, and performance are non-negotiable. Peli's comprehensive range of protective cases, Medchests, field desks, and lighting solutions provide field hospital personnel with peace of mind, knowing their equipment is secure, operational, and ready to perform when needed. The combination of field-tested designs, robust materials, and customization options makes Peli an invaluable partner in supporting military medical operations.

BENEFITS OF CHOOSING PELI FOR FIELD HOSPITALS

- + **Durability and Reliability:** Peli products are known for their rugged construction, ensuring that equipment is protected from the harshest conditions.
- + **Customizable Solutions:** From custom foam interiors to specialized cases for specific devices, Peli offers tailored solutions that meet the unique needs of field hospital operations.
- + **Ease of Transport:** Designed to be lightweight yet extremely robust, Peli cases make it easier for medical teams to transport equipment efficiently and safely.
- + **Global Standard Compliance:** Peli's packaging solutions are battle-tested and meet Global Military standards, including MIL-STD-810 certification, which can be adapted to meet local military testing requirements.
- + **Trusted Globally:** Peli has a proven track record with military and healthcare professionals worldwide, making it a go-to choice for reliable, field-ready equipment protection.

■ COMPREHENSIVE PROTECTION SOLUTIONS

Peli's range of products for field hospitals includes protective cases, Medchests, field desks, and lighting systems, ensuring all essential equipment is safe, operational, and ready for use.

1. PROTECTIVE CASES



Field hospitals rely on sensitive medical equipment that needs robust protection during transport and storage. Peli's protective cases offer unmatched durability, shielding instruments from moisture, dust, and harsh conditions. Available in various sizes and customizable with foam interiors, they ensure tailored, secure storage. Additionally, Peli's **EMS cases** are designed for organizing first aid supplies and medical kits, featuring compartmentalized interiors for quick access during emergencies.

2. MEDCHESTS

Peli's **Medchests** are specialized, robust containers designed specifically for organizing and transporting medical supplies in demanding field conditions. One of the standout features of the Medchest is its unique drawer system, which provides easy access to critical medical tools and supplies. Each drawer can be customized with dividers to accommodate various items, from bandages and syringes to diagnostic equipment and medications. The drawer system is designed to prevent shifting during transport, ensuring that supplies stay organized and secure, even in rough conditions.

3. FIELD DESKS

Efficient organization and quick setup are critical in a field hospital environment. Peli's **field desks** offer portable, foldable solutions that serve as mobile workstations for medical and administrative personnel. Easy to transport and set up, these desks provide a sturdy and functional workspace, equipped with storage drawers and compartments to hold essential documents, laptops, and other administrative tools.

4. PORTABLE LIGHTING SYSTEMS

Lighting is critical for field hospital operations, especially during triage and nighttime equipment setup. Peli's portable lighting solutions deliver reliable, powerful illumination in compact, easy-to-use designs. With options ranging from hand-held torches to area lights, Peli's lighting products ensure that medical teams have the light they need to work efficiently, regardless of the conditions.

Peli's **Remote Area Lighting Systems (RALS)** are particularly beneficial in field settings. These battery-powered, rechargeable units are fully portable, foldable, and extremely easy to set up. They produce safe and clean energy with long run times, making them ideal for temporary medical camps, emergency setups, and other field hospital applications. The larger area RALS units can provide up to 24,000 lumens and can run continuously for up to 24 hours, ensuring uninterrupted light throughout the entire shift.



Red Cat Announces

Production Selection for U.S. Army Short Range Reconnaissance Program

Red Cat's next generation Teal system will be the Army's Program of Record SRR sUAS, concluding the rigorous, multi-tranche competitive process

Red Cat Holdings, Inc. (Nasdaq: RCAT) ("Red Cat"), a leading American drone technology company, has been selected as the winner of the U.S. Army's Short Range Reconnaissance (SRR) Program of Record. The production selection was made after a test and evaluation process of Teal's next generation sUAS, completed by the Army Project Management Office for Uncrewed Aircraft Systems, Army Maneuver Battle Lab, Army Test and Evaluation Command, and Army Operational Test Center.

"This is a powerful moment in time, coming after five years of blood, sweat, and tears put into SRR by our incredible team. The long-awaited production selection marks a new era for our company and the future of American drones," said Geoff Hitchcock, Chief Revenue Officer of Red Cat. *"We were selected based on soldier feedback, technical performance, volume manufacturability, and system cost. Our top priority now is to start ramping production of the next generation system, recently announced as the Black Widow and WEB, and give warfighters the*



RED  CAT



tools they need to be successful on the modern battlefield."

"Warfare has undergone a dramatic transformation over the past two years, with a significant shift towards drone technology, exemplified by the SRR Black Widow. It is an honor to support the U.S. Army by delivering the Black Widow to our warfighters. We believe this advanced technology will enable the Army to shape the battlefield, save soldiers' lives, and serve as a powerful tool in their arsenal," said Jeff Thompson, CEO of Red Cat. *"This long-term contract will give us the capability to continue to improve the Black Widow, scale production and improve margins."*

"Both the operational and tactical levels of war and maneuver of combat elements have evolved significantly over the past couple of years," said Paul Edward Funk II, retired Four-Star Army General and Red Cat board member. *"Operational success today depends on the ability to seamlessly move data across the battlefield. From a tactical perspective, small unmanned aerial systems that are rucksack portable are playing a vital role in Intelligence*

Surveillance & Reconnaissance, as well as surgical strike capabilities based on the real-time needs of the warfighter."

The SRR contract selection builds on significant momentum for Red Cat, with the acquisition of FlightWave Aerospace, the announcement of the ARACHNID™ family of systems, and the creation of the Red Cat Futures Initiative. The company is focused on ramping production of Teal's next generation system to meet the Army's currently stated acquisition objective for 5,880 systems, which is subject to change over the 5 year period of performance. Red Cat is also preparing to meet increased demand across the rest of the U.S. DoD, federal government, and allied countries, to support operators and warfighters globally.

For more information about Red Cat and the U.S. Army's Short-Range Reconnaissance Program of Record, please visit:

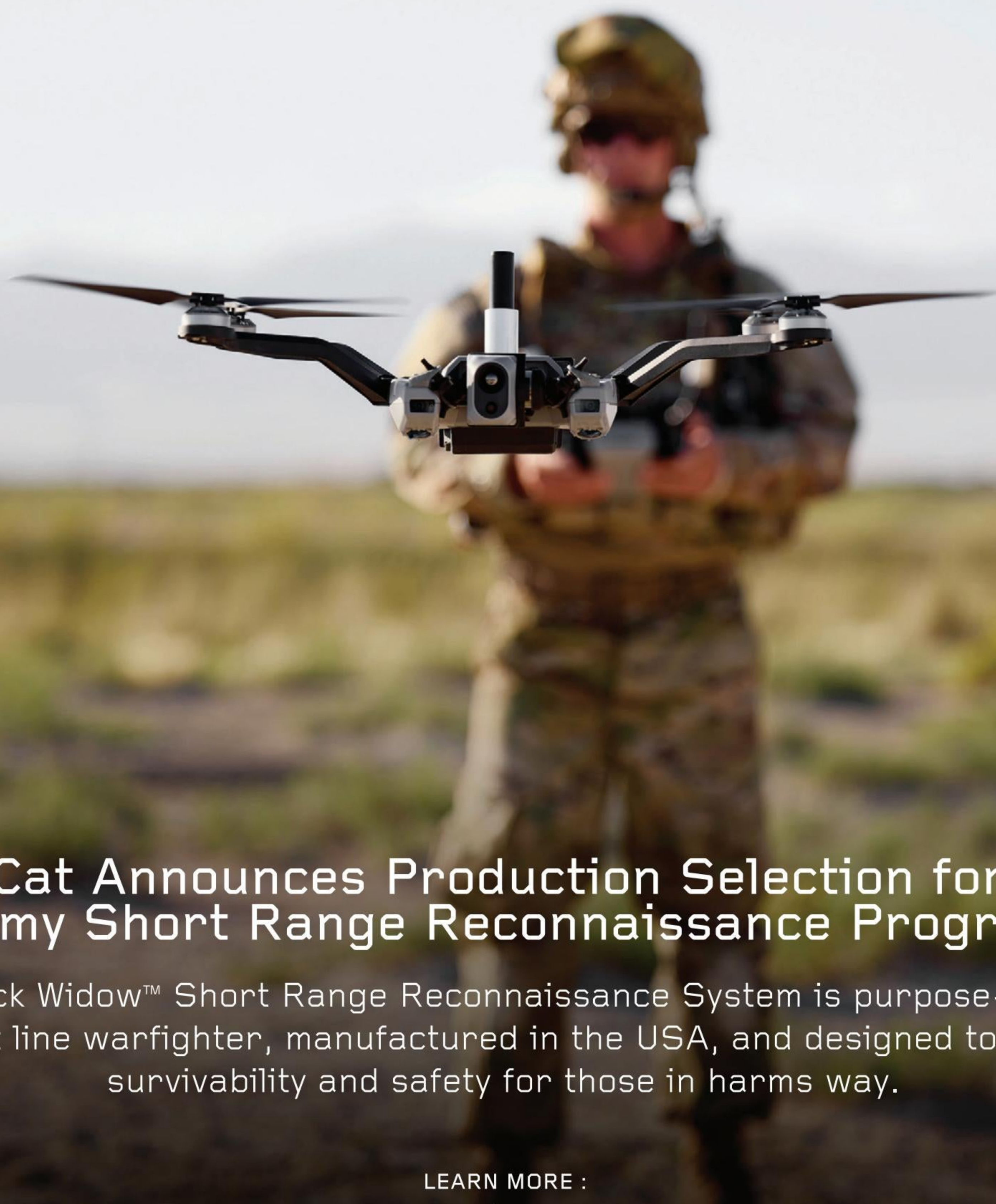
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Red Cat Announces Production Selection for U.S. Army Short Range Reconnaissance Program

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The Nord-Lock Combi Nut

Enhancing Safety and Efficiency in Critical Defense Applications

In response to the growing demand for more efficient and reliable bolting solutions, Nord-Lock has updated its standard product range to include the innovative Nord-Lock Combi Nut.

This product is designed to meet the rigorous demands of the defense sector, where safety and reliability are paramount.

A Game-Changer in Bolting Solutions

The Nord-Lock Combi Nut integrates a pair of captivated Nord-Lock original washers, combining parts that were previously

assembled separately into one cohesive product. This design not only simplifies the assembly process but also significantly reduces the risk of incorrect assembly and accidental part drops.

For defense applications, where every second counts and precision is critical, the Nord-Lock Combi Nut offers a streamlined solution that enhances operational efficiency.

When Safety Really Matters

In defense operations, the integrity of mechanical systems can be the difference between mission success and failure. Nord-Lock's wedge-locking technology, which has been trusted since 1982, ensures that bolted connections remain secure even under the most severe vibrations and dynamic loads. The Nord-Lock Combi Nut design leverages this technology, providing unparalleled performance in maintaining bolt tension and preventing loosening.

Key Benefits for Defense Applications

- Enhanced Performance:** The Nord-Lock Combi Nut's integrated washers increase preload as soon as any rotation starts, ensuring bolts remain tight regardless of the intensity of vibrations or dynamic loads. This is crucial

for maintaining the integrity of defense equipment in harsh environments.

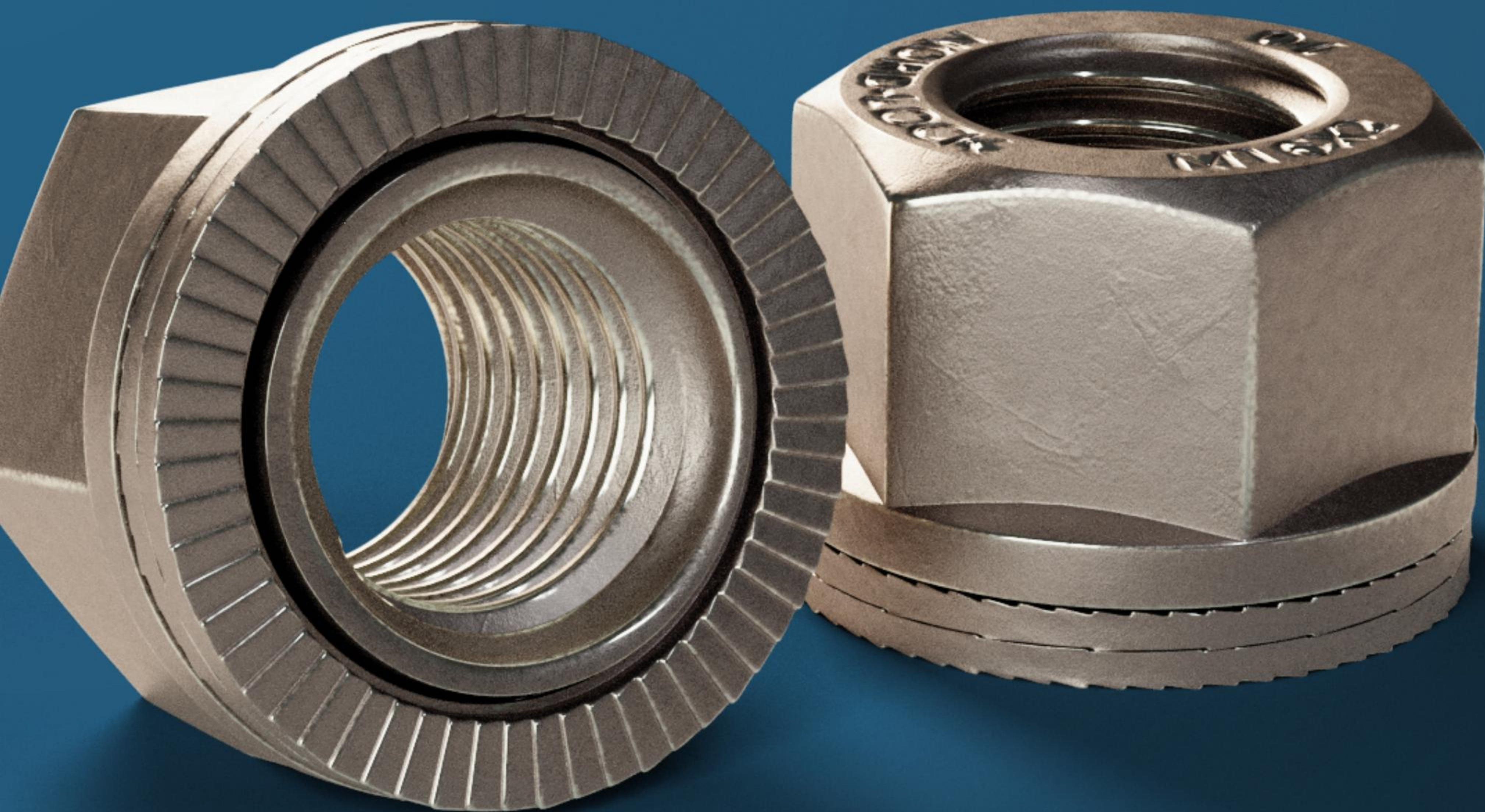
- 2. Outstanding Corrosion Protection:** The Nord-Lock Combi Nut features high-performing corrosion resistance, essential for defense applications exposed to extreme conditions. This ensures long-term reliability and reduces maintenance needs.
- 3. Streamlined Operations:** By combining multiple parts into a single product, the Nord-Lock Combi Nut simplifies the assembly process, saving time and reducing the potential for errors. This is particularly beneficial in defense manufacturing, where efficiency and accuracy are critical.
- 4. Global Availability:** Nord-Lock's extensive global network ensures that the Nord-Lock Combi Nut is readily available wherever defense operations are conducted. This guarantees swift support and delivery, which is vital when operational timelines are tight.

A Trusted Partner in Defense

Nord-Lock's commitment to innovation and quality makes it a trusted partner in the defense sector. The introduction of the Nord-Lock Combi Nut to the standard product range is a testament to Nord-Lock's dedication to addressing the specific needs of its customers. By providing solutions that enhance safety, efficiency, and reliability, Nord-Lock continues to support the critical missions of defense organizations worldwide.

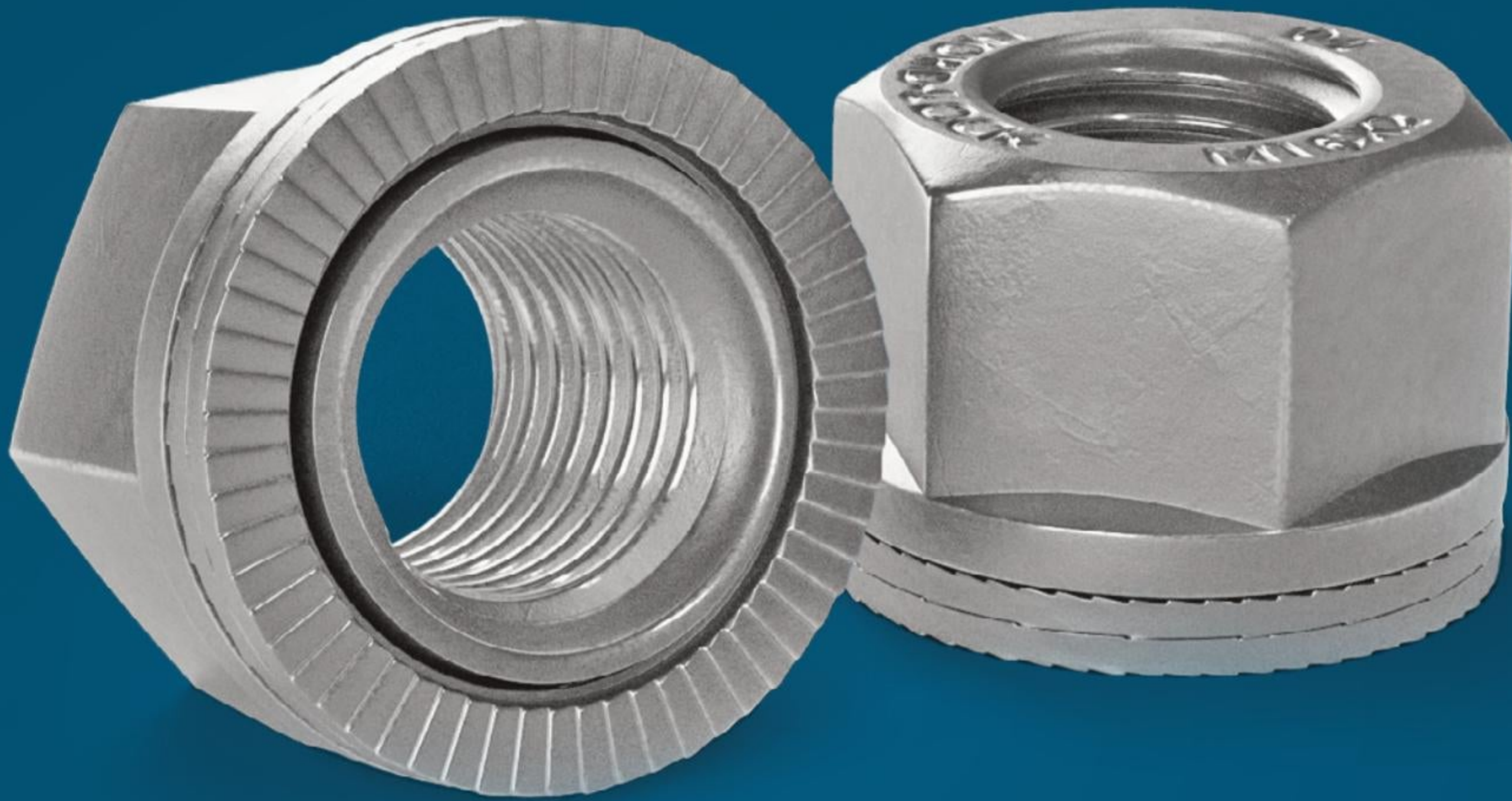
For more information on the Nord-Lock Combi Nut and other bolting solutions, visit Nord-Lock's website.

www.nord-lock.com



NORD-LOCK GROUP

CHOOSE SIMPLICITY



**It's how to achieve streamlined
installation processes.**

That's why we are introducing the Nord-Lock® Combi Nut. This product reduces the number of parts your operators have to deal with by combining our world-famous washers with a nut. The result? A faster, safer way to get the job done.

AdaCore

AdaCore and the Future Airborne Capability Environment

The FACE™ approach is a government-industry initiative to reduce defense system life cycle costs through portable and reusable software components. It consists of a technical approach—a software standard based on well-defined common interfaces—and a business strategy for encouraging the development and deployment of FACE-conformant products.



- **AdaCore** has been an active member of The Open Group's FACE Consortium since 2012.
- **AdaCore** is committed to the success of the FACE approach, and both the Ada language and the company's product offerings directly support the initiative's objectives.
- **Ada** was designed for programming critical real-time embedded systems and has a long and successful track record in military and aerospace projects and in other high-assurance domains where safety and security are required.

info@adacore.com

www.adacore.com

AdaCore-led effort

brings a practical approach to verifying FACE® conformance for Ada Software.

A major milestone for Ada and the FACE community was reached this past Autumn when the FACE Consortium formally approved a proposed approach to FACE conformance verification for Ada software.

Performed under the auspices of the Operating Systems Subcommittee of the FACE Consortium's Technical

Working Group, this effort was led by AdaCore's FACE team comprising Ben Brosgol, Dudrey Smith, Michael Frank, and Dana Binkley.

Conformance verification for Ada has previously been a problem since the FACE conformance process is designed to enforce source-code portability through link-time tests against standard stubbed run-time libraries. Such an approach works well for C and C++, but Ada code is portable not simply by invoking standard APIs but also through standard syntax whose object code calls functions in a compiler-specific runtime.

The new solution works within and extends the current FACE approach by defining a mechanism for incorporating an Ada toolchain with a compiler-specific runtime in the

Conformance Test Suite, and determining whether it enforces the restrictions imposed by the FACE Technical Standard. If the Ada toolchain with its stubbed compiler-specific runtime does not detect a violation, then the developer of the Ada software component will need to furnish inspection evidence to demonstrate that the prohibited feature is not used. AdaCore's Static Analysis Suite, in particular the GNATcheck tool with FACE-specific rules, can help customers construct such evidence.

The details of the Ada conformance procedures can be found in a paper, authored by AdaCore's FACE team, which was published in the proceedings of the 2024 FACE/SOSA Technical Interchange Meeting.

By helping to provide an official approach to FACE

conformance verification for Ada—both Ada 95 and Ada 2012—AdaCore has continued its mission of making Ada a “first-class citizen” in the FACE community. Next on the agenda is to define a practical process for conformance verification when the software component comprises both Ada and C code. Work is in progress on a solution.

AdaCore

www.adacore.com

HOW IOT IS REVOLUTIONIZING MILITARY OPERATIONS

The integration of the Internet of Things (IoT) into military applications has transformed modern defense strategies, introducing unparalleled efficiency, connectivity, and adaptability.

This evolution, referred to as the Internet of Military Things (IoMT) or Military Internet of Things (MIoT), is reshaping how armed forces prepare for and respond to dynamic threats across diverse environments.

The Role of IoMT in Modern Defense

IoMT connects a vast array of devices to exchange and analyze data in real-time, driving innovation across various

sectors. In defense, this connectivity is more critical than ever, enabling precise coordination, enhanced situational awareness, and rapid decision-making.

Military IoT, or the Internet of Battlefield Things (IoBT), utilizes cutting-edge edge architecture, biometrics, and environmental sensors to enhance battlefield performance and safety. The global IoMT market reflects this surge in demand, projected to grow from \$439 billion in 2019 to \$807 billion by 2025, with an annual growth rate of 11%. Transformative Applications of IoT in Defense

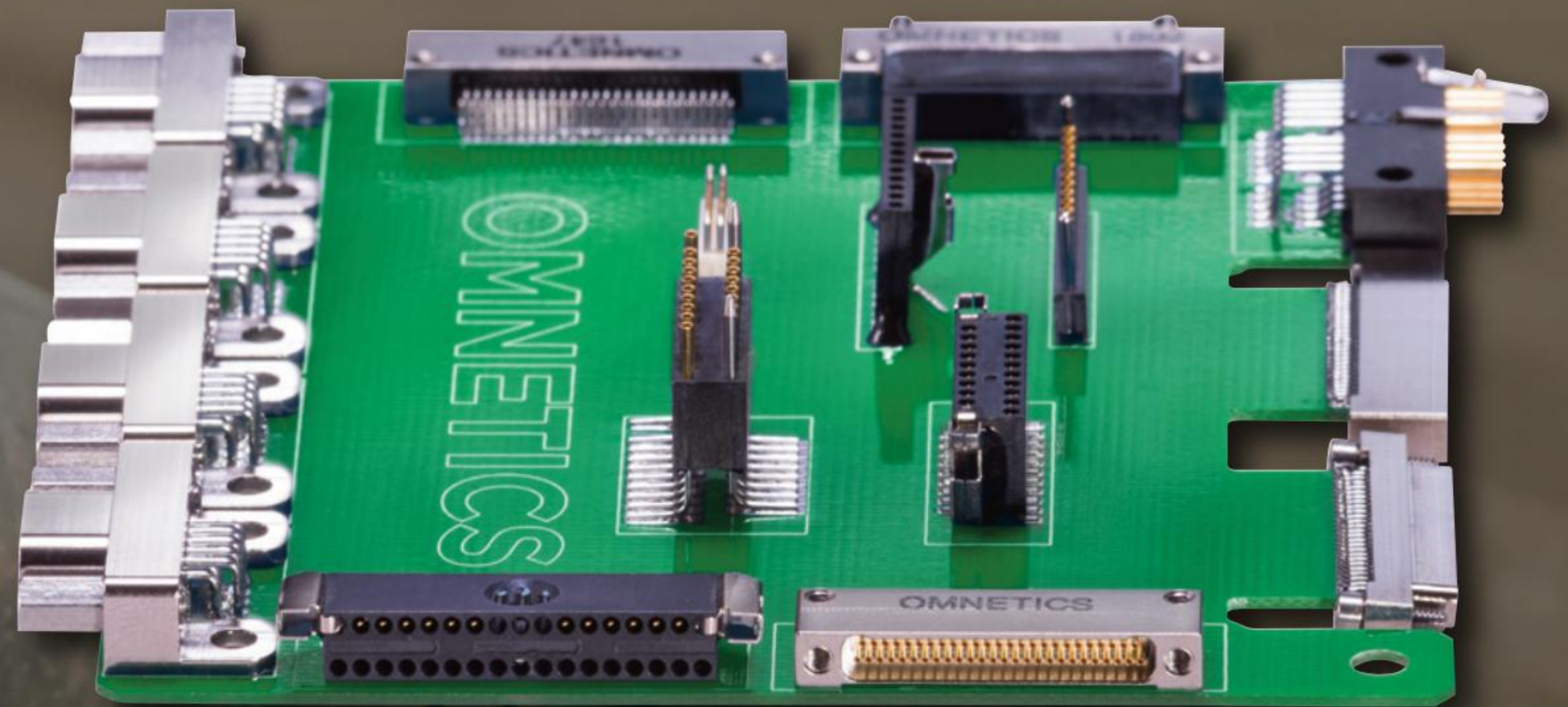
1. Battlefield Awareness

IoT-powered unmanned aerial drones equipped with sensors and cameras provide commanders with real-time battlefield insights. These drones capture live images, track terrain and enemy positions, and relay critical data to command centers, facilitating quick and informed decisions.

2. Enhanced Base Security

Military installations are safeguarded using advanced IoT sensors that collect biometric data, such as fingerprints and iris scans, to identify potential threats. These measures prevent unauthorized access and bolster perimeter security.





3. Health Monitoring for Soldiers

Wearable sensors integrated with IoT monitor soldiers' physical and mental health. Metrics like pulse rate, body temperature, and speech patterns offer real-time insights into their condition, ensuring timely medical intervention.

4. Equipment and Vehicle Management

IoT simplifies military logistics by embedding sensors in vehicles and equipment. These devices track parameters like location, fuel efficiency, and mechanical health, allowing for proactive maintenance and efficient resource management.

5. Advanced Training with AR/VR

Virtual and augmented reality environments, supported by IoT, enable realistic training simulations. These systems use historical data to create scenarios that evaluate trainees' emotional and physical responses, helping commanders refine training strategies.

The Backbone of Military IoT

The deployment of IoT relies on robust infrastructure, including:

- **Data Centers:** Hosting critical applications and storing vast amounts of data.

- **Internet Backbone:** High-speed fiber optic networks connecting users and systems globally.

IoT is bridging the physical and digital worlds, shrinking distances while enhancing responsiveness and intelligence across all sectors, particularly defense.

Omnetics' Contribution to Military IoT

Omnetics Connector Corporation plays a pivotal role in advancing IoT for military applications. By designing and manufacturing ruggedized, micro-miniature connectors, Omnetics ensures the seamless integration of power and data within compact systems. Its connectors meet stringent Mil-Spec standards, ensuring durability and reliability in critical operations.

With the demand for IoT-driven solutions surging, Omnetics continues to support military innovation, driving the future of defense with its specialized connector technology.

SMITHS INTERCONNECT

SUPPORTS SENTINEL-1C SATELLITE FOR EARTH OBSERVATION

1. Smiths Interconnect's Role:

Smiths Interconnect provided essential components for the Sentinel-1C satellite, enabling its advanced environmental monitoring capabilities.

2. About Sentinel-1C and Copernicus:

Sentinel-1C is part of the Copernicus Programme, the EU's leading Earth observation initiative, which delivers data to protect the environment, public safety, and boost the economy.

3. Addressing Global Challenges:

The satellite will supply crucial data to combat climate change, respond to natural disasters, and improve maritime safety.

4. Innovative Technology:

Equipped with advanced radar and ship-tracking technology, Sentinel-1C operates 24/7, detecting environmental changes and illegal maritime activities in any weather.

Smiths Interconnect, a global leader in advanced connectivity solutions, is proud to announce its contribution to the Sentinel-1C satellite, the third in the Sentinel-1 mission. Launched into orbit aboard the Vega-C rocket on 5 December 2024, the satellite is already providing valuable data to support environmental studies and disaster response efforts.

Within a week of its launch, Sentinel-1C delivered its first radar images of earth. These initial images feature regions such as Svalbard in Norway, the Netherlands and Belgium, showcasing its ability to collect critical data for environmental monitoring.

Sentinel-1C is part of the Copernicus Programme, the Earth Observation (EO) component of the European Union's Space Programme. Managed by the European Commission and supported by

the European Space Agency (ESA), the programme delivers data to tackle environmental challenges and enhance disaster response efforts.

"We are thrilled to play a vital role in the Sentinel-1 mission by supplying cutting-edge connectivity solutions," said Julian Fagge, President at Smiths Interconnect. "Our hyperboloid and spring probe solutions, along with our circulators, are designed to withstand the harsh conditions of space and ensure consistent performance. We congratulate Thales Alenia Space and wish them every success in the Copernicus Programme that provides critical data for environmental and humanitarian applications."

The satellite will enhance the Copernicus Programme by providing long-term data to monitor issues such as landslides, earthquakes, volcanic activity, deforestation, and polar ice changes. It will also play a key role in water resource management and emergency response during natural disasters.

Working with its sister satellite Sentinel-1A, launched in 2014, Sentinel-1C will pass over specific points on Earth every five days. Unlike satellites that use optical systems, Sentinel-1C's radar can gather information in all weather conditions and during both day and night.

An important new feature onboard Sentinel-1C is the Automatic Identification System (AIS), which helps improve maritime safety by tracking ships and monitoring illegal activities, such as dumping pollutants into the ocean.

Smiths Interconnect worked with Thales Alenia Space, the company leading the Sentinel-1 mission on behalf of ESA, to provide key components for Sentinel-1C. These components were essential to the satellite's performance and the success of its mission.

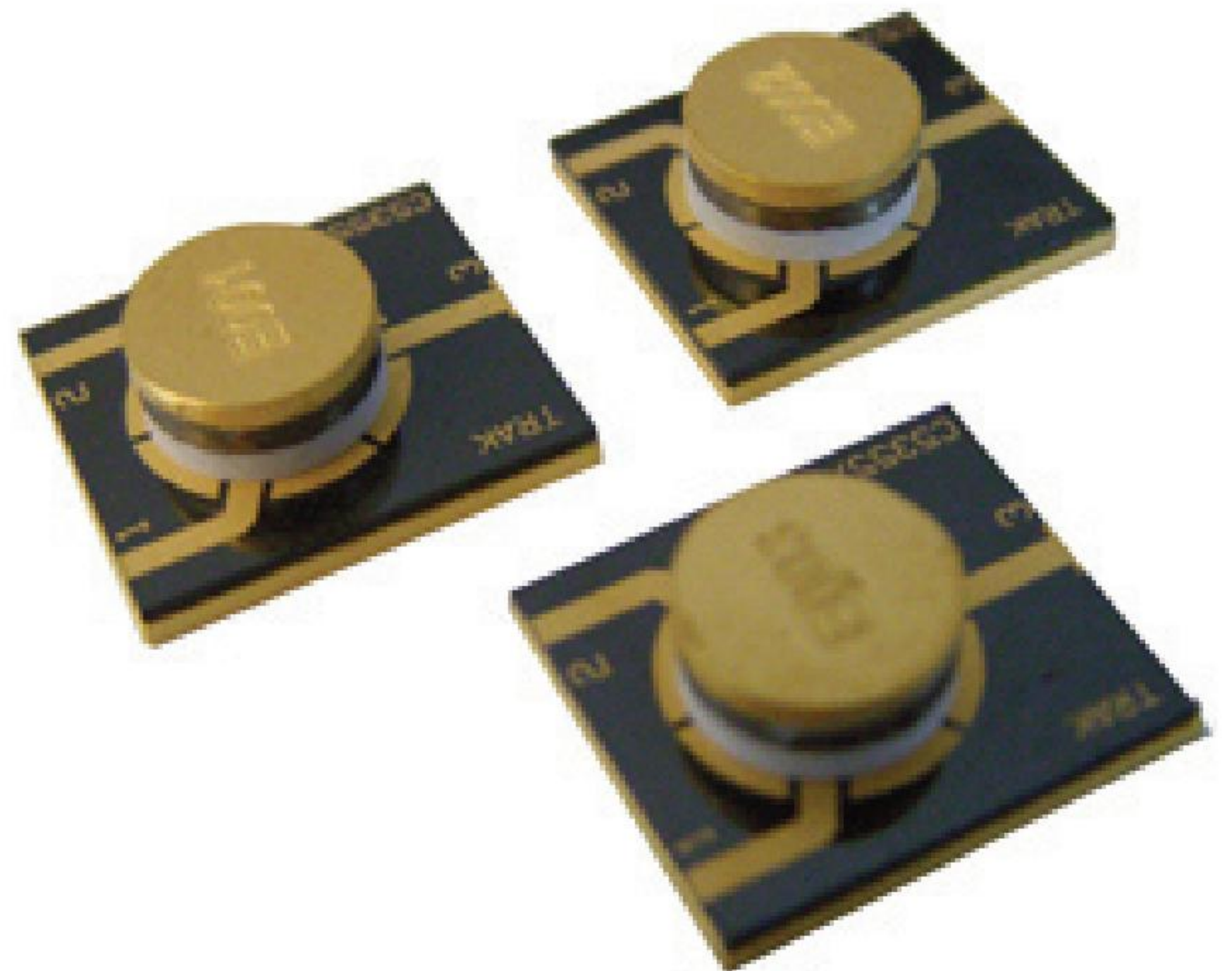
1. Hyperboloid Contact Technology PCB Connectors (CSD series) that offer unmatched reliability and durability, making them ideal for demanding space environments and Spring **Probe Interposers** that provide excellent signal integrity and mechanical resilience and improve miniaturization allowing removal of cable

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PCB Connectors CSD Series



Microwave Circulators



harnessing inside the system. Both solutions play a key role in the radar transmission systems to track and transmit the satellite position.

2. Microwave Circulators: Integral to the satellite's SAR payload, the circulators facilitate efficient energy transfer between the Transmit-Receive Module (TRM) and the antenna combiner. They also ensure accurate signal routing from the antenna to the TRM receiver for seamless operation.

The Sentinel-1 satellite is poised to enhance global understanding of environmental changes, support disaster management, and advance scientific research. Smiths Interconnect's advanced solutions underline its commitment to innovation and reliability in space applications.

Spring Probe Interposers



www.smithsinterconnect.com

smiths interconnect

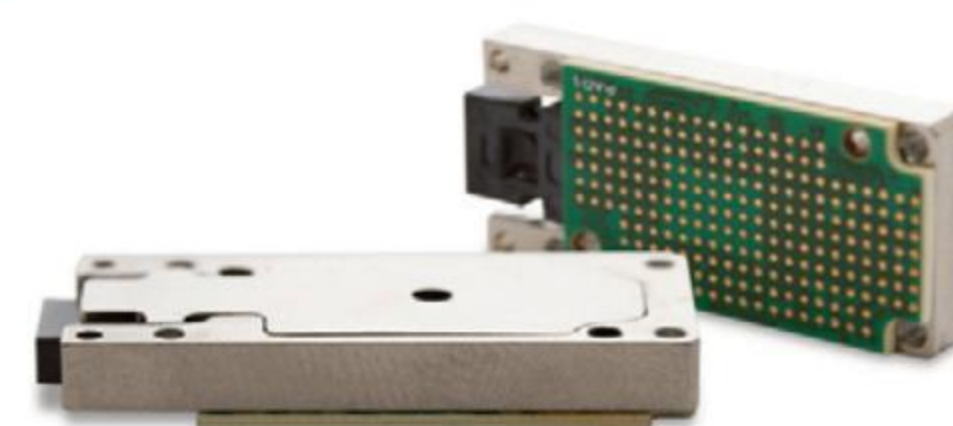


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Enhancing Defense Operations with The Will-Burt Company's Elevation Solutions

The Will-Burt Company stands as a global leader in integrated elevation solutions, delivering reliable and mission-critical systems that support defense operations worldwide. Our cutting-edge technologies are integral to defense applications, ensuring precision, adaptability, and effectiveness in the field.

Notably, Will-Burt's integrated elevation solutions play a vital role in high-profile defense systems, such as the Diehl Defense IRIS-T surface-to-air missile system and the renowned Patriot Missile System. These solutions enable advanced radar, communication, and targeting systems to perform optimally, ensuring superior operational readiness and situational awareness in dynamic environments.



Main Photo: Diehl Defense GMBH & Co. KG

For over a century, The Will-Burt Company has been committed to engineering excellence, serving defense forces globally with customizable, ruggedized solutions designed to meet the demands of modern defense strategies. As the world's premier manufacturer of mobile telescoping masts, towers, trailer systems, and pan and tilt positioners, Will-Burt offers virtually every mobile payload elevation solution to the market along with full integration services.

Discover how Will-Burt's innovations continue to safeguard and empower defense missions at IDEX 2025 in stand # 02-A44.

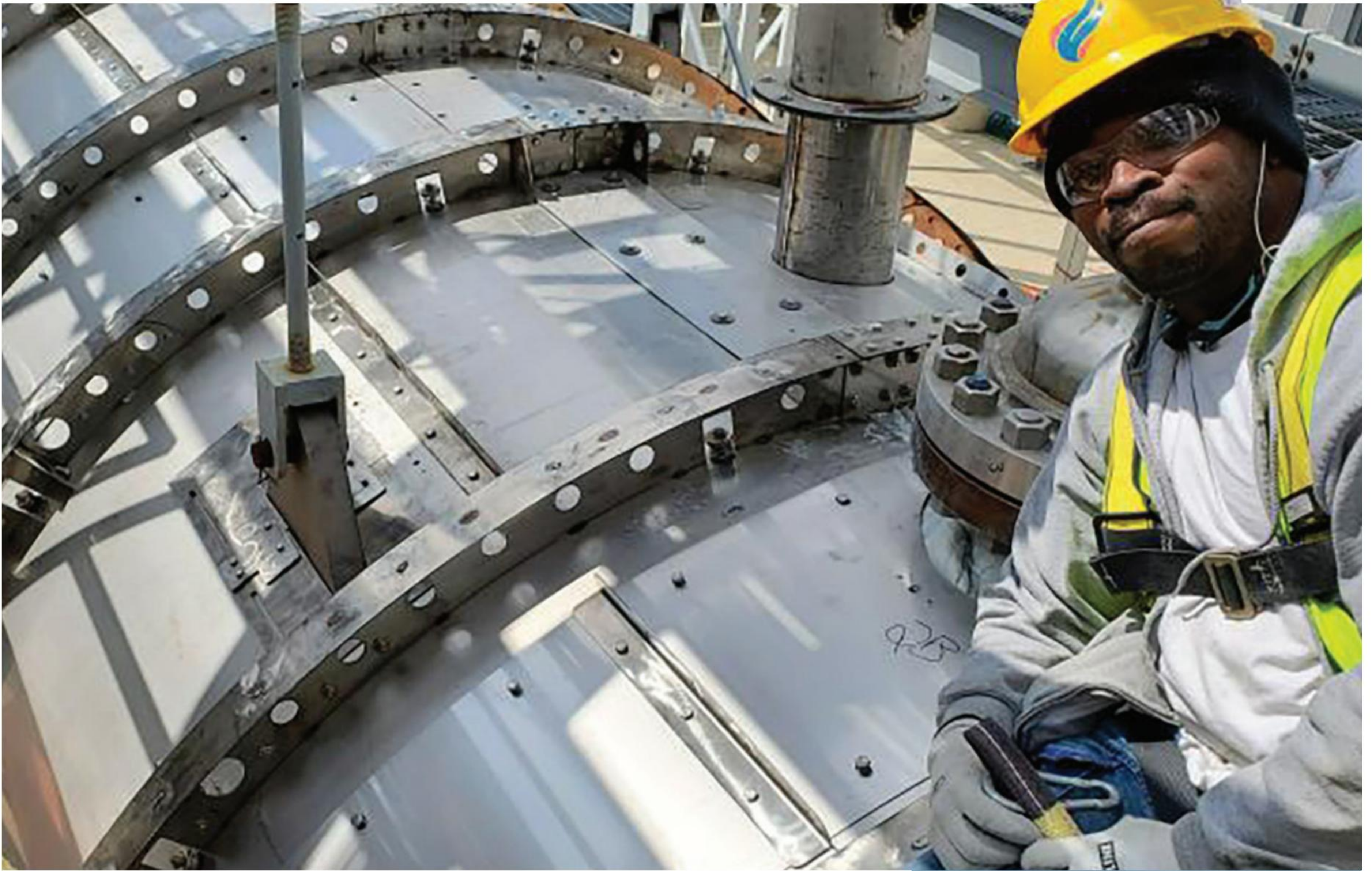


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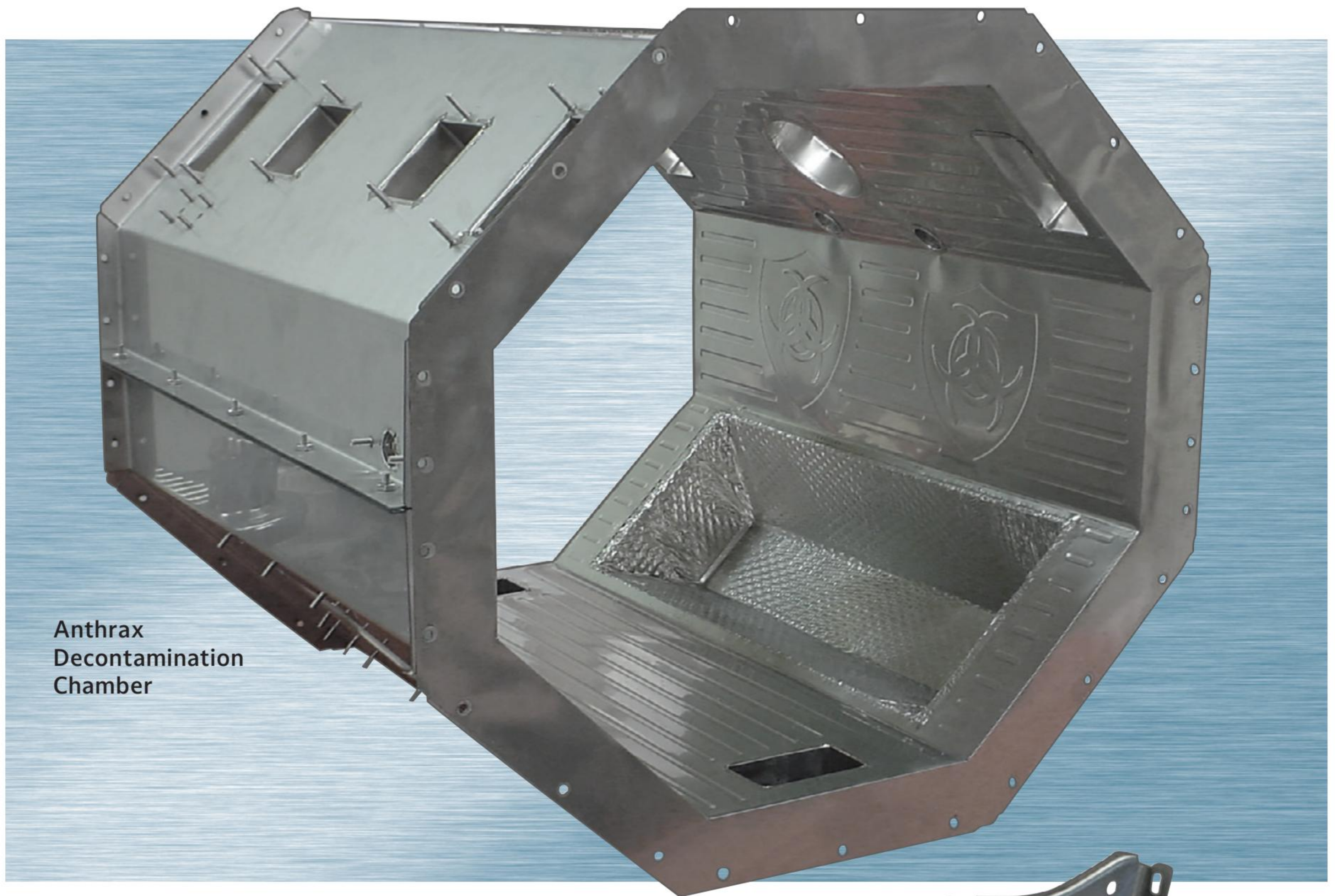
ThermoDyne Engineered Systems: Solving the Toughest Thermal Challenges in Defense.

ThermoDyne specializes in solving complex thermal management problems for the defense industry, with customized large-scale solutions deployed on platforms for the most demanding defense applications, spanning naval, ground, air, and space.

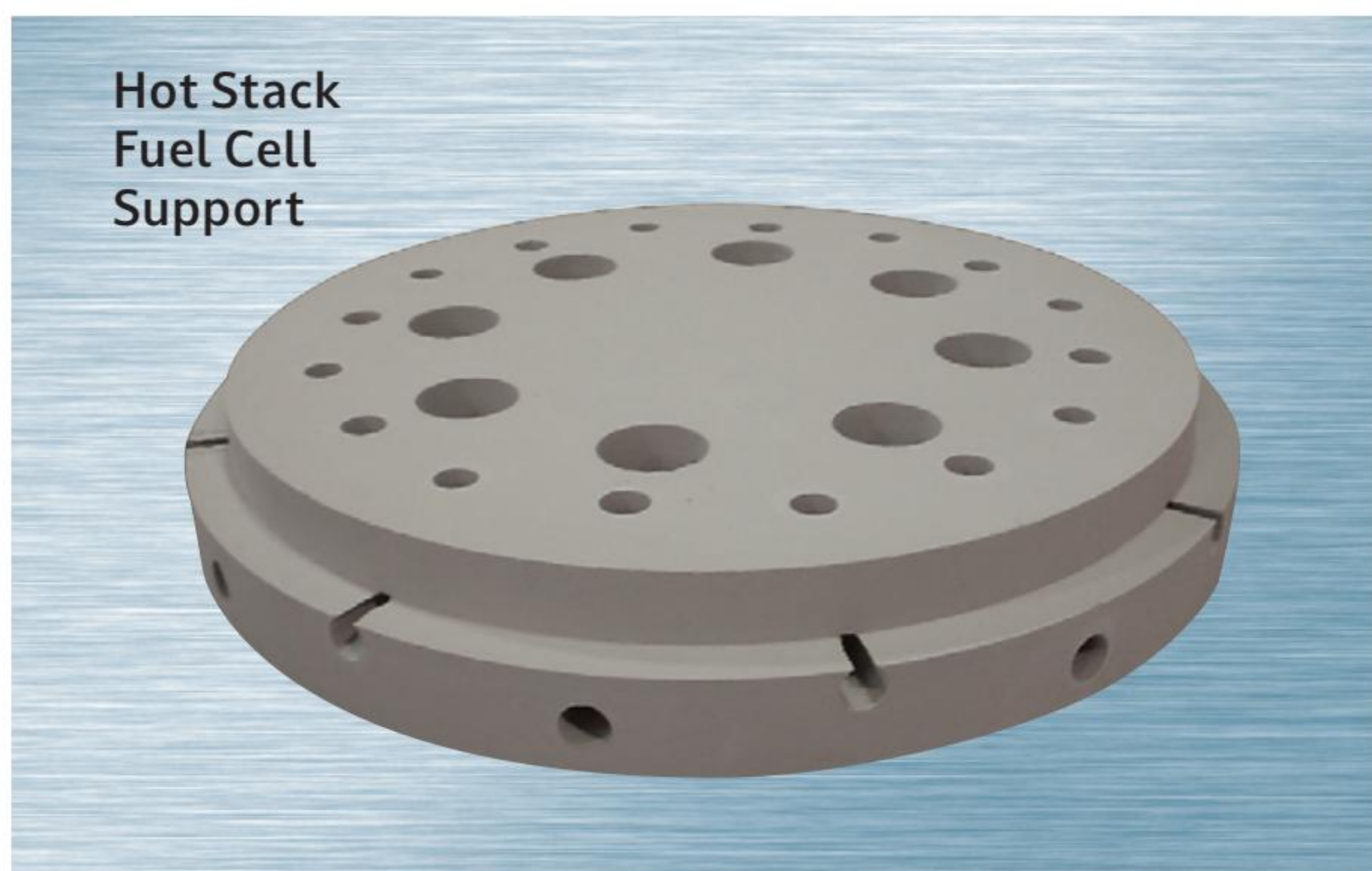
ThermoDyne engineers and produces specialized, SWaP-C optimized thermal solutions in-house. Our advanced microporous insulation minimizes heat transfer in demanding applications, using high-temperature alloys and advanced polymers to meet your specific needs. Trust ThermoDyne for peak performance and survivability.



Thermal
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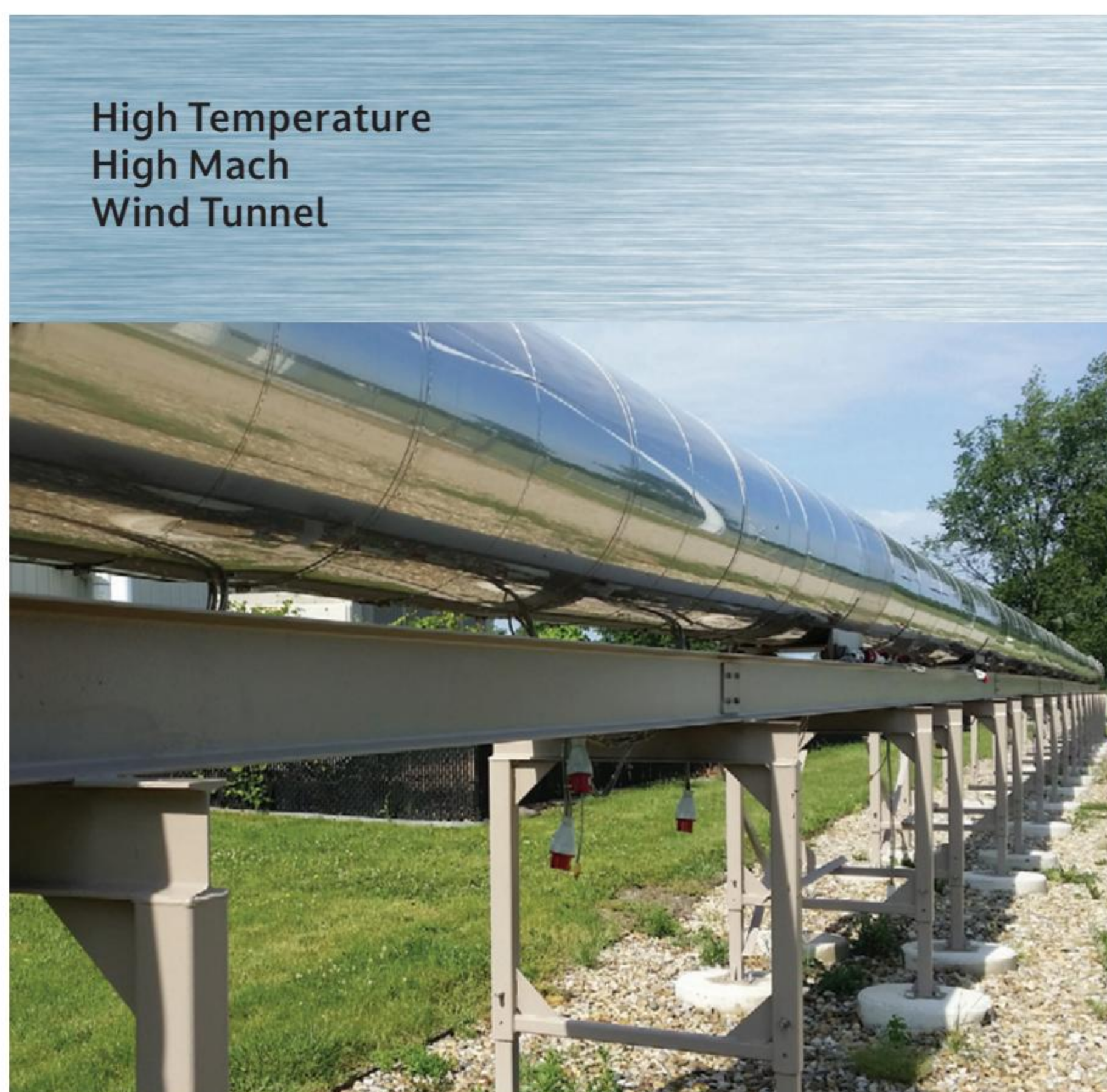
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Powering the Mission:

Reliable Energy for Military Operations

Imagine this, on a cold, windswept plateau, a mobile command center hums quietly, its lights cutting through the darkness. Soldiers inside monitor screens displaying mission-critical data, their every decision relying on the uninterrupted flow of energy.

Outside, temperatures plummet below freezing, and the biting wind threatens to sap the life out of every piece of equipment. Yet, the generators powering the operation don't falter. This is the world where failure isn't an option, and this is where our products excel.

Military operations, whether deep in the desert or amidst a humanitarian crisis in a flood-stricken city, demand energy solutions that can withstand extreme conditions. These solutions aren't just a convenience—they are the backbone of success. At Svenska Kraftprodukter, we understand this reality. Every generator we provide is a promise to the forces that depend on them: our products will keep you powered, no matter the challenge.

Energy as the Unsung Hero of Military Success

Imagine a field hospital set up within hours in the aftermath of a natural disaster. Doctors work tirelessly to save lives, relying on advanced medical equipment powered by a steady stream of electricity. Nearby, communication teams coordinate rescue efforts, connecting relief workers across the region. The common denominator? Reliable power that doesn't give up when lives are on the line.

In modern military operations, this scenario is not unusual. The ability

to power equipment and maintain connectivity is as critical as the soldiers and tools in the field. Yet, energy systems often work quietly in the background, their importance fully appreciated only when they falter.

This is why we have dedicated ourselves to providing energy solutions that never quit. Our generators don't just provide electricity; they provide assurance. Whether it's a radar system scanning the skies or a soldier charging their communication device, we ensure the mission moves forward, uninterrupted.

Adapting to Unforgiving Environments

Military missions rarely take place in comfortable environments. Instead, they unfold in deserts where heat sears equipment, or in rain-soaked jungles where humidity seeps into every crevice. It's here, in these harsh and unpredictable conditions, that our generators prove their worth.

Take, for instance, a surveillance operation deep in an arid desert. Dust swirls in the air, temperatures soar past 50°C, and operational demands are relentless. Our generators are built to handle such extremes. Durable materials, advanced engineering, and a relentless focus on reliability ensure they function without a hitch.

In another scenario, a flood-stricken region requires urgent humanitarian aid. Rescue teams need power for water purification systems, floodlights, and communication networks. Our portable and efficient generators are designed for rapid deployment, ensuring help reaches those in need without delay.

Quiet Power, Big Impact

Stealth is often as important as strength. A generator roaring in the background could betray the location of a unit or disrupt critical operations requiring silence. That's why our generators are designed with noise-reduction technology.

Picture a reconnaissance team stationed in a forest, gathering intelligence. They rely on power for surveillance equipment, but their success depends on remaining undetected. Our generators hum



quietly, providing the energy they need without revealing their position. Quiet power, with a significant impact—this is the difference we bring.

The Global Stage: Where Needs and Innovation Meet

Events like the International Defence Exhibition and Conference (IDEX) shine a spotlight on the latest innovations in defence technology. Governments, military leaders, and industry experts converge to discuss how to meet the ever-growing demands of security and defence.

While Svenska Kraftprodukter is not physically present at IDEX, the themes it explores—efficiency, reliability, adaptability—are deeply embedded in our DNA. The challenges discussed at IDEX are the same ones we are solving on a day to day basis: how to deliver power that can keep up with the pace of modern military operations.

IDEX serves as a reminder of the critical role reliable energy plays in defence and our products reflect the same forward-thinking spirit celebrated on the global stage.

Supporting Every Mission, Anywhere

From tactical operations to humanitarian missions, our generators are more than tools—they're enablers. Imagine a disaster relief operation where power is needed to light up temporary shelters, run water purification systems, and connect aid workers. In such moments, our generators aren't just powering equipment—they're powering hope.

In military operations, our energy systems act as silent allies, ensuring that troops have what they need to succeed. Whether it's a long-range communication station or a field workshop repairing mission-critical equipment, Svenska Kraftprodukter help to provide the backbone that keeps it all running.

Looking to the Future

As global security challenges evolve, so does the demand for smarter,

more reliable energy systems. At Svenska Kraftprodukter, we're not just keeping pace with these changes—we're leading the charge. By listening to the needs of our partners, we're shaping the future of military energy solutions.

While IDEX captures the world's attention this year, our commitment to delivering excellence remains steadfast. We may not be on the exhibition floor, but our impact resonates in every mission where reliable power makes the difference.

Conclusion: Empowering the Mission

In the field, there are no second chances. Power must flow, systems must run, and missions must succeed. Svenska Kraftprodukter stands as a reliable partner, delivering energy solutions that empower military forces to achieve their objectives, no matter how challenging the circumstances.

From powering command centers in the desert to supporting humanitarian efforts in disaster zones, our generators are more than machines—they're the heartbeat of every mission. As we look to the future, we remain driven by a singular goal: to provide energy solutions that make a difference, ensuring success on every front.

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Svenska
Kraftprodukter

SIMULATING & GEOLOCATING ENEMY JAMMING FOR TRAINING & WARGAMING

NATO military units generally lack independent capabilities for detecting and analyzing enemy jamming for Intelligence Preparation of the Battlespace (IPB). Instead, this capability is mostly centralized or supported by specialized units or agencies.

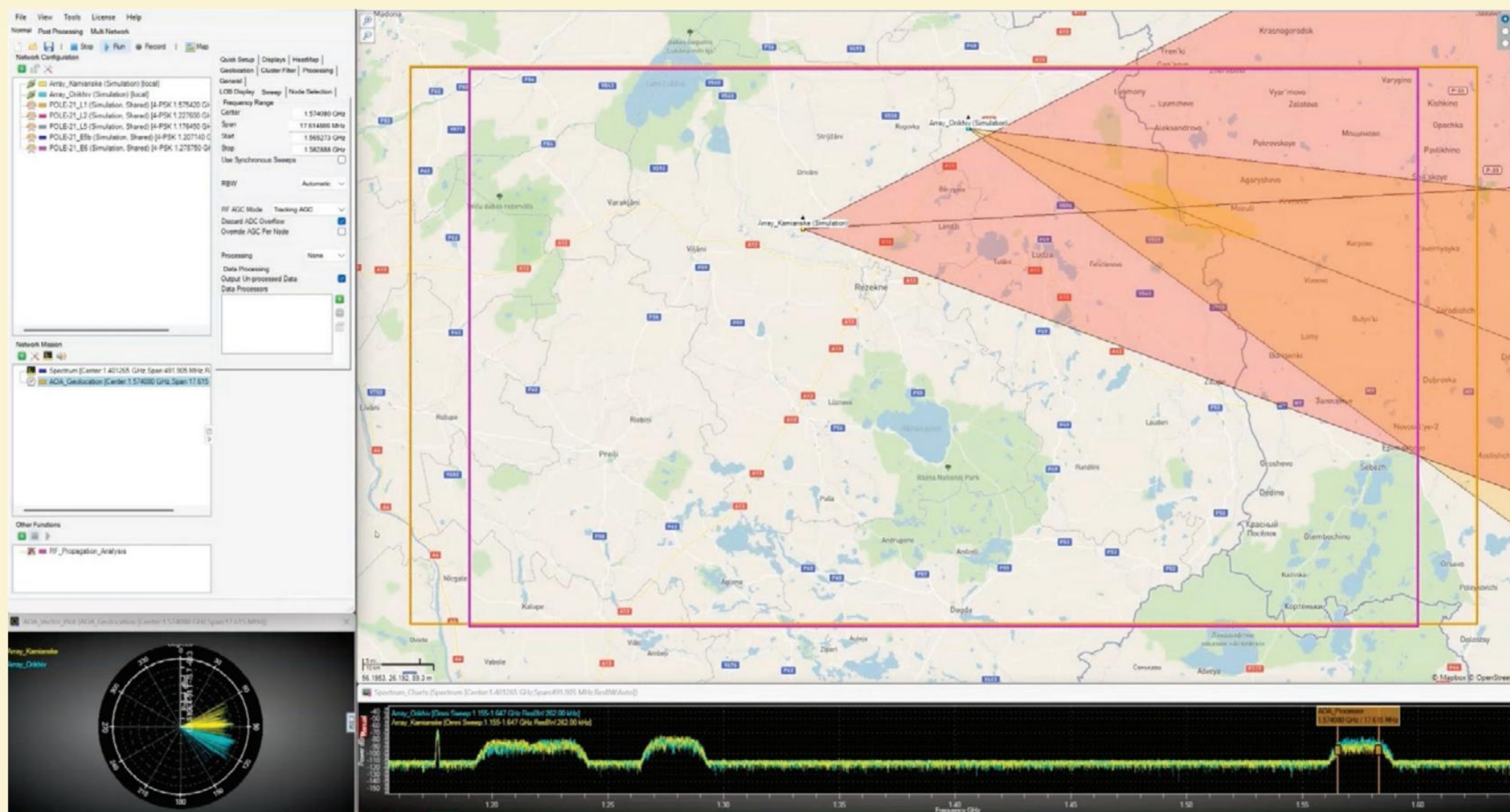
The agency responsible depends on the operational command structure and whether the intelligence needed is tactical, operational, or strategic. Outsourcing creates complexity, increases response time, and increases the number of people with access to sensitive information.

During a conflict, it is beneficial for planners to have real-time information on the location of the most significant source of jamming to mitigate the impact of disrupted communications.

By simulating multiple jamming sources and geolocating high-power transmitters during training and wargaming scenarios, commanders can better understand enemy capabilities, anticipate potential courses of action, and assess how environmental factors may affect operations.

The capability is also helpful in training situations for comms planners, who must decide on the optimal location for transmitters and manage frequencies for all organizational levels of a battlegroup.

In real-world scenarios, commanders can corroborate RF data with intelligence from multiple sources, such as satellite imagery. For example, an image of a suspected high-power jammer, which is confirmed to be emitting at a specific frequency, and located at a precise latitude and longitude, provides actionable, robust intelligence far greater than the sum of its parts.



⚡ HOW TO SIMULATE ENEMY EW EFFECTS IN RFEYE SITE

<https://bit.ly/Simulate-RFEye-Site>

In the video simulation (link above), the hypothetical environment is in the Baltic region in Latvia. Suspected red forces are operating in the area, and blue forces are positioned to the west. Multiple electronic warfare installations are jamming signals across the L1, L2, L5, and E bands, denying access to several GNSS networks. The simulation uses two RFEYE Arrays to demonstrate how to geolocate these high-power transmitters and analyze their effects.



EXTRAORDINARY
RF TECHNOLOGY

CONFIGURING TARGET FREQUENCIES

Before the simulation, CRFS RF engineers configured the target signals transmitted by red force jammers. These configurations involved identifying the relevant bands (e.g., L1, L2, L5, E6) based on anticipated enemy activity and operational intelligence. The parameters for these signals—the power levels, waveform, and modulation types—were input into the simulation software based on the known parameters of known electronic warfare installations. Additionally, the engineers virtually placed the jammers within the simulated environment.

GEOLOCATING ENEMY JAMMING

STEP 1: GEOLOCATE HIGH-POWER TRANSMITTERS

- **Initiate spectrum analysis:** Run the spectrum and enable the Angle of Arrival (AoA) method to detect the sources of high-power transmissions. Users can also use a hybrid method by overlaying the highly accurate Time Difference on Arrival (TDoA) technique.
- **Locate L1 jamming:** Highlight on the spectrum the first signal in the L band. The geolocation reveals the indicated likely position of a suspected high-power jammer, represented as a diamond icon on the map.
- **Locate E6 band jamming:** Shift the search parameters to detect E6 band jamming (Galileo jamming). Geolocation results show intersecting crosses on the map, indicating the likely location of the jammer.
- **Locate L2 jamming:** Adjust the search parameters to locate L2 jamming. The map highlights the transmitter's likely precise location.
- **Locate E5B jamming:** The scan continues to identify jamming in the E5B band (a Galileo signal). Users can mark the assumed location of the new jammer on the map.
- **Locate L5 jamming:** Finally, detect and geolocate jamming on the L5 GPS band.

STEP 2: ENABLE PROPAGATION ANALYSIS

- **Input parameters:** Input the locations and parameters of the geolocated transmitter into RFeye Site Simulator.
- **Run RF propagation analysis:** The software calculates and visualizes the strength of each jamming signal and represents this as a heatmap.
- **Interpret heat map:** The heat map overlay indicates areas with higher and lower jamming intensity. Bright regions represent the strongest signals, while gaps show areas of reduced interference.
- **Assess decibel levels:** Use the on-screen tools to hover over areas and read decibel levels, identifying the jammer's strength.



STEP 3: CARRY OUT AN IPB

- **Analyze comms survivability:** Use the heat map to determine areas with low communication survivability and identify optimal corridors for friendly transmitters or drone paths.
- **Evaluate interference:** Assess the impact of jamming power levels. For example, a lower decibel level might indicate a Controlled Radiation Pattern Antenna (CRPA) could be effective. Operators can also establish the interference level at which different types of GNSS antennas can survive.
- **Plan countermeasures:** Based on the jammer type and power levels, explore solutions such as relocating communications to less affected areas.

CONCLUSION

Using the highly configurable RFeye Site to simulate and geolocate enemy jammers provides military planners and commanders with a practical tool for evaluating enemy capabilities and planning for real-world scenarios. The software allows users to practice the first three stages of the OODA loop.

Users can define transmitters and power levels and see how they are affected by topography to gain critical spectrum insights and ascertain electronic warfare's operational impact.

Applied to real-world contexts, this capability will allow individual units to gather their own real-time RF data to carry out robust IPB, protect critical comms and PNT systems, and neutralize RF jamming systems—without relying on outside agencies.



CRFS is an RF technology specialist for defense, national security agencies and systems integration partners. We provide advanced capabilities for real-time spectrum monitoring, situational awareness and electronic warfare support to help our customers understand and exploit the electromagnetic environment.



www.crfs.com



RFEYE SITE SIMULATOR

POWERFUL RF SIMULATION SOFTWARE FOR RF TRAINING & WARGAMING

RFeye Site Simulator provides EW operators with the same capabilities but employs simulated RF sensors. This powerful tool can be used for teaching spectrum operations and conducting wargames, allowing EMSO professionals to simulate scenarios and resolve tactical problems.



CRFS

**EXTRAORDINARY
RF TECHNOLOGY**

TAKING MILITARY MOBILITY TO THE SKY

ADVANCING THE ROLE OF THE HELICOPTER

Whether in fast moving combat operations, or in peacekeeping missions, the construction of conventional runways and landing zones is challenging for multiple reasons, including the time and labour consumed, safety issues, and various environmental factors.

Rotary wing aircraft can often be called on to land in harsh settings, remaining vulnerable to foreign object damage from dust and stones, which can cause potentially irreparable damage. Designed to suppress debris and alleviate brown out to clear out a safe landing area for forward operating and vertical take-off and landing (VTOL) aircraft, FAUN Trackway Limited's Helicopter Landing Mat promotes the occurrence of ground effect as it provides a smooth and hard surface for landing. This is crucial as the interference of airflow induced by such a surface increases pressure as opposed to flow dissipation or 'baffling' which can be caused by surfaces that do not provide this function.

The PSA Flat Top Trackway® is a lightweight modular system that locks together to form a solid yet flexible foundation for helicopter operations.



INNOVATIONS

IN MORTAR TECHNOLOGY FOR NEXT GENERATION WARFARE

With increasingly complex operational environment, military forces are faced with hybrid threats that blend conventional and irregular tactics.

To effectively counter these challenges, there is a growing need for adaptable, efficient, and highly lethal systems. Mortar systems, as a cornerstone of artillery and fire support, have advanced to meet these evolving demands, offering commanders enhanced capabilities that integrate speed, precision, and operational flexibility. This led to the development of the 120mm Ground Deployed Advanced Mortar System (GDAMS), a next-generation solution engineered to deliver precise indirect fire while enhancing the agility and survivability of ground forces.

The 120mm GDAMS, developed by ST Engineering, marks a crucial leap in mortar technology. This system builds on the proven capabilities of legacy mortars, such as the 81mm and 120mm mortars, while integrating cutting-edge technology and advanced design principles. With a focus on modularity, speed, and lethality, the GDAMS addresses modern operational challenges, from rapid deployment and operational readiness to precision targeting and force protection.

The Evolution of Mortar Systems: From Legacy to the Future

Historically, mortars have provided essential indirect fire support,

enabling forces to engage targets concealed behind obstacles or at long ranges without a direct line of sight. The shift from older systems like the 81mm mortar and 120mm mortar to the 120mm GDAMS reflects the need for more accurate, and flexible platforms that engage a wider range of targets in diverse environments. This transition aligns with the broader trend towards more vehicle-agnostic, rapidly deployable mortar systems, supporting operations across multiple warfare domains.

The 120mm GDAMS is a key development in this regard. Its ability to integrate with a range of commercial and military vehicles, combined with its lightweight yet durable construction, makes it adaptable to varying operational requirements. GDAMS enables forces to suppress enemy positions, neutralise threats in hard-to-reach areas, and deliver effective counter-battery fire against hostile artillery.

The partnership between ST Engineering and Babcock, a leader in systems integration, enhances GDAMS' capabilities. Built in the UK, the GDAMS represents the first 120mm mortar system to be manufactured in decades, marking a significant industrial and operational milestone. This collaboration enables ST Engineering to offer a complete, end-to-end solution for GDAMS, including design, manufacturing, operational support, and training. UK-based production ensures regional availability, operational readiness, and sustainability for military forces across Europe and beyond.

Rapid Deployment and Tactical Advantage

In modern warfare, speed and flexibility are crucial. GDAMS is designed to meet these demands, offering rapid deployment and operational responsiveness across battlefield scenarios. Whether mounted on a 4x4



military vehicle or a lightweight commercial vehicle, the system offers maximum flexibility for commanders, enabling quick adaptation to rapidly changing conditions.

The GDAMS features a modular barrel design that supports both 81mm and 120mm munitions, ensuring compatibility with legacy systems while delivering the enhanced firepower and performance of next-generation platforms. Its elevating angle, ranging from +45 to +80 degrees, and ± 90 -degree traverse allow it to engage targets at different angles, making it effective in offensive and defensive operations.

The system can be deployed and operational in 15 seconds, providing a rapid response to emerging threats. This ability to shoot and scoot—fire and reposition quickly—ensures the system remains mobile, a key advantage in modern combat where counter-battery fire and enemy detection are constant threats. GDAMS can stow just as quickly, ensuring that crews stay mobile and avoid being targeted after firing. This flexibility significantly enhances operational tempo, allowing forces to maintain the initiative in fast-paced engagements.

Crewed by just two personnel, the GDAMS reduces manpower requirements compared to traditional mortar systems. This streamlined configuration helps ease logistical burdens while maintaining the necessary firepower to accomplish mission objectives.

Precision and Integration: Enhancing Lethality and Minimising Collateral Damage

The 120mm GDAMS integrates advanced fire control systems and GPS-guided munitions for unmatched precision on the battlefield.

With real-time data sharing via command-and-control networks, GDAMS enables pinpoint strikes on high-value targets while minimising risks to non-combatants and friendly forces. This precision is crucial in manoeuvre warfare, where timely target destruction can decisively impact engagements.

Its integration with networked systems further enhances effectiveness in the digital battlefield, allowing GDAMS to rapidly identify, track, and engage targets with exceptional accuracy. This synchronisation supports collaborative targeting and faster decision-making, ensuring seamless integration into modern joint operations.

Safety and Survivability: Protecting the Crew and Enhancing Operational Sustainability

While the 120mm GDAMS delivers high lethality and precision, it also prioritises the safety of its crew—an essential consideration in high-intensity combat scenarios. A standout feature of the system is its

patented blast diffuser technology, which significantly improves crew protection during operations. This innovative system channels combustion gases from the firing process into a series of chambers, diverting them away from the crew and reducing the risk of injury caused by pressure and gas build-up.

The patented blast diffuser protects personnel and reduces the system's noise signature, making it less detectable by enemy forces. This capability is particularly valuable in counter-battery operations, where minimising the noise generated by artillery is critical to avoiding detection and retaliation. By reducing noise and gas exposure, GDAMS enhances operational survivability and crew well-being, allowing units to operate effectively under high-intensity conditions.

GDAMS in Tomorrow's Battlefield

The 120mm GDAMS marks a major advancement in mortar technology, offering a highly adaptable, high-performance solution for modern military operations. As armed forces shift towards more mobile, flexible, and precision-focused capabilities, GDAMS plays a crucial role in supporting manoeuvre warfare, countering hybrid threats, and ensuring rapid responses to emerging battlefield conditions.

With its precision, mobility, and modularity, GDAMS enables forces to modernise without replacing legacy systems. Its integration with advanced fire control technology ensures it remains at the forefront of battlefield capabilities. As defence needs evolve, GDAMS delivers the agility, adaptability, and lethality necessary to stay ahead of future threats, ensuring forces remain prepared in an unpredictable world.

www.stengg.com/en/defence/land



Ground Deployed Advanced Mortar System (GDAMS)



 **ST Engineering**



NEXT GEN INDIRECT FIRES

The Ground Deployed Advanced Mortar System(GDAMS) is a lightweight digitalised mortar system with patented blast diffuser technology. Engineered for rapid deployment and modular compatibility for the modern battlefield.

Key Features

- Suitable for integration with any lightweight commercial vehicle or 4x4 military-class wheeled vehicle
- Patented blast diffuser reduces noise exposure by threefold and decrease enemy detection
- Rapid deployment in under 15 seconds for enhanced survivability
- Operated by a two-person crew, maximising operational effectiveness and responsiveness



Learn more at
IDEX
Hall 4, Booth C20

 **ST Engineering**

WE WILL BE EXHIBITING AT IDEX - 17-21 FEBRUARY 2025 - STAND C6-008

RunFlat International is the leading independent runflat systems and military wheel supplier in the defence and security sector.



A complete range of wheels and runflat systems to suit all vehicle applications. When the RunFlat system is fitted, up to 100km can be achieved with deflated tyres following ballistic or terrain related damage.



Our products are well proven and regularly tested according to military standards such as FINABEL A.20.A (100km), as well as specific standards established by certain countries or manufacturers.



SHAPING THE FUTURE OF TACTICAL IDENTIFICATION

The Trilobyte Helmet Light

As global defense operations grow increasingly complex, the demand for reliable, user-centric technology has never been higher.



For decades, the VIPIR set the standard for Identification Friend or Foe (IFF) systems. Today, its successor, the Trilobyte Helmet Light (IFF) by Adventure Tactical Inc., is rewriting the playbook for tactical identification—and its adoption by one of the UAE Special Forces branches underscores its game-changing potential.

The modern battlefield leaves no room for error. In environments where split-second decisions can mean the difference between mission success and failure, the Trilobyte provides unparalleled reliability, durability, and safety. With a design informed by decades of experience, it delivers the precision that today's elite forces demand.

What Makes the Trilobyte a Game-Changer?

At its core, the Trilobyte embodies evolution and innovation. Building on VIPIR's long-standing legacy, the Trilobyte integrates patented advancements that set it apart in a crowded field. It ensures reliable, state-of-the-art identification capabilities, allowing operators to act with confidence, even in the most challenging conditions.



However, technology is only as effective as its usability. The Trilobyte's lightweight, ergonomic design speaks volumes about Adventure Tactical's deep understanding of the operator's needs. Seamless integration with modern soldier systems ensures that it becomes an extension of the operator, not a hindrance.

Furthermore, Adventure Tactical has addressed safety concerns with a forward-thinking design philosophy. By eliminating snag hazards and incorporating curved features, the Trilobyte minimizes risks during operations, reducing potential injuries and ensuring that soldiers can focus on their mission.

A Solution Endorsed by Experience

It's no small feat to gain the trust of elite forces. The UAE Special Forces, known for their rigorous standards, chose the Trilobyte after extensive testing. This wasn't a decision made lightly. Trials replicated the intensity and unpredictability of real-world scenarios, and the Trilobyte rose to the occasion. Its consistent performance and adaptability secured its place as their go-to IFF system.

This endorsement is a testament to Adventure Tactical's ethos: developing products that don't just meet requirements but redefine them. The company's commitment to training and ongoing support ensures that partners like the UAE Special Forces can deploy their solutions confidently and effectively.

See the Future of Defense at IDEX 2025

For those attending IDEX 2025, the Trilobyte represents more than just another piece of equipment—it's a vision of what the future of defense technology looks like. As part of the Future Soldier Program, the Trilobyte will be showcased at the IGG stand, giving attendees a firsthand look at its cutting-edge capabilities.

This is more than a demonstration; it's an opportunity to engage with the team behind the innovation. Visitors will witness how

the Trilobyte seamlessly integrates into a modern soldier's arsenal and learn why it has become the IFF of choice for Armed Forces worldwide.

Looking Ahead

In the world of defense, staying ahead of the curve isn't just about technological advancements—it's about a commitment to those who serve. The Trilobyte isn't just a product; it's a promise to equip operators with tools that enhance their safety, operational clarity, and effectiveness.

As the global defense community gathers at IDEX 2025, the Trilobyte's presence will serve as a reminder of what's possible when innovation meets operational need. Adventure Tactical Inc. stands at the forefront of this evolution, driving forward a legacy of excellence that continues to shape the future of tactical operations.

Let's not just imagine what's next—let's see it in action. Visit the IGG stand at IDEX 2025 and witness the Trilobyte's impact on the modern battlefield. Together, we're not just meeting the challenges of today but redefining what's possible for tomorrow.

www.adventuretactical.com



**UNMATCHED VERSATILITY,
FLEXIBILITY & TECHNOLOGY**

GM DEFENSE

OFFERS SNEAK PEEK OF ADVANCED MOBILITY SOLUTIONS FOR 2025

As defense and government spending remains pinched, global customers in these sectors have an opportunity to leverage billions of dollars' worth of commercial investments to support modernization efforts.

From efficient diesel engines to advanced battery and fuel cell-based solutions, commercial-based technologies from businesses like GM Defense, which have been developed, validated, and proven in the commercial market, offer significant value by potentially requiring less upfront investment compared to bespoke solutions. Customers also stand to gain a high level of reliability, quality, and performance, with the ability to scale quickly by leveraging advanced technologies from the commercial market.

Offering Next Generation Capabilities

GM Defense, a subsidiary of General Motors (GM), will be taking its wares on the road in 2025, starting with the International Defense Exhibition and Conference 2025 in Abu Dhabi. The business will showcase its newly introduced Next Generation Tactical Vehicle for the first time in the United Arab Emirates.



'Next Gen' is a diesel-powered solution featuring GM's advanced battery technology for energy storage, exportable power, and Silent Operations. Based on the Heavy-Duty Chevrolet Silverado, the rugged and durable Next Gen combines GM's 2.8L Duramax® Turbo-Diesel engine with a 100kWh battery pack that helps deliver fuel demand reduction. The drive motors for the front and rear axles enable Silent Drive and Silent Watch, making the vehicle hard to detect.

A game-changing mobility solution, the vehicle's diesel engine can charge the battery twice over, allowing the Next Gen to deliver increased range with extended mission duration. Between the internal combustion engine and battery pack, Next Gen offers 300 kWh of total available energy — enough to run tactical operations centers, maintenance points, and to support high-energy-demand sensors, Soldier kit, and much more.

Next Gen also offers active and passive safety features, including roll-over protection, anti-lock braking, electronic stability control, four-point seat belt harnesses, as well as 360-degree camera capabilities.

Increasing Agility in a Highly Customizable Solution

GM Defense's light and agile Infantry Squad Vehicle (ISV) continues to gain interest from global forces. Originally designed for rapid ground mobility to meet U.S. Army requirements, the ISV enables infantry units to position and re-position quickly, increasing their ability to support extended operations in the field.

Air transportable, the ISV leverages the ZR2 off-road variant of the Chevrolet Colorado and features 90 percent commercial-off-the-shelf parts. The proven solution includes Chevy Performance components for enhanced off-road capability. GM Defense will showcase its nine-passenger ISV troop carrier and its Infantry Utility Vehicle (IUV) at IDEX, positioning the solutions as leading contenders to help modernize light forces.

Similar in design to the ISV, the IUV seats up to five passengers with a standard NATO pallet cargo bed in the rear that supports modular mission equipment, such as mortars, counter-unmanned aircraft systems, and loitering munitions.



The ISV and IUV are highly customizable and are offered in different configurations, including a Protected Armor kit, CASEVAC kit, and Enclosure kit.

Integrating Advanced Technologies into Police Pursuit Vehicles

GM Defense leverages GM's commercial truck platforms, such as the Chevy Tahoe and Chevy Blazer, to offer Police Pursuit Vehicles (PPV). The vehicles are uniquely engineered to support the demanding rigors of law-enforcement and on-road patrol.

IDEX attendees will be able to see GM Defense's Tahoe PPV up close. The Tahoe PPV is powered by a 5.3L Ecotec3 V8 engine, producing 355 horsepower and 383 lb-ft of torque, and comes with a 10-speed transmission. The vehicle features a heavy-duty, police-rated brake system with 6-piston Brembo front calipers and StabiliTrak® Electronic Stability Control System with traction control.

The Tahoe PPV includes safety features, such as HD Rear Vision Camera, OnStar®-embedded hardware, Automatic Emergency Braking and Rear Park Assist. The vehicle offers surveillance mode interior and exterior lighting calibrations and steering wheel switches for emergency equipment. The PPV package is certified by the Michigan State Police and California Highway Patrol in their yearly testing.



Advancing Defense and Government Mobility

In addition to the mobility solutions above, the Suburban Shield is a next generation covert armored vehicle that provides protected VIP transport. While the vehicle will not make an appearance at IDEX, GM Defense will have these in the UAE region as the Qatar Armed Forces recently ordered the vehicles to replace legacy platforms in their fleet.

Based on GM's full-size pickup truck and sport utility vehicle architecture, the Suburban Shield features a unique body-on-frame chassis and suspension designed to support increased performance requirements, higher payload capacity, and greater gross vehicle weight over commercial-grade SUVs.

GM Defense also integrates protective armor into the original design, diverging from traditional practices which include disassembling a commercial vehicle and rebuilding it with added armoring. The business' ground-up approach provides improved quality and performance, while giving customers the sophistication and comfort expected of a GM vehicle.

Embracing modified commercial capability for global defense and government solutions is not just a strategic move, but a necessary one. These organizations will benefit from improved quality, reliability, and maneuverability from cutting-edge technologies and proven practices based on extensive R&D, validation, and testing.

To see some of these solutions up close, please visit GM Defense at **IDEX** from **February 17-21, 2025** at **booth 03-A09, Hall 3** or learn more at:

www.gmdefensellc.com



Piedrafita DEFPOWER's MILPDU:

POWER ELECTRONICS THAT GUARANTEES HIGH-TECH IN ARMoured VEHICLES

Electronic architecture is reinvented

The growing demand for electrical power in military vehicles, both in terms of total managed power and the number of consuming equipment, has made the electrical architecture a critical element in the design. Therefore, Piedrafita DEFPOWER has developed a wide portfolio of power distribution units (MILPDU); which represent a milestone in the technological evolution, replacing the obsolete relay and fuse boxes in high performance military vehicles.

The electronic architecture based on solid-state technology results in compact, lightweight and fully user-configurable power electronic units. Their mechanical behaviour, exceptional thermal efficiency, requiring no additional cooling, together with their low-profile electromagnetic compatibility (EMC), make them suitable to meet the most stringent

military certifications and ensure optimum performance even in the most demanding environments.

These devices, designed for power distribution in military vehicles, represent a significant leap forward in terms of efficiency, reliability and technological adaptability.

Deployed in key programmes: in-use programmes and technological adaptation

After more than two decades of service on Spanish Army vehicles, Piedrafita DEFPOWER MILPDUs continue to be a key element of flagship military programmes such as SIAC, EIMOS, M109 and VCR 8X8.

Their proven performance and ability to adapt to new technologies





make these power distribution units an attractive option for any vehicle or weapon system modernisation programme, such as new generation platform designs. Piedrafita Defpower's MILPDUs have established a new international state-of-the-art and have been selected by several leading vehicle manufacturers in Italy, France, United Kingdom, Czech Republic and the United States, where they are under evaluation within the US Army's Robotic Combat Vehicle programme.

The versatility of these devices extends even to unmanned vehicles, where they operate with equal success, demonstrating their competence in staying at the forefront of innovation in military electronics and their ability to adapt to the demands of the modern battlefield.

Fleet modernisation programmes: a comprehensive solution with military certifications.

One of the most outstanding features of Piedrafita DEFPOWER's MILPDUs is their ability to retrofit older generation vehicles efficiently and effectively. The elimination of traditional relay and fuse boxes in favour of solid-state technology not only reduces weight and size, but also improves reliability and survivability in highly demanding environments. Fully programmable switching logic and the ability to adapt to different voltage architectures make these devices an attractive option for a wide range of military applications.

Past and future come together in this family of devices, ready to connect to on-board power diagnostics and data acquisition systems, thanks to their ability to monitor and report on the vehicle communications bus. DEFPOWER's MILPDU devices bring new functionalities to vehicles and systems and are MIL-STD and Def Stan certified for defence, meeting the strict military requirements and standards that guarantee interoperability for the military and its ancillary industries.

Innovative technology for vehicles and systems operating in harsh environments

The electronic architecture in military vehicles has reached a new level of sophistication thanks to these militarised power distribution units from Piedrafita DEFPOWER, which provide the following advantages:

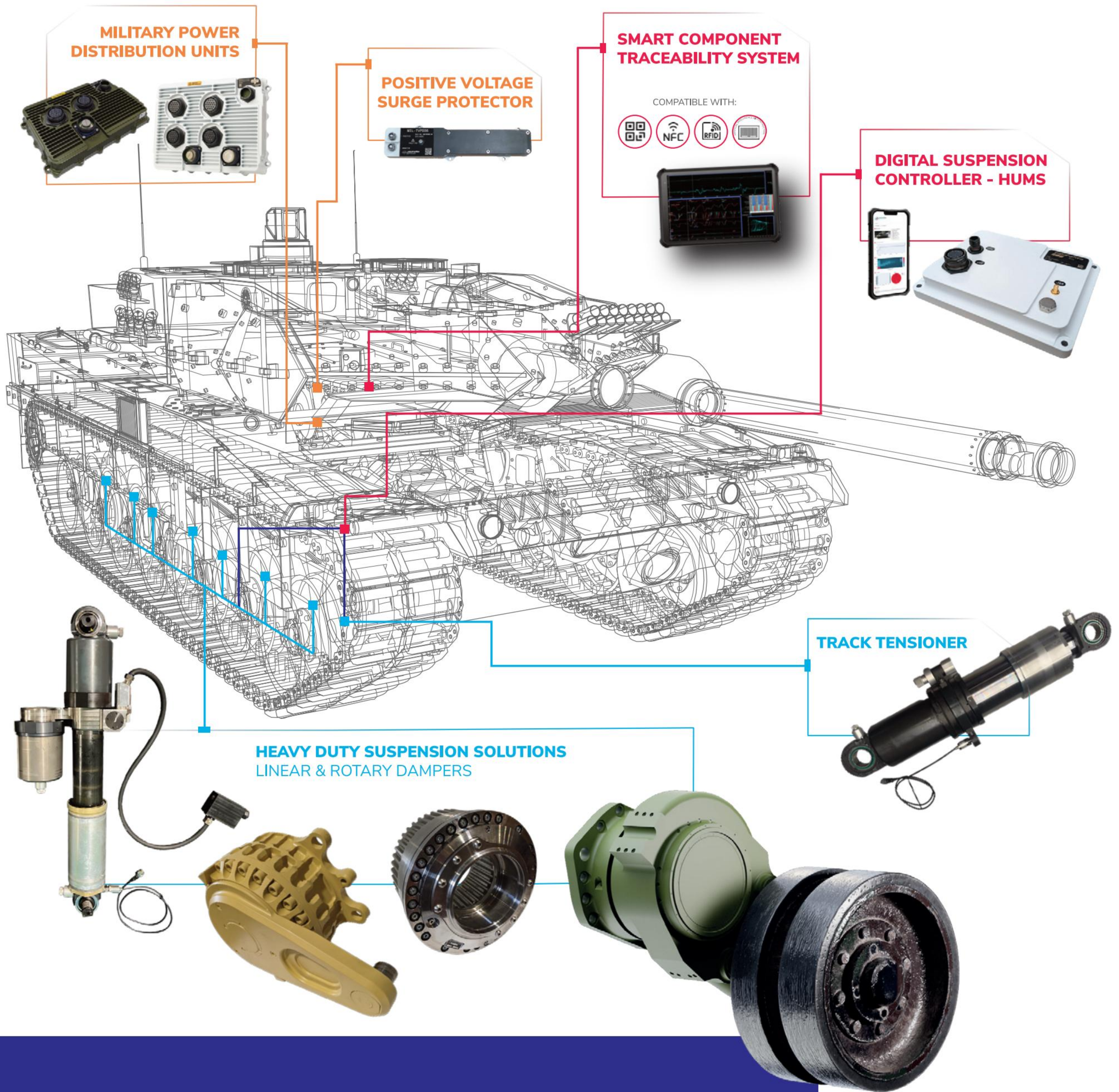
- **High reliability: the absence of mechanical parts considerably increases the reliability of the system.**
- **More compact size, offering easy integration into any vehicle architecture**
- **Adaptable to any low voltage architecture: 12 V - 24 V - 48 V**
- **Up to 12 kW of managed electrical power**
- **99% energy efficiency**
- **Status and consumption reporting to the vehicle's communications bus**
- **Versatility and ease of use by both the system designer and the end-user**
- **100% programmable logic. The programmability of the solutions allows for much more efficient logistics by allowing a single reference to be used in any vehicle.**
- **Military certifications: MIL-STD and Def Stan**

www.defpower.com





SOLUTIONS FOR HIGH MOBILITY VEHICLES



www.piedrafita.com



MILITARY POWER DISTRIBUTION UNITS
ENGINEERED TO POWER



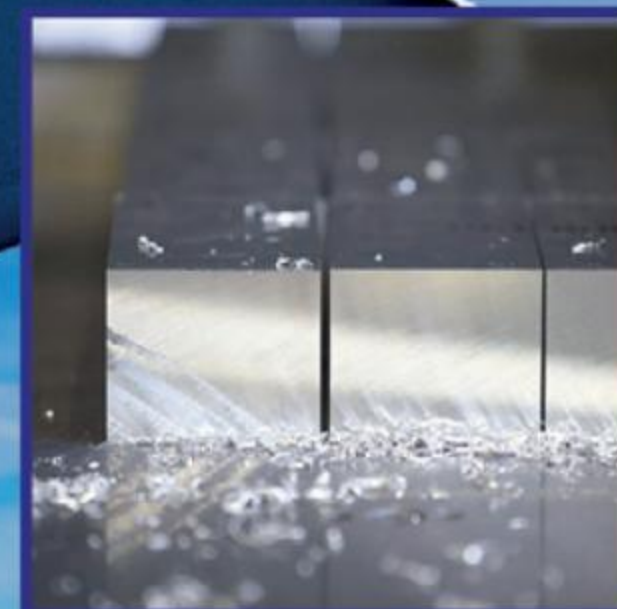
SMART DATA MANAGEMENT DEVICES
ENGINEERED TO PREDICT



EXTREME MOBILITY SUSPENSION SOLUTIONS
ENGINEERED TO SUCCEED

MATERIALS FOR CRITICAL APPLICATIONS

TITANIUM



Gould Alloys has expanded its Titanium supply chain capability.

Gould Alloys provides agile titanium supply chain strategies to respond to customer demand and mitigate the impact of titanium shortages. We maintain a strategic stockpile of critical titanium products and product forms to ensure a consistent supply for OEMs across the aerospace, defence, bio-medical, and oil & gas industries.

How can we help with your titanium supply chain?

 www.gouldalloys.com



A member of Aero Metals Alliance

TSS INTERNATIONAL

Serial Production has begun for the Innovative New Heavy Duty Brakes for TLC300!

TSS International BV together with MOV'IT GmbH (the German experts for High Performance and Heavy-Duty brakes) have launched an innovative solution in braking for heavy applications of the Toyota Landcruiser 300 (TLC300).

This innovation is specially designed and developed for the armoured TLC300 platform and is already installed in numerous vehicles resulting in overwhelmingly positive feedback from the end-users on the global market. The excellent performance of this complete brake solution for front and rear axle was also underlined during the vehicle homologation test for these VPAM VR9 vehicles at the end of last year.

The next final milestone in the industrialisation of the brake system has been reached, with the kick-off of serial production with cast-iron brake callipers and brake discs, resulting in uncompromised high performance at significantly lower cost.

This braking system for the armoured TLC300, which can weigh

up to 6,5 tons in protection class VR9, offers a total solution for the front and rear axle and is equipped with an OEM-compatible, integrated electric parking brake (EPB).

Thanks to the plug & play functionality, the system can be installed quickly and easily via the original interfaces of the base vehicle.

Features and Advantages for maximum braking power:

- Optimised braking force distribution for increased Gross Vehicle Weight
- Use of steel-braided, teflon-covered brake lines
- Reduced torsion and increased torque in assembly
- Improved driving dynamics during braking



Integrated EPB



Brake Pads



- Increased comfort
- 384x36mm drilled and internally ventilated 1-piece brake discs
- Significantly larger friction surface
- +50% on the front axle; +95% on the rear axle compared to OEM
- Reduced operational system temperature
- Increased heat capacity
- Reduced fading

Other characteristics:

- Plug and play electronic parking brake (EPB) interface
- Use with original EPB motor (not included in standard delivery)
- Designed for optimum use with TSS Heavy Duty Wheel® (8,5x18" and 9x20")
- Field-proven performance up to and including level VR9

The braking system's versatility extends beyond the Toyota Landcruiser 300 to alternative applications (with Electronic Parking Brakes), including armoured vehicles like the Mercedes-Benz G-Model and the Volkswagen Crafter. These systems are

already developed and ready for serial production, ensuring that the same level of high-performance braking is available for a broader range of armoured vehicles. Additionally, new braking systems can be developed and produced within a short timeframe, offering tailored solutions to meet specific requirements for various heavy-duty and armoured platforms.

Also "light" version available:

For vehicles with lighter protection packages, we also have a custom brake package. This consists of a full upgrade of the front axle brakes, combined with high-friction, OEM-compatible brake discs & -pads and stainless steel brake lines on the rear axle.

For more information, please contact TSS.

We will be visiting the **IDEX** fair in Abu Dhabi from **17 to 21 February** and have our own stand at the **Enforce Tac** in Nurnberg from **24 to 26 February** (stand number **7-845**). During these fairs we can also answer all your questions about these brake sets. To schedule an appointment with us during these events, please contact exhibitions@tssh.com.

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ARMOUR
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NP AEROSPACE

RAMPS UP UK-BASED ARMoured VEHICLE ASSEMBLY AND INTEGRATION CAPABILITIES

NP Aerospace, the global vehicle integrator and armour manufacturer, has today announced the ramp up of their UK-based armoured vehicle assembly and integration capabilities, to augment their established survivability and through life support services offering.

NP Aerospace is currently in the process of assembling and integrating over 150 specialist armoured vehicle systems, with yet more expected throughout 2025. The vehicle systems in assembly, range from complete Civilian Armoured Vehicles (CAVs) and fully integrated tactical vehicles to armoured cab sub-systems. This announcement coincides with The International Armoured Vehicles conference taking place in Farnborough, UK, 21-23 January 2025.





Since the announcement of the acquisition of the assets of Jankel Armouring Limited in June 2024, NP Aerospace has novated several former Jankel Armouring Limited contracts. In September 2024, NP Aerospace announced the receipt of seven individual vehicle related contracts from UK MoD. Since then, a further three vehicle related contracts have been placed, one from Belgium for the remainder of their LTTV fleet and a further two from undisclosed customers for specialist integrated armoured vehicles. In total, NP Aerospace is currently delivering on 9 different vehicle assembly and integration related contracts from 4 different global customers - both ministries of defence and industry vehicle OEM partners. This new work sits alongside NP Aerospace's established vehicle survivability, support, post design services and spares activity.

NP Aerospace is already fully established as a trusted global supplier of vehicle-related products and services. With this ramp up, NP Aerospace is now in the ideal position to deliver UK-based assembly and integration of full or partial vehicle systems for military customers and vehicle OEM industry partners. NP Aerospace has the required facilities, skills, knowledge, supply chain and processes in place to deliver exactly what the customers require, with a proven and resilient track record. Since the announcement of the acquisition

of the assets of Jankel Armouring Limited, NP Aerospace has now recruited upwards of 50 more staff, continuing their successful growth trajectory.

James Kempston, NP Aerospace CEO, commented: *"We're very pleased indeed to announce the ramp up of our UK-based armoured vehicle assembly and integration capabilities. 'So, what's next?' is an obvious question for most people to ask post-acquisition, and I'm proud to say that we're progressing at our expected pace. Since the acquisition in June 2024, we've taken the time to get things right and the talent we've secured has given us the critical foundations upon which to provide quality services to a global customer base."* He added: *"going forward, our priority remains the delivery of the key contracts we've secured whilst at the same time, demonstrating to a wider global audience including International OEMs, that NP Aerospace is the UK-based vehicle system assembly, integration and support partner of choice".*

npaerospace.com



Mission Critical Protection

SURVIVAL SYSTEMS LIMITED

THIS IS THE SECOND OF TWO ARTICLES STRESSING SURVIVAL SYSTEMS LIMITED COMMITMENT TO ACTIVE R&D

The first entitled the passing of a tsunami mentioned the obituary of Dr Chris Brooks and featured a thought piece and the implications of knowledge retention following training written by the other of SSL's R&D specialists Mike Taber PhD. This article pays a more fulsome tribute to Chris.

There are two fulsome obituaries that amplify Chris' history and achievements.

<https://www.legacy.com/ca/obituaries/theglobeandmail/name/christopher-brooks-obituary?id=56514603>

and

<https://www.bmj.com/content/387/bmj.q2569.full?ijkey=uXCwEM2qaHYQs&keytype=ref&siteid=bmjournals>

This article paraphrases them. It is worth pointing out you don't get an obituary in Journals of this standing unless you have done something pretty spectacular or brave or important

One of the great points about R&D is that it is important to have people of diverse interests and skills involved. Without this diversity of interest what you have is subject matter experts. Important though they are someone who is truly involved in R&D must have peripheral and long-range vision. The ability to see and make sense of what is going on around them coupled with

the ability to harvest innovative ideas and inspiration Chris had all this aplenty.

A quick Look at his professional career shows his breadth and depth of knowledge and adaptability. Originally qualified and commissioned into the Royal Navy he started work in submarines firstly on a Polaris boat and then on a hunter killer. One set of environmental conditions and illnesses, including being one of the first people to use acrylic glue to mend a broken tooth, mastered. No escape to dentist from a nuclear boat.

Leaving the Royal Navy he was recruited to the Royal Canadian Navy as a flight surgeon. That meant learning new skills associated with new environments, new issues, new complaints and a different type of patients and their problems. He obviously did it well because he ended up being the Command Flight Surgeon for both the RCN and the RCAF. Suffice it to say that whilst being winched down from an Air Sea Rescue Sea King Helicopter to the deck of a trawler to perform lifesaving surgery he had one of those inspirational moments that sets the tone for the rest of your life. He realised that survival chances in helicopter over water incidents, which had horrendously low survival rates, could be radically improved with more effective equipment and training backed by relentless, rigorous, study and a huge amount of innovation. A life course was set.

Chris also brought diverse interests to bear, restoring old motorcycles, collecting antique vehicle lighting systems and restoring them to working condition becoming a world expert in these and other subjects. He deployed the skills from these interests to help invent new and better life vests and survival kits, emergency oxygen systems for helicopter crews and passengers and deployed sound common sense to rethink the contents of survival kits by using for example tea bags rather than tea powder because you could use them again and in extremis they could become dressings. True lateral thinking.

His impact on the subject was recognised by the award of several prestigious medals and citations Including the Guild of Air Pilots

and Air Navigators, presented by the late Duke of Edinburgh. He also received the Theodore Lyster award from the Aerospace Medical Association. He was a member, as an expert witness/technical specialist, of several enquiries into transport incidents and was a medical judge on Canada's Transport Appeals Tribunal.

The lone inventor soldiering and soldering away in their garage is usually a myth. Yes innovation and an individual's drive and passion are needed but there are always other people involved. Chris' wide circle of "collecting" friends, he as a specialist Edgar Wallace book collector and an expert on poly phones (early gramophones) and early motorcycles demonstrated this. You have to be able to get on with people doing that.

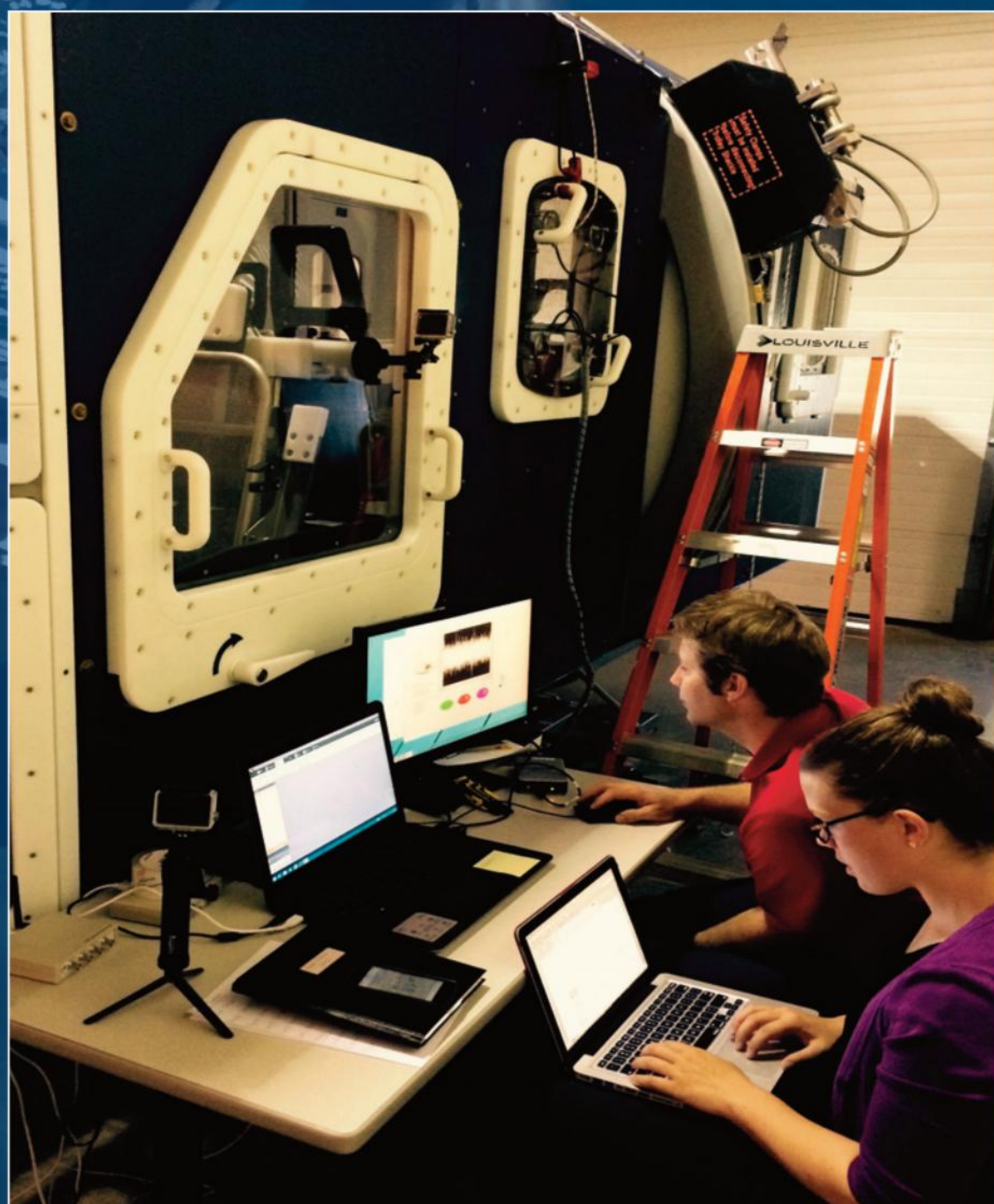
He had three tours at Canada's Defence and Civil Institute of Environmental Medicine (DCIEM). Not something you get to do without getting on with people. In the course of these postings he helped develop a centrifuge from old components to help train pilots deal with and function under the stresses of high speed/high "g" flying. No matter it was powered by a retired Toronto tram engine. It worked, testimony to ingenuity, innovation and improvisation.

With a CV like that it was no wonder he ended up at Survival Systems Limited, partnering Mike Taber in the SSL R&D department. As an adjunct professor at Dalhousie University, Halifax he produced or co-authored over 90 learned papers and now accepted as "the grounding science" of survival in hostile aquatic situations. Between the two of them they provided a tsunami of good results ranging from the incorporation of new material, how to deal with issues people had not considered, largely because they did not know, either that they were an issue or the answer, new techniques both in training and in-flight new equipment, new approaches and equally important harvesting the R&D of other people and institutions. Between them they had to convince sceptical customers of the value of what they and SSL were preaching. Mike continues to come out with great ideas and Chris' impact will live long. There are an awful lot of people who owe their lives to Chris and Mike and not just in helicopters but small boats, amphibious vehicles and light aircraft as well as on the rigs. Back to the obituaries. Yes it was a life of spectacular achievements and developments, yes there was bravery involved and yes it was important.

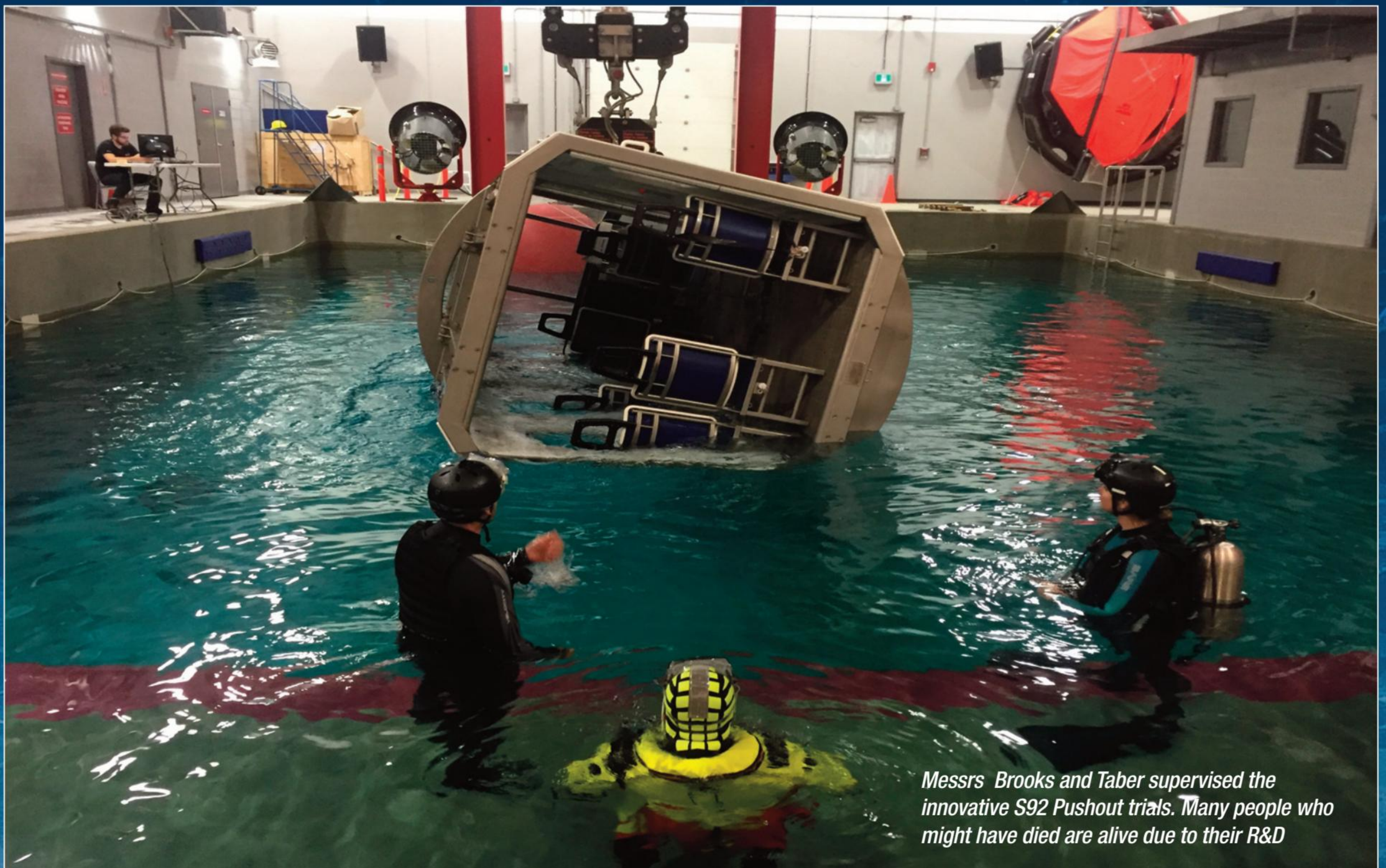
Finally as a tribute to Chris just have a look through some of the papers he and Mike produced. Many would struggle to read them, most to understand them, only a very few would be able to generate them. However they do demonstrate SSL's commitment to understanding the subject they are expert in and the science and engineering behind their primary product the METS® The Modular Egress Training Simulator its components and working parts and associated lifting systems and other ancillary devices and perhaps uniquely the use of R&D to improve training.

Brooks and Taber R&D projects using the METS® spanning the last 30 years

- King, T.S., MacKinnon, S.N., & **Taber, M.J.** (2018). How does load and impulse influence the success of jettisoning a simulated S-92 push-out window? International Journal of Industrial Ergonomics, 68, 205-210.
- **Taber, M.J.**, Sweeney, D., & Bishop, N. (2017). Test methods to record the forces required to jettison a Sikorsky S92 in-cabin push-out window. International Journal of Industrial Ergonomics, 59, 1-7.
- **Taber, M.J.**, Sweeney, D., Bishop, N., & Boute, R. (2017). Factor effecting the capacity to jettison an S92 push-out window. International Journal of Industrial Ergonomics, 58, 78-89.
- **Taber, M.J.** (2016). Human Factors Examination of Underwater Egress Forces Required to Open an S92 Push-out Exit. Unpublished technical report for Petroleum Research Newfoundland and Labrador and Research Development Corporation – Newfoundland and Labrador.
- **Taber, M.J.**, McMillan, D.H., Sanchez, D. (2015). Operational functionality test of offshore helicopter seat harness in wet and dry conditions. International Journal of Human Factors and Ergonomics, 3(3/4), 363-375.
- **Taber, M.J.** (2015). Shell helicopter seat harness study. Unpublished technical report for Shell Upstream Americas Deep Water.



- **Taber, M.J.**, MacKinnon, S.N., Power, J., Walker, R. (2015). Breath-hold times in air compared to breath-hold times during cold water immersions. *Aerospace Medicine and Human Performance*, 86(2), 82-87.
- **Taber, M. J.** (2014a) Simulation fidelity and contextual interference in helicopter underwater egress training: An analysis of training and retention of egress skills. *Safety Science*, 62, 271-278.
- **Taber, M.J.** (2014b). Post-egress survival skills in low level light conditions. Unpublished technical report for Petroleum Research Newfoundland and Labrador.
- **Taber, M.J.** & Sweeny, D. (2014). Forces required to jettison a simulated S92 passenger exit: Optimal helicopter underwater egress training techniques. *International Journal of Industrial Ergonomics*, 44, 544-550.
- **Taber, M. J.** (2013). Crash attenuating seats: Effects on helicopter underwater escape performance. *Safety Science*, 57, 179-186.
- **Taber, M. J.** & McGarr, G. W. (2013). Confidence in future helicopter underwater egress performance: An examination of training standards. *Safety Science*, 60, 169-175.
- **Taber, M.J.** (2012a). Pilot testing for stretcher extraction training. Unpublished technical document.
- **Taber, M.J.** (2012b). The effect of crash attenuating seats on helicopter underwater egress skill performance. Unpublished technical document.
- **Taber, M.J.**, Carroll, J., & Douglas, P. (2012). Medical crew preparedness for offshore helicopter evacuations: Necessary skills training for a ditching emergency. Unpublished technical document.
- **Taber, M.J.**, Kozey, J. & McCabe, J. (2012). Investigation of Emergency Breathing Apparatus Skill Set Knowledge Transfer Between Helicopter Underwater Escape Training Simulators. Unpublished technical document.
- **Brooks, C.J.**, Macdonald, C.V., Carroll, J., & Gibbs, P.N.G. (2010). Introduction of a compressed air breathing apparatus for the offshore oil and gas industry. *Aviat Space Environ Med*, 81, 683-687.
- **Tipton, M.J.**, Gibbs, P., Brooks, C., Roiz de Sa, D., & Reilly, T.J. (2010). ECG during helicopter underwater escape training. *Aviat Space Environ Med*, 81, 399-404.
- **Taber, M.J.** & McCabe, J. (2009). The effect of emergency breathing systems during helicopter underwater escape training for land force troops. *Safety Science*, 47(8), 1129-1138.
- **Taber, M.J.** (2007). Instructional task analysis of helicopter underwater escape training in an AS332L Super Puma. Unpublished technical document.



Messrs Brooks and Taber supervised the innovative S92 Pushout trials. Many people who might have died are alive due to their R&D

- **Brooks, C.J.**, Gibbs, P.N., Jenkins, J.L., & McLeod, S. (2007). Desensitizing a pilot with a phobic response to required helicopter underwater escape training. *Aviation, space, and environmental medicine*, 78(6), 618–623.
- **Taber, M.J.** (2005). Underwater escape: More than 1/3 of individuals require assistance three years after receiving Helicopter Underwater Escape Training. Unpublished technical document.
- O'Neil, B.D., Kozey, J.W., & **Brooks, C.J.** (2004). Underwater detectability of a lighting system on a helicopter escape exit. *Aviat Space Environ Med*, 75, 526-530.
- **Brooks, C.J.**, (2002). Evaluation of Equipment for Aiding Sea King Aircrew to Make a Successful Underwater Escape Wearing and AC-4 Respirator. Unpublished technical document.
- **Brook, C.J.**, (2001). Emergency Breathing Systems / Spare Air Evaluation for Helicopter Underwater Escape. Unpublished technical document.
- **Brooks, C.J.**, (2001). Determination of the Correct Placement of the Martin Baker Connectors and the Maritime Lanyard on the LPSV in the Cormorant Helicopter. Unpublished technical document.
- Cheung, S.S., D'Eon, N.J., & Brooks, C.J. (2001). Breath-holding ability of offshore workers inadequate to ensure escape from a ditched helicopter. *Aviat Space Environ Med*, 72, 912-918.
- **Brooks, C.J.** & Tipton, M. (2001). The requirements for an emergency breathing system (EBS) in over-water helicopter and fixed wing aircraft operations. RTO AGARDograph 341. Neuilly-sur-Seine, France: NATO. Human Factors and Medicine Panel.
- **Brooks, C.J.**, Muir, H.C., Gibbs, P.N. (2001). The basis for the development of a fuselage evacuation time for a ditched helicopter. *Aviat Space Environ Med*, 72(6): 553-561.
- **Brooks, C.J.** (2000). Fast Rescue Craft (FRC) Ditching Trainer. Unpublished technical document.
- Cheung, B., Hofer, K., & Brooks, C.J. (2000). Underwater disorientation as induced by two helicopter ditching devices. *Aviation, Space, and Environmental Medicine*, 71(9), 879-888.
- **Brooks, C.J.**, Muir, H.C., Gibbs, P.N. (1999). An initial investigation of passenger evacuation from the Super Puma helicopter. Unpublished technical report.
- **Brooks, et al.** (1999). To Examine the Detectability of the UEE Lighting System Underwater at Two Different Distances from the Human Eye. Unpublished internal technical document.
- **Brooks, C.J.**, Miller, L., Morton, S., & Baranski, J. (1999). Evaluation of a new universal jettison mechanism for helicopter underwater escape. *Aviat Space Environ Med*, 70(8): 752-758.
- **Brooks, C.J.** (1998). The Development of Emergency Breathing Systems (EBS) / Lifejacket System for the Royal Malaysian Air Force. Unpublished internal technical document.
- **Brooks, C.J.**, Potter, P.L., De Lange, D., Baranski, J.V., & Anderson, J. (1998). Options for liferaft entry after helicopter ditching. *Aviat Space Environ Med*, 69(3): 743-749.
- **Brooks, C.J.** & Bohemier, A.P. (1997). Helicopter door and window jettison mechanisms for underwater escape: Ergonomic confusion! *Aviat Space Environ Med*, 68(9), 844–57.
- **Brooks, C.J.**, Bohemier, A.P., Snelling, G.R. (1994). The ergonomics of jettisoning escape hatches in a ditched helicopter. *Aviat Space Environ Med*, 65(5) ,387-95.
- **Brooks, C.J.** (1993). New Ship-Borne Aircraft (EH101) Port Side Cabin Operator, Emergency Egress Trials. Unpublished technical document.
- Factors Affecting Egress from a Downed Flooded Helicopter [1993]
- **Brooks, C.J.** (1992). To Develop a Procedure / Protocol for the Transport of Medical Evacuees by Helicopter from an Offshore Platform to Shore-Based Facilities. Unpublished technical document.
- **Brooks, C.J.** (1990). Emergency Breathing System as an Aid to Egress from a Downed Flooded Helicopter. Unpublished technical document.
- **Brooks, C.J.** (1989). The Human Factors Relating to Escape and Survival from Helicopters Ditching in Water. AGARD-AG-305(E). Neuilly-sur-Seine, France: NATO.
- **Brooks, C.J.** (1988). Maximum acceptable inherent buoyancy limit for aircrew/ passenger helicopter immersion suit systems. *Applied Ergonomics*, 19, 266–270.

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Teledyne FLIR

Collaborator Gremsy Provides Vio Drone Payload for Public Safety and Industrial Applications

Vio Lightweight Drone Payload Features NDAA-Compliant Boson Radiometric Thermal Camera Module.

GOLETA, Calif.,— Teledyne FLIR, part of Teledyne Technologies Incorporated, today announced Gremsy, a leading provider of advanced gimbals and payloads, as the latest collaborator in the Thermal by FLIR® program. Gremsy integrates the Boson® radiometric thermal camera module as part of its gimballed National Defense Authorization Act (NDAA) compliant Vio F1 drone payload. Assembled in the USA, the Vio F1 is an advanced, lightweight electro-optical/infrared (EO/IR) payload for asset and infrastructure inspection, disaster relief, firefighting, search and rescue (SAR), and public safety missions.

The Vio F1 features a Sony 4K Block Zoom EO sensor with up to 240x zoom and a 640 x 512 radiometric NDAA-compliant and ITAR-free Boson thermal camera with up to 8x zoom. The payload also integrates a 2,400-meter laser range finder, making it an ideal option for industrial inspections and applications. With its integrated sensors, users can seamlessly engage the advanced functionalities of the payload through its diverse and intuitive viewing modes, allowing for individual and combined visible-thermal views.

“Working with the global leader in thermal imaging through the Thermal by FLIR program empowered Gremsy to drive innovation and get Vio swiftly to market,” said Vinh Tran, CEO at Gremsy. *“Our goal was to create a payload that is compatible with multiple platforms, including Pixhawk, CubePilot, and Skynode, and to offer an easy-to-integrate solution for any drone maker, including BLUE UAS providers.”*



Vio's Artificial Intelligence (AI) features provide advanced detection and auto zoom capabilities that are critical for public safety and SAR operations. AI detection offers accurate and automated identification of key objects, including humans, vehicles, and boats. Layered with AI Auto Zoom, the system can automatically zoom in on the selected object for the best and most useful view. The zoom level in tracking mode automatically adjusts as the object moves closer or farther away, eliminating the need for teams to adjust the zoom during flight.

“Gremsy is a known innovator in advancing aerial imaging technology, making it an ideal candidate for the Thermal by FLIR program,” said Dan Walker, vice president, product development, Teledyne FLIR. *“The Vio offers precision and accuracy, plus the upcoming implementation of our radiometric JPG file format will soon enable pilots to*

leverage the FLIR Thermal Studio Suite analysis and reporting software.”

Teledyne FLIR's Thermal by FLIR program is a cooperative product development and marketing program created to support original equipment manufacturers (OEMs). The program enables streamlined integration of Teledyne FLIR thermal camera modules into products and provides go-to-market support for resulting innovations.

Click here for details about Boson and visit the **Thermal by FLIR** page for additional information about the program.
Click here for more information about the Gremsy Vio F1

www.flir.com/oem



A thermal image of a street scene with various vehicles and pedestrians. Overlaid on the image are numerous colored bounding boxes (red, green, blue) and labels indicating object detection. Labels include '[27] person', '[16] person', '[13] person', '[8] sm_vehicle', '[7] person', '[10] person', '[3] lg_vehicle', '[4] sm_vehicle', '[53] person', '[2] sm_vehicle', '[1] sm_vehicle', '[5] vehicle', '[9] sm_vehicle', '[6] sm_vehicle', '[11] sm_vehicle', '[47] lg_vehicle', '[43] lg_vehicle', and '[39] sm_vehicle'.

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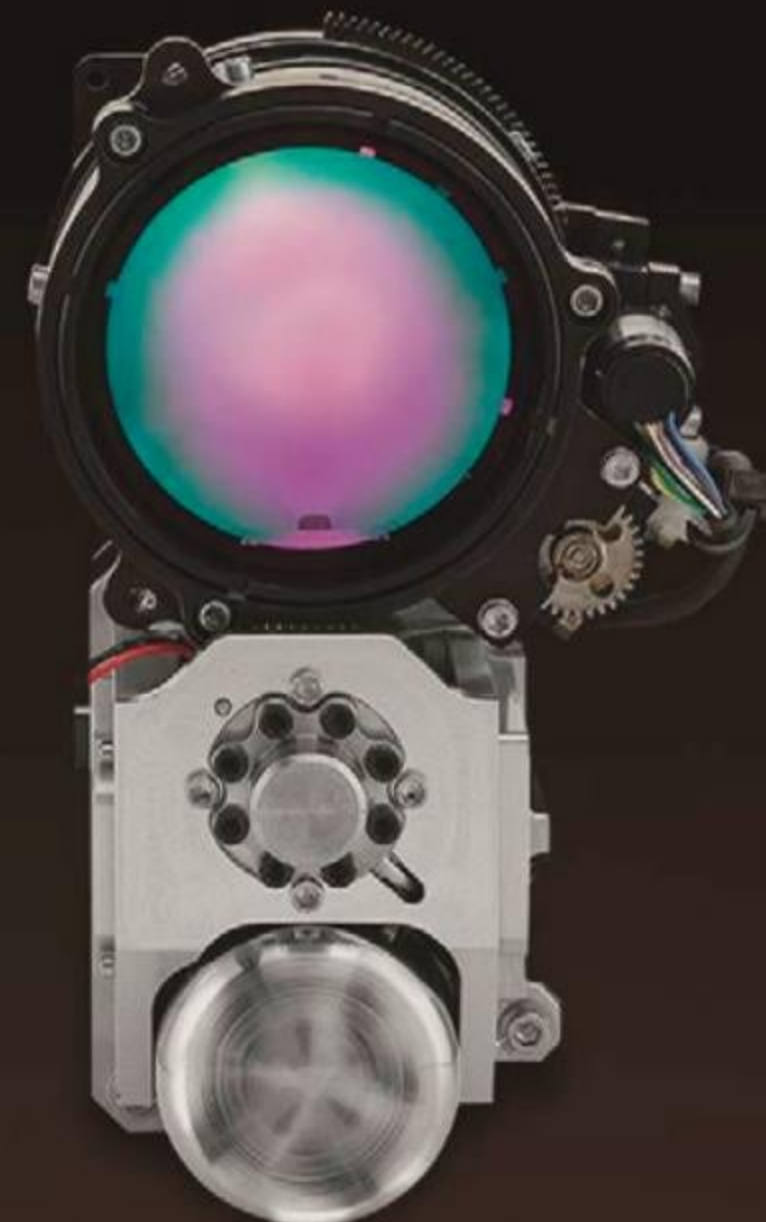
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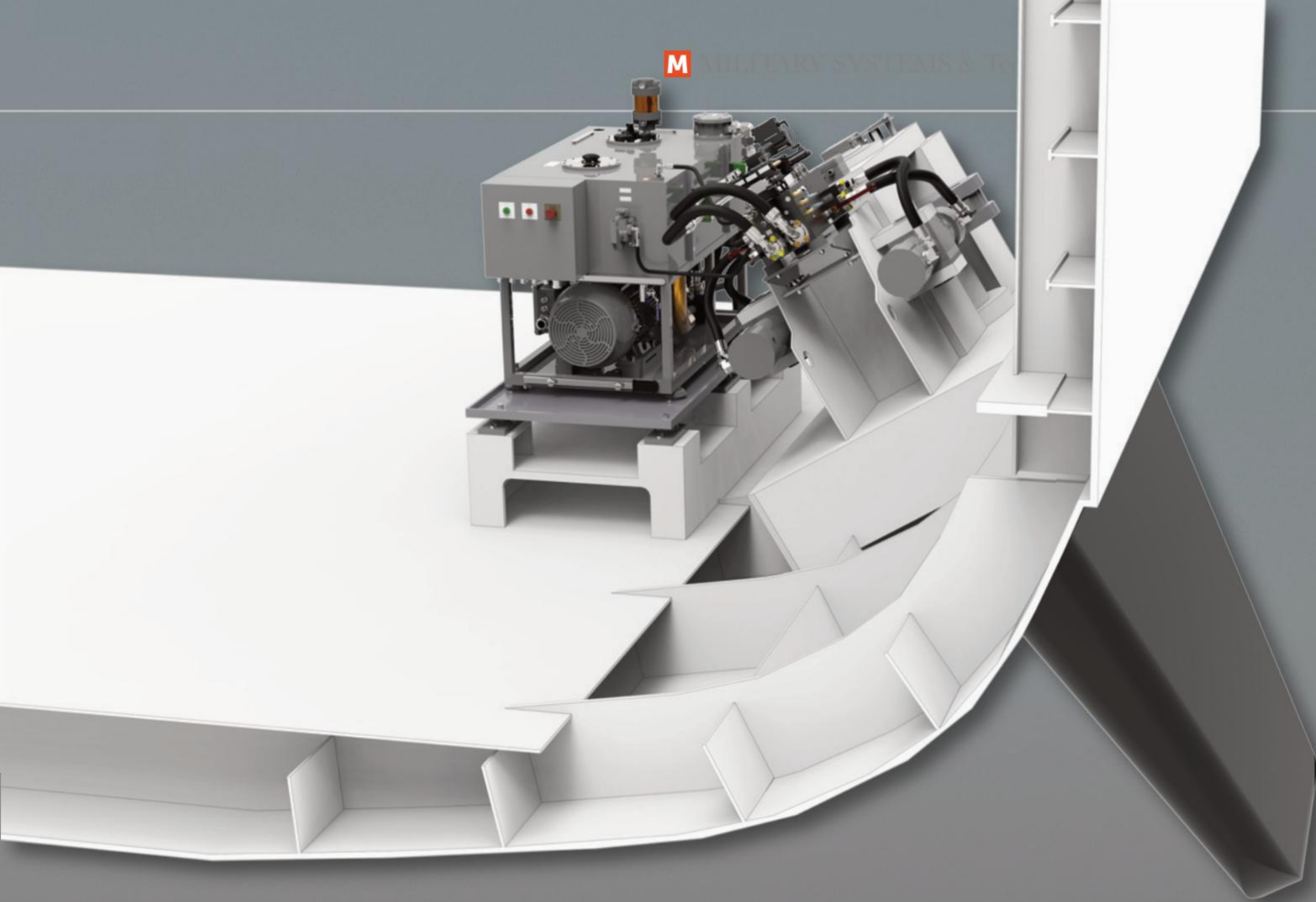
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Are Drones a Threat to the Future of Stabilized Surface Ships?



There is no denying that warfare technology has been advancing at an unprecedented rate, leveling the playing field for countries with limited financial resources to develop aggressive and effective strategies with a low price to entry.

With drone attacks picking up around the globe, the question has been raised whether surface vessels and therefore marine stabilizers have become obsolete in the realm of naval defense.

At the same time, many countries, including the United States continue building these vessels with plans to build more. So, is it possible that in the face of drone attacks the importance of marine stabilizers has actually grown?

There have been many threats to naval warfare that appeared to make surface vessels obsolete over the past century. From Admiral Percy Scott claiming submarines had made surface combat redundant in 1914 to the

latest drone attacks by Houthi Rebels in the Red Sea – the conversation around the possibility of replacing surface vessels continues to loom.

But why or are marine stabilizers and surface vessels still needed? The answer, yes, more than ever. First, cargo ships remain one of the most important trade ways in today's economy and are, without escort ships, highly vulnerable to attacks.

In a Washington Post op-ed, James Stavridis, a retired admiral and former Supreme Allied Commander of NATO, stated "More surface warships or more drones? Both, please. Militaries are undergoing a paradigm shift, but surface ships aren't finished." He also emphasized the importance of escorting or protecting cargo ships with surface vessels.

To ensure safety, the global economy depends on surface vessels with missiles, to support safe passage for these ships and their cargo. While drones can carry very little in the way of munitions or packages, a



frigate is far more robust in its load capabilities. For instance, an FFG can carry up to

- **40 surface air missiles**
- **8 surface missiles**
- **500 rounds of gun ammunition (weighing 16 kilos / 35 pounds each)**

At the same time, drones can be easily shut down or compromised. Drones are designed with guidance systems and communication links, which can be hacked into or deactivated. As to every threat caused by new technology, militaries need to respond by adapting, and understand the various ways to deactivate communication links. While a well-targeted cyberattack can shut down a drone entirely, it is almost impossible to fully shut down a surface vessel from afar, which gives them a clear competitive advantage.

Another important responsive development has been the use of close-in-weapon systems and lightweight missiles aboard stabilized surface vessels to provide more protection against military threats. Furthermore, numerous navies, including the United States have been exploring using unmanned vessels as an independent combatant or an escort for manned ships. The latest unmanned project to come out of Washington is the Modular Autonomous Surface Craft (MASC). Though some may question as to the logic of stabilizing an unmanned platform, most see the merits for seakeeping advantages, securing a stable platform for combat or simply protecting the onboard assets as well as the ship itself. In addition, the ship may be referred to as unmanned, but the reality and expectation will be limited manning during the early years. As such, many are realizing the advantages of a stable platform. Another interesting reality is the fact that most onboard equipment manufacturers have their own stabilizing features, for protection underway. These gyros and other stabilizing technologies could potentially be omitted if the overall platform was stable, saving hours and dollars in unnecessary spending.

Additionally, as drone technology continues to advance, so too has stabilizer technology. Electric fins, known as the e-FIN™ by Quantum Marine Stabilizers, offers significantly greater power efficiencies over a

traditional hydraulic system and an extended maintenance schedule. The e-FIN has the ability to operate for several weeks without manning or maintenance.

Simultaneously, the need for proper stabilization for both crewed and unmanned surface vessels has become more important than ever. No one can underestimate the value of staying on station and keeping the crew stable to carry out their duties. Beyond the crew's productivity, a stable platform reduces the risk of injury and potential ship damage. Finally, another tremendous benefit is for the ship to have the ability to operate at a higher sea state for rescue missions, refueling underway and helicopter landings.

In fact, manned and unmanned vessels using a stabilized platform experience greater fuel efficiencies and reduced down time due to bad weather and poor sea conditions. Drones are simply grounded in poor weather conditions.

In conclusion, the development of drones as an alternative military defense solution offers many advantages, but not a replacement for surface ships that provide much greater warfare capacities and capabilities.

To stay on top of today's challenging political climates, navies need to support their crew with stabilized vessels, giving them operational advantages, higher reliability and greater efficiencies at sea.

Quantum Marine Stabilizers has been supplying the US and allied militaries with stabilizer solutions for 25 years. Projects have included: Fast Response Cutters, Frigates / FFG's, Offshore Patrol Vessels, Navy Support Vessels, Cyclone-class Vessels, as well as Service Life Extension Programs. Quantum Systems will continue to support navies around the globe with high performance stabilizers to keep their surface ships safe, secure and above all stable.

For more information: <https://quantumstabilizers.com/military-vessels/> info@quantumstabilizers.com

Note Images: FFG assembly for stabilizer upgrade & FFG vessels

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Easy to open double throw
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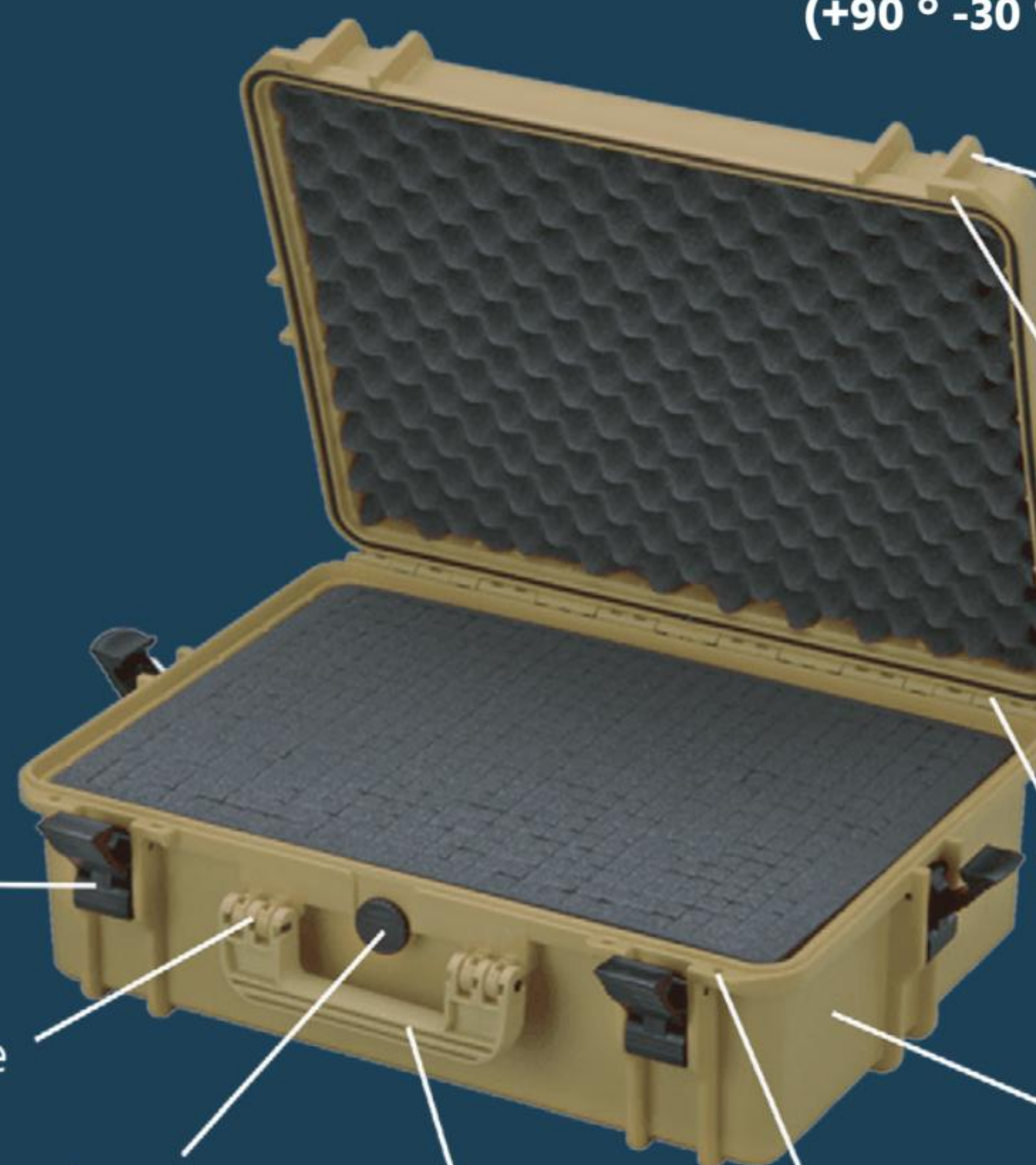
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TELESCOPIC MAST SELECTION GUIDE

Selection of a telescopic mast is a crucial step in the planning of a new communication system.

A well-chosen mast can enhance operational efficiency and safety.

Our sales team outlines here the key criteria for selecting a mast, then standard mast types, and the stages of the sales process, and finally the most common mistake you will want to avoid when buying a mast system. With this, you can be certain that the final solution answers your needs precisely.

Key Selection Criteria for the Choice of Mast System

The proper selection of a telescopic mast depends on the following considerations:

1. Height and Load Capacity: The antenna should be elevated above any obstacles, such as treetops, to avoid attenuation in signal transmission. The load carrying capacity is determined by wind load

calculations using the payload details provided by the customer. In some instances, wind load tests can also be conducted at our testing facility. The mast shall be able to carry the payload through survival wind and gusts. The height might also vary depending on its usage, such as mounting communication antennas or surveillance equipment.

2. Wind and Wind Load: In wind load calculations for the mast, the wind surface area of the payload is often more critical than its weight. Wind has a considerable effect on mast deflection, which may affect antenna performance, especially for directional antennas. The deflection should meet customer requirements. The mast can be further stabilized by increasing the number of guying levels.

3. Mounting Solutions: Standard anchoring for field masts is via guy stakes and guy ropes. Additional kits are available for hard surface mounting (rock, concrete), sand plate kits for desert environments, and tree straps. The size of the payload and max wind speed will dictate how many guy stakes and guy ropes are used. Field masts may also be mounted on vehicles with specialized vehicle mounting kits. The vehicle mounting bracket system is bolted on the vehicle or shelter structure and then the mast is mounted on the vehicle mounting kit.

4. Application: Field masts are designed to be operated in open areas, usually in a fixed location for extended periods. Vehicle masts, on the other hand, are mobile, semi-permanently mounted on mobile platform and can easily be re-located from one place to another, as well as are quick to deploy and operate. We always try to find the best solution for our customer. A mast which is over robust can be annoying to handle and might be more expensive than it needs to be, while one that is too small, or too light weight might be dangerous. That's why we ask our customers a wide-range of sometimes difficult questions in order to tailor the mast system to a particular application.

5. Environmental Factors: The mast systems are tested according to MIL-STD-810 standards. The system should be verified by both the customer and the seller to meet the requirements specified in the end-user's specifications. Our mast systems work in freezing cold, scorching heat, dusty deserts, and icy conditions.

6. Compatibility: To specify a mast, it's easiest to start by determining which antennas you want to mount on the mast. In addition to the mast itself, we supply antenna adapters, mounting booms, antenna pointing devices etc. If we do not have an adapter that is suitable, we will design one.

Types of Masts

What is the difference between types of masts?

Our product range goes from lightweight, man-portable masts to heavy-duty systems with leading-edge payload and height capabilities, vehicle mounting kits, antenna pointing devices and numerous other accessories.

Masts may be divided, by performance and use, into the following categories - field masts and vehicle masts:

Field masts are normally made light weight. Tripods or push-up type of masts carrying small payloads are normally used. Tripods lift the payloads to heights of 3 meters or less. These are quicker to erect and can be steadied on uneven surfaces by adjusting the legs. Tripods are also lightweight and therefore easy to carry. For heights in between 3- and 7-meters, lightweight push-up masts with guy ropes are quick to erect and often more practical than a tripod for such applications. Slightly more robust winch-operated EX masts go up to 20m height and can carry max. 50kg payloads. Above 20 and up to 50 meters, heavy-duty EXL mast systems are used.

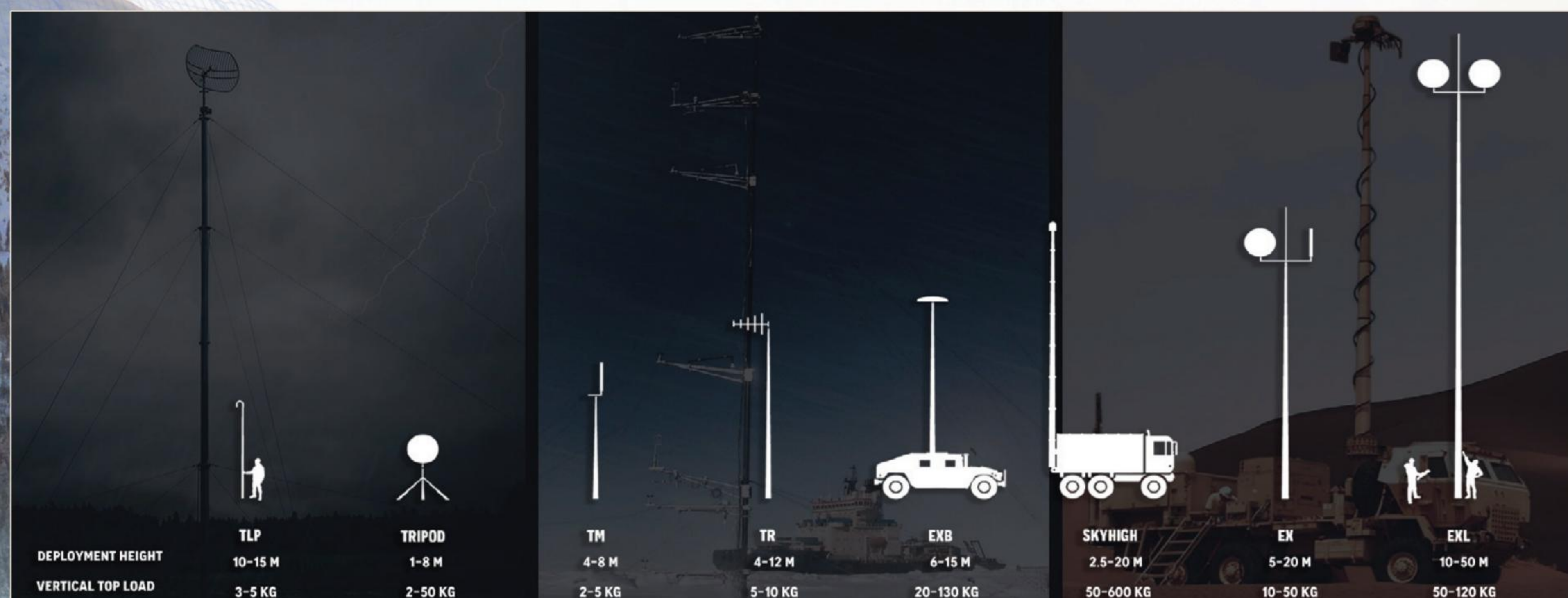


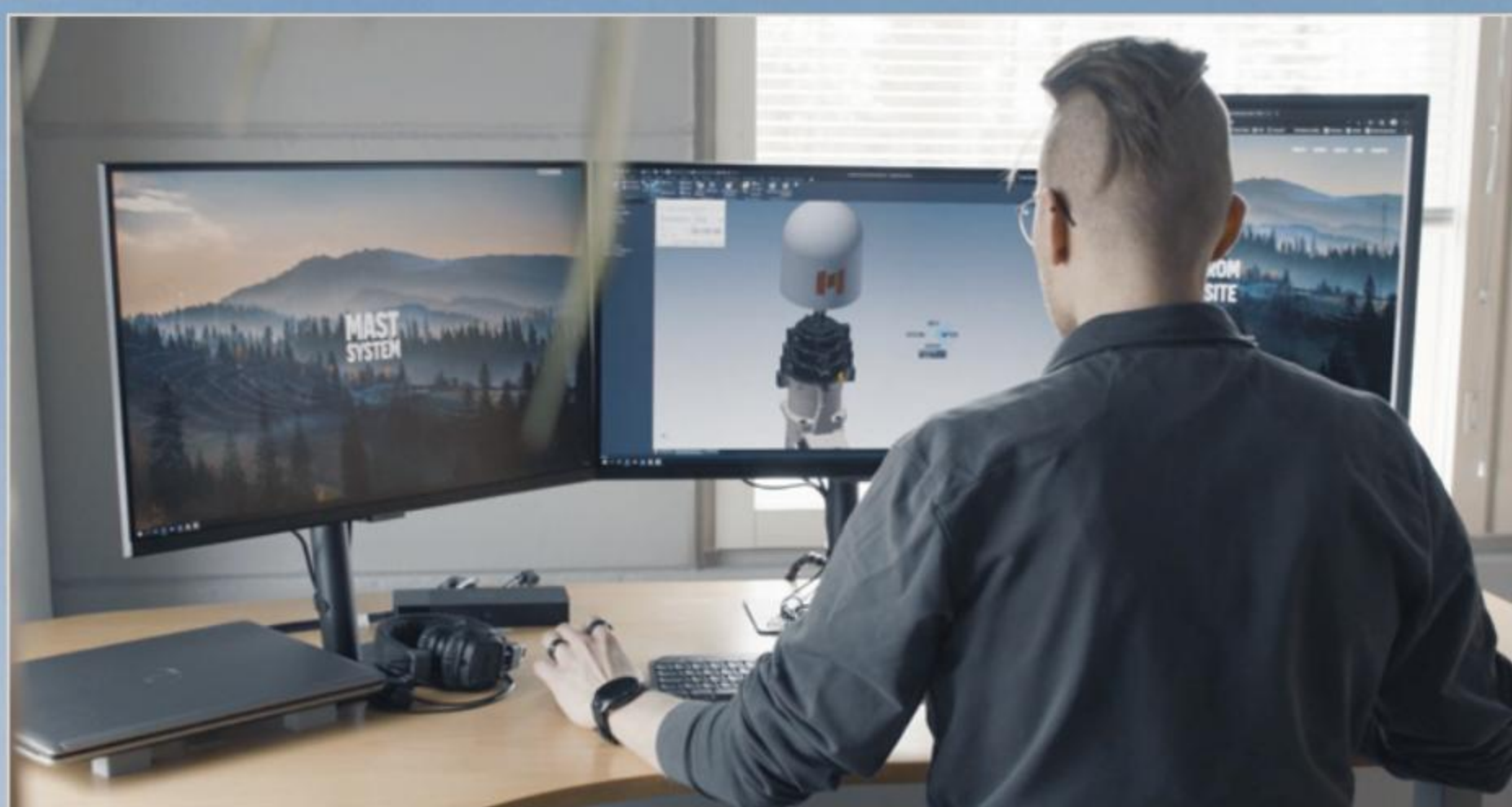
Vehicle masts, such as EXB and SkyHigh masts can be mounted on a wide variety of mobile platforms. These are ideal for vehicular operations where very little time and manpower are available for deployment. Push-button vehicle-mounted masts allow rapid extension and operation without guy ropes; deployment is much safer, faster, and requires fewer operators.

What Should the Customer Know When Sending a Request for Quotation?

The success for mast system selection starts with a well-prepared request for quotation. Customers are advised to give as much detailed information as possible to help our sales team recommend the best possible solution. Key questions include, but are not limited to:

- **What are the required full length and transport length of the mast?**
- **Are you looking for a guyed field mast or a unguyed vehicle mast?**
- **What is the weight and wind surface area of the payload – Antenna interface details?**
- **What is the maximum allowable deflection?**
- **What is the maximum operational wind speed (default 25 m/s)?**
- **Is manual or electric operation required?**
- **Are antenna pointing devices required?**
- **Any other, special requirements?**
- **End-user country?**
- **Environmental condition requirements?**





Stages of the Purchasing Process

Our sales process is designed to serve the customer smoothly and thoroughly. The process includes:

- 1. Request for Quotation:** The client states their needs. If this is necessary, an example request form is available to gather all the information.
- 2. Clarifying Questions:** Where necessary, further questions are asked to clarify all the technical details and requirements of the mast system.
- 3. Solution Proposal:** We propose the most suitable type of mast and accessories. All suggestions are made keeping in mind the customer's unique requirements.
- 4. Quotation:** A quotation containing prices, delivery time and delivery terms are presented to the customer. Installation support and training can also be included in the quote.
- 5. Delivery:** The mast is delivered according to the agreement once the quotation has been accepted. Delivery includes extensive technical documentation, user and maintenance guides and installation instructions.
- 6. Follow-up:** When follow-up is taking place, we assist the customer in the maintenance of the mast system and in the procurement of spare parts and consumables. Follow-up training in the use and maintenance of the mast can also be provided.

Tips to Avoid Common Mistakes

The customer should always bear in mind that the payload dictates the mast selection, not vice versa. One of the most common mistakes made in the mast system selection process is incomplete information regarding the payload, such as its weight and wind surface area. Missing this data can result in an under- or over-robust mast system, leading to unnecessary costs or safety risks.

There is never too much information for us in Mastsystem when selecting a suitable mast system. More information brings more value, and we can do reliable stability calculations based on that data. Full details on intended use and operating environment also enhance the possibilities to find the best possible product.

Conclusion:

Choosing the right telescopic mast is considered an investment that requires precision and expertise. At Mastsystem, we are committed to choosing the most appropriate solution for our customers' needs. Together, we ensure the mast solution supports your operations in the best possible way—safely and efficiently.

With our complete customer service, each customer is taken care individually, and we provide solutions to all the operating environment challenges. Large or small system requirements, we at Mastsystem are ready to support you through it all.

If you have any questions or would like to build a partnership with us, please contact our helpful sales team!



www.mastsystem.com

sales contact information:

Email: sales@mastsystem.com

Phone: (+358) 20 775 0810

Website: www.mastsystem.com

LinkedIn: Mastsystem

**MAST
SYSTEM**



Make the invisible, visible

with Kromek's range of ruggedised,
reliable radiation detectors



LIGHTWEIGHT

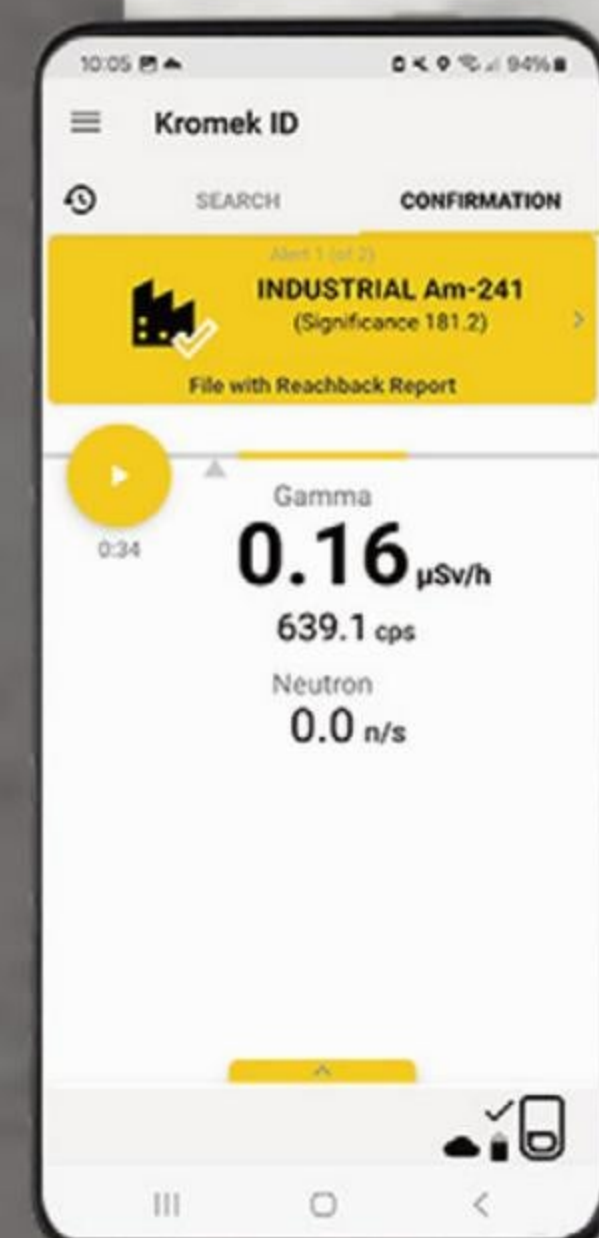
WEARABLE



DISCREET

INSTANT

Delivering operational
flexibility on the ground
and at a distance



POWER EVERY PART OF YOUR DEFENCE

Original Equipment Manufacturers (OEMs) around the world rely on Cummins products to help their equipment exceed performance expectations, and military equipment is no exception.

Since World War 1, Cummins has been a critical partner in supporting military operations, consistently earning top marks for durability, dependability, and performance.

Cummins supplies powertrain, drivetrain, and power generation solutions to defence forces worldwide, with thousands of Cummins-powered vehicles and power generation units in active service.

The Power and Delivery Each Force Needs

By starting with commercial off-the-shelf (COTS) technology and tailoring it to meet exact specifications, customers gain advantages in pricing, reliability, real-time data access, and improved global delivery times.

Cummins offers a wide range of off-the-shelf engines, from 74 to 1000 hp, the industry's most comprehensive portfolio of drivetrain components as well as generators for various military applications. As vehicles face new requirements for more power density and improved fuel economy, Cummins easily adapts. By leveraging solutions that have already proven themselves in both military and commercial applications, Cummins engineers can customize solutions to meet specific defence application requirements.

Integrated Power for the Defence Industry

Cummins integrated power delivers choice, advances sustainability, enhances the customer experience, and drives innovation. The commitment is to empower customers with top-tier options that meet mission needs through a continually expanded portfolio and partnerships. Complete powertrain solutions are now available—from engine to transmission to axles—ensuring every component works seamlessly together.

Cummins' components business now inclusive of the largest portfolio of drivetrain and braking systems in the industry, thanks to the inclusion of the Meritor product lines, ensures Cummins is positioned as a true platform solutions provider for integrated powertrain systems. With Cummins' integrated power, customers can trust that their entire powertrain is supported and that their issues can be resolved.

POWERING MISSIONS ON LAND

Since the 1970s, Cummins has been a leader in developing engine technologies for the U.S. Army, building on a legacy that began with WWII products. Advanced test cells and rigorous on- and off-road testing ensure the highest quality and performance of Cummins products. When customers need to cover ground, Cummins engines provide a tactical advantage with greater range and efficiency. Whether powering armoured fighting vehicles (AFVs), armoured personnel carriers (APCs), tactical trucks, heavy artillery, missile launchers, or unmanned ground vehicles (UGVs), Cummins leverages 105 years of expertise in R&D (Research and Development) (Research and Development), engineering,



system integration, and technical guidance. The company offers solutions for diverse applications, locations, and conditions, supported by comprehensive service and support.

Cummins provides a comprehensive portfolio of technologies to ensure engine availability while meeting the latest emissions regulations. The engines are also capable of operating with a wide range of military fuels, including NATO F-34 and F-54, JET A-1, JP-8, AVTUR, F24, and Hydrotreated Vegetable Oil (HVO).

Continuous innovation ensures the delivery of optimal solutions to meet customers' needs.

An Engine for Current and the Next Generation of Combat Vehicles
Whatever the objective, Cummins provides dependable and innovative power solutions to achieve it. For example, the Advanced Combat Engine (ACE) delivers 2,424 lb-ft of torque with just 14.3 liters of displacement. ACE also features innovative Opposed Piston (OP) technology and an advanced two-stroke diesel combustion system with pistons working in opposite reciprocating action. This design results in high power-to-weight and power-to-size ratios, as well as low heat rejection, making ACE ideal for combat vehicles with limited space for engine systems. Additionally, ACE offers improvements in fuel economy, cooling efficiency, and increased vehicle range.

The compact four-cylinder ACE incorporates advanced technologies not currently found in diesel combat engines and is designed for infantry fighting vehicles and main battle tanks. Its modular design allows for configurations in three-cylinder and six-cylinder arrangements,

delivering power from 750 to 1,500 horsepower.

Engineered to operate in full desert conditions with all specified military fuels, ACE also serves as a potential facilitator for hybrid electric powertrains in next-generation combat vehicles. Scheduled for production in late 2027, ACE's adaptability extends beyond military applications to commercial uses requiring high power in constrained spaces.

POWERING MISSIONS ON SEA

Shipbuilders and naval operations around the globe depend on Cummins for continuous improvement and innovation. Offering a broad range of power from 4.5 to 95 liters—including propulsion engines, auxiliary engines, and marine generators—Cummins provides solutions that meet customer needs and exceed military and security requirements.

Many of Cummins' marine engines are approved by major marine classification societies worldwide, such as the American Bureau of Shipping. Notable features include independent safety and alarm systems, dual-walled fuel lines, and duplex filtration.

In 2004, Cummins pioneered diesel electric propulsion using AvK® and Stamford® alternators. Today, over one thousand Cummins diesel electric generators power Platform Supply Vessels and Offshore Service Vessels globally.

All Cummins marine engines can run on JP-5, JP-8, kerosene, and biodiesel. With a history of delivering reliable, durable diesel engines to



the marine market since 1919, Cummins continues to push the boundaries of innovation.

Receive support at major ports on every continent through the Cummins distributor network — anytime day or night. With Cummins-powered vessels operating in every time zone, get unmatched access to technical experts around the clock and attain parts worldwide through three major distribution centers in Memphis, Singapore, and Belgium.

POWER TO SET UP BASE

As today's defence systems become more agile and sophisticated, there is a greater reliance on associated power generation solutions. From Basic Expeditionary Airfield Resources to Advanced Medium Mobile Power Sources (AMMPS), Cummins delivers the military experience and technical capabilities needed to meet demanding performance, logistics and mobile power requirements.

From powering command centers, mobile hospitals, and infrastructure at forward operating bases to missile defence and directed weapon systems, Cummins Power Generation provides the expertise and innovation to keep your mission on track — anywhere in the world.

Rugged Mobile Power: 5kW to 60 kW Prime Power

The Rugged Mobile Power (RMP) Unit is a version of the original AMMPS generator, designed for use by both US and non-US militaries in tactical environments and beyond. It offers significant operational benefits across all military services, including a reduced logistics footprint,

enhanced unit mobility and transportability, and lower operations and maintenance (O&M) costs. The RMP line includes generator sets ranging from 5 kW to 60 kW in both 50/60 Hz and 400 Hz.

These generators are versatile enough to support microgrid solutions without requiring external control devices. Additionally, service personnel can connect up to 6 units in parallel to create a network configuration.

The RMP products are backed by deep defence experience and technical expertise.

Over A Century of Serving Customers

In August 2022, Cummins acquired Meritor, Inc. The integration of Meritor's people, technology, and capabilities has positioned Cummins as one of the few companies offering fully integrated powertrain solutions. Now operating as Cummins Drivetrain and Braking Systems (CDBS) within the Components segment, the unit continues to provide Meritor-branded solutions across both combustion and electric power applications.

Designed and Engineered for High Performance

Meritor-branded solutions deliver innovative products with superior performance, efficiency, and reliability, solidifying Cummins as a leading global supplier of drivetrain, mobility, braking, and aftermarket solutions for commercial vehicles and industrial markets. Serving diverse sectors, including commercial truck, trailer, off-highway, defence, specialty, and



aftermarket, Cummins excels in designing, engineering, and manufacturing high-performance drivetrain solutions that ensure mobility and safety for tactical-wheeled vehicles worldwide.

Engineering teams prioritize customer needs, ensuring that end-user requirements drive the engineering process. Ongoing efforts to redefine the global defence portfolio around customer demands underscore the company's unwavering commitment.

Scalable Tactical Vehicle Solutions

Meritor's ProTec modular solutions for tactical vehicles deliver high performance, efficiency, and reliability. The ProTec Independent Suspension Axle Systems (ISAS), paired with durable ProTec All-Wheel Drive Beam Axles, offer the dependability required on the battlefield. The ProTec ISAS family provides a two-tiered approach to protecting military personnel while supporting mission success. The weight-efficient, payload-enhancing design increases vehicle capacity for additional armour in combat environments. The strong yet lightweight differential carrier ensures durability without compromising weight savings. ISAS solutions are scalable for light-, medium-, and heavy-duty tactical wheeled vehicles.

Optimized for the military market, ProTec solutions meet stringent specifications, performance requirements, and sustainability targets. For over 110 years, Meritor-brand axles have been the choice of the U.S. Army for 2.5- and 5-ton vehicles. The ProTec All-Wheel Drive Beam Axles provide the range and performance needed in military applications.

Now, Cummins offers more than just engines for defence vehicles. With a wide range of industry-leading drivetrain systems, including axles, brakes, suspensions, drivelines, and aftermarket parts, Cummins brings its commercial and industrial expertise to the military market.

Call In Expert Support

Cummins Care is a solutions center dedicated to preventing issues while providing quick and accurate answers. Its mission is to elevate customer service by being available 24/7/365, offering faster and more personalized attention with rapid results.

From the moment a customer engages with Cummins Care, they gain access to experts with specialized skills, experience, and in-depth knowledge tailored to military equipment needs. Additional support is available through regional and language-specific experts and resources at care.cummins.com.

Cummins ensures that military equipment remains mission-ready by delivering a seamless support experience from supply lines to battle lines, on land and at sea.

READY FOR ACTION

From power range and innovation to world-leading reliability and electronic integration, Cummins is committed to ensuring military vehicles perform with distinction, ready for action 24/7. Discover how Cummins can power your next mission:

www.cummins.com/engines/defense

CALIAN

Appoints New Regional Vice President of Defence for Europe, U.K. and NATO



Calian Group Ltd. (TSX: CGY), announced the appointment of Major-General (Ret.) Roch Pelletier to the role of Regional Vice President (RVP) Global Defence & Security.

This newly created role addresses the growth of Calian's defence business, driven by increased global military spending, geopolitical instability and the rising demand for advanced technologies.

This appointment will advance Calian's strategic business development, strengthen relationships with stakeholders, and provide operational support to drive growth and efficiencies within the region.

In his 36 years of service with the Canadian Armed Forces (CAF), Major-General Pelletier held senior command roles, including Commander of the Canadian Army Doctrine and Training Centre (CADTC) and the 5th Canadian Division. He also served as Director General of Intelligence, Operations, and Plans for the Canadian Joint Operations Command. During his military tenure he gained extensive expertise in national defence strategy, operational planning and international collaboration. He demonstrated an ability to navigate complex and challenging environments and deliver results.

“Major-General Pelletier’s role underscores our commitment to growing our European and U.K. footprint and strengthening our support for NATO customers with mission-critical solutions,” said Kevin Ford, Calian CEO. *“His record of leadership, deep understanding of defence and global security challenges will be instrumental in advancing our mission and delivering future-proof solutions as we expand our services throughout Europe and the U.K.”*

In the RVP role, Major-General Pelletier will expand and

strengthen international collaborations in support of advancing Calian’s IT, cybersecurity and advanced training capabilities, addressing the growing demand for scalable solutions that enhance operational readiness and resilience in defence. This aligns with global priorities on defence modernization and collaboration across NATO allies to safeguard critical assets.

Learn more about Calian’s mission-ready solutions tailored to meet any objective. Visit Calian Defence to explore our capabilities.

www.calian.com/defence

CALIAN®
Confidence. Engineered.

A Few Thoughts



On Defence Industrial Strategy and how to engage SMEs

www.lutra-associates.com

Warfare is undergoing some dramatic changes. To match this so must defence manufacturing.

There remains a role for, for want of a better term, hard defence: tanks AFV's, fixed and rotary winged aircraft crewed or uncrewed, artillery etc but the emphasis is increasingly shifting to "smart" often electronic systems. Lutra Associates is frequently asked to comment on inputs to Defence Industrial Strategies (DIS). History is littered with the carcasses of dead DIS. Uncovering these is one of the most prolific forms of Defence Archaeology. Nobody denies the need for them it's just that like dinosaurs they are physiological unsuited to survive contact with the environment that they have been born into. Evolution has neither mentally prepared nor designed them to adapt to the stresses ahead. Usually the issue are they are too big, don't know how to handle the environment and, frequently, are perfect prey. A series of sweeping statements to begin with but notable for being truisms.

SMES seem ideally suited, they are innovative nimble and agile and entrepreneurial, to deal with the smart weapons. Old defence companies seem suited to do the "metal bending and bashing". That is not to say there are not some pretty smart hard defence systems around. Many in MoD, Government and most of industry believe that SMEs had the adaptability and flexibility to deal with the vicissitudes of defence procurement and provided suitable reforms occur set defence procurement on a more flexible and cost effective and productive footing than the current system. One has to ask why SMES are not as involved as they might be and what can be done to enable deployment of these attributes?

There is no point in this defence archaeology if lessons are not learned from it. Cynics would say Defence Reviews are subscribed to

by the Treasury as part of the means of strategic control of the MoD i.e. underfunding "Defence". If a Defence Review is a mechanism to deny defence spending at a strategic level, then a DIS is part of the operational mechanism to control that spending by making the environment in which the participants; MoD, Industry and Academia, have to operate as difficult as possible.

Too frequently people don't, won't or can't understand the intricacies of the situation, including the roles and needs of SMEs, often, usually(?) because they are civil servants with little or no knowledge of MoD, Industry or Academia. As often as not they are answering questions set by people even more removed from the coal face of facilitating procurement that benefits all factions of the three major participants in a DIS. The disingenuous would suggest the people setting the question actually have the knowledge but set out to get exactly the opposite of a working solution. Achieving sensible defence procurement carried out quickly, with minimum fuss and whilst championing SMES, which would improve defence capability by replacing old with genuinely new capability as opposed a tweaked version of the clapped-out equipment it was replacing would never do because money would be spent on genuinely ground breaking capability.

Why else do DIS fail? Part of the answer to that question is the role they are perceived to perform. Once set the DIS will provide a *modus operandi* and framework of how money will be allocated and spent. Those that cry loudest for a DIS are frequently those furthest away from the day-to-day procurement activity. One step closer to the action are those formulating the strategy. Most of these two groups have little or no actual experience or knowledge apart from a basic primer in the subject and almost certainly no experience of work in an SME and understanding of their culture.

Part of that culture is that things in government just take too long to occur. By the time a DIS has been worked on and agreed within government, remember it usually follows a review, people have frequently forgotten what the questions were and more importantly why they were asked. Once published the DIS becomes a convenient tool, by dint of checking that a procurement complies with the DIS, to further delay actual procurement to the point that there has been a

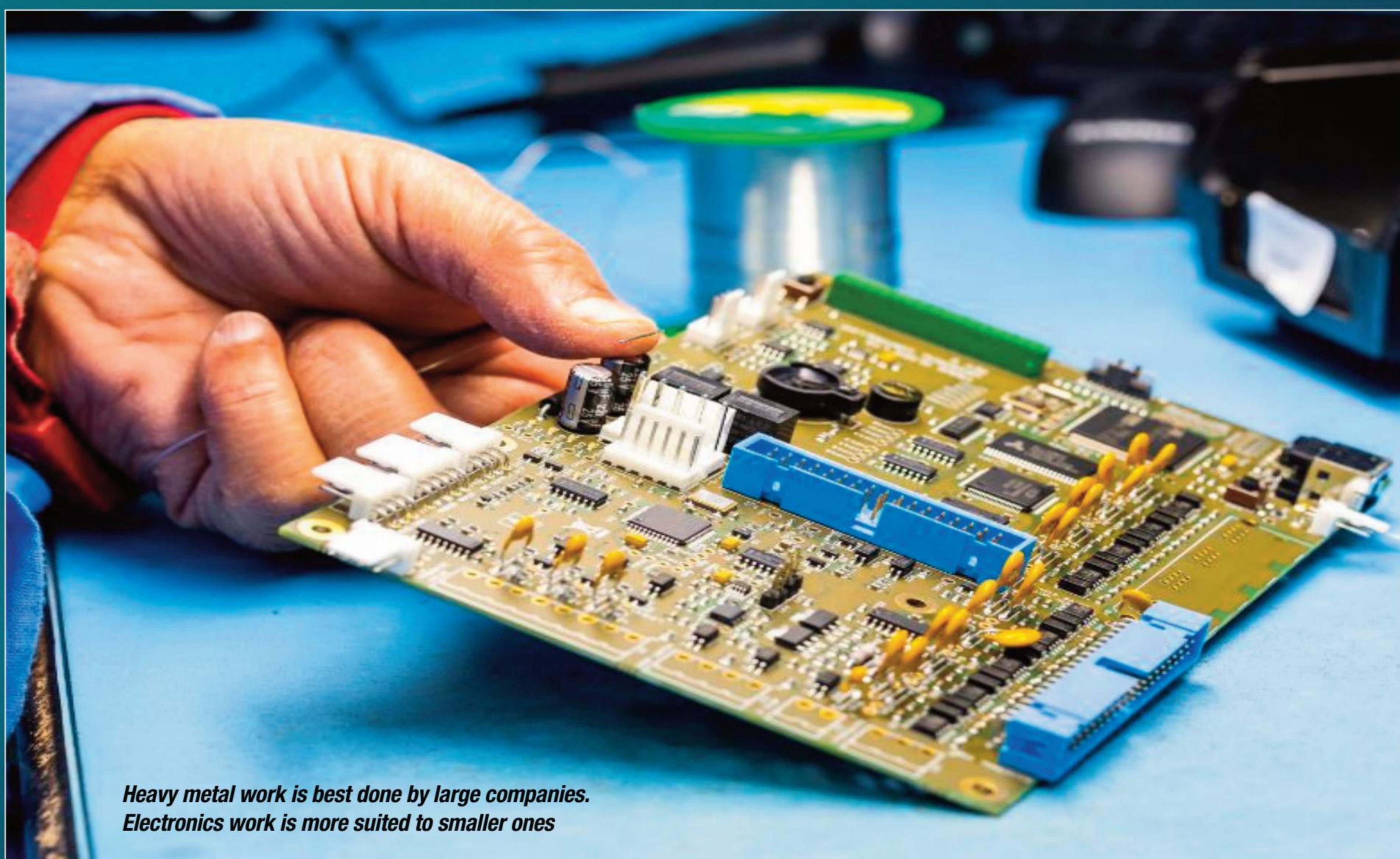
further change in government and the cycle of review-Defence Review-DIS is launched again. Just in time to catch its own tail as it chases the solution around Whitehall. The term Whitehall is used quite deliberately because ineffective DIS seems to be an incurable British disease. Other countries have similar problems and seem to find solutions to them. Things might need fixing or adjusting down the road, the DIS has at least got on the road, and there is no need to take the engine out and the wheels off to change a plug.

Where DIS have been successful it has been because MoD and Industry have worked on it as equal partners. Industry has bought best practice to the process, and both have a clear set of objectives and understanding of the ground rules. Classic examples of the was the Sector Transformation of CBRN and Team Complex Weapons. The latter seems to have worked the former didn't because the money was ripped out of the sector as it was becoming dangerously effective, and it withered on the vine. It would be worth examining what is actually needed in a DIS. Current thinking is that SMES need to be central to the achievement of a sensible DIS which delivers:

- **Better access to finance for SMES.**
- **Better Value For taxpayers from defence procurement and equipment usage.**
- **Increase in wealth for the citizens/workers in SMES and therefore the general population.**
- **Greater "Onshoring" of defence development and manufacturing capability leading to more employment, greater manufacturing capability and strategic self-sufficiency.**

- **Better engagement with industry and faster more timely procurement. Being on the front foot rather than ducking bouncers whilst wearing cast off protective equipment.**
- **SMES are not just price reduction profit maximisation mechanisms for large defence companies. They are individuals and companies with development and growth ambitions of their own.**
- **Fewer hurdles to get to market.**
- **Irreducible minimums.**
- **Reducing the number of "big company big errors" issues.**

There is no doubt that SMEs regard access to finance as a crucial part of the process. Here is the first major divergence in perception. Government regard this as finance from the financial markets. Industry knows its payment for delivery. The markets, like pigs sniffing for truffles, will find successful companies and provide them with additional financing but the key is delivering, and being paid for, orders. That implies orders to be won and delivered by SMES. If government is starving industry of orders no finance will follow. If government are not meeting, and not forcing their major suppliers to meet, the need for orders, SMES will withdraw and go away or find work elsewhere. Their entrepreneurial spirit, innovation and speed and quality of delivery will thus be lost to defence. That is the nature of the entrepreneurial SME. How to overcome this and meet the extremely low government target, 25% of defence business, to be placed with SMES, has been solved in other countries by mandating the target percentage of defence acquisition funding to be spent with



**Heavy metal work is best done by large companies.
Electronics work is more suited to smaller ones**

SMES is actually spent on defence capability acquisition. Currently major primes, by claiming service industries, toilet cleaning companies etc, are part of defence spending are dishonestly reporting of how much is actually spent with SMES. Growing up on a farm with a butchery business taught one at a very early age that fat pigs squeal the loudest. Implementing systems like this will produce squealers, the large defence companies and the civil service. The former because it will see a lucrative gravy train removed the latter because a repetitively used mould will be broken demanding unique solutions to problems.

Another divergence is SMES being told what they need and how to achieve it by people with little no experience of being in an SME. Central to this is a belief that SMES exist to service the supply chains of large companies. Many SMES want to place their products into the defence capability portfolio not make widgets for large companies which then charge exorbitant rates with extortionate profit margins to government. SMES want to grow in their own right. The number of major defence companies is diminishing as a result of competition, mergers or mismanagement so there is a need to replace them or at least bolster the numbers. The solution is not to bring in overseas companies but to grow organic SMEs by fostering and nurturing them and enabling their growth.

Many other nations have fostered and nurtured their organic companies by the use of offset. It is a given that overseas companies are needed simply because decades of failed DIS and failing to spend enough on defence have left gaps in UK capability. By forcing these overseas companies to place or fund work for UK Defence with UK SMES taxpayers' money is kept onshore, the UK's organic capability and exports increase and there are social benefits related to onshore employment with increased government revenue from taxes. A more enlightened procurement policy requiring procurement branches to show the strategic benefit of, and why, an offshore procurement must be made, why offset should not be applied and the ongoing benefits of not doing so would soon yield results. The potential export earnings of onshore manufacture must also be part of any DIS.

Some countries have opted for an annual irredeemable minimum procurements level of certain non-contentious items agreed on a cross-party basis and reserved for SMES. Apart from certainty of procurement, and continuous industrial activity, it speeds procurement and helps to maintain a dialogue between MoD and Industry. Dialogue between the two in general is critical because instead of MoD asking for something and being prisoner of its own experience and imagination in what they ask for, they are exposed to a wider view. Dialogue gives MoD the chance to look at what is available, what might be available and how new concepts might fit into the capability catalogue. This continuous procurement will lead to faster procurement, fuller orderbooks and thus provision of finance to SMES. It will also get rid of the huge annual workload procuring routine supplies thus freeing up MoD resources to either be redeployed or saved and move things through the systems with a greater degree of certainty.

All SMEs are agreed that getting to the "MoD Market" is horrendously difficult, expensive and convoluted and once there actually responding to tenders is fiendishly and unnecessarily

complex. Their views are firmer than this, but this is a family magazine. Some things that could be done to improve this situation would be to make an immediate reduction of 25% in the numbers of procurement officials. In that way only the things that are really essential would be addressed. Using a vastly simplified procurement bureaucracy i.e. the number of forms that have to be filled and boxes ticked is also important. Once again only doing what is really necessary. Mandate a time schedule, by value bands, for any procurement. Big companies not being allowed to bid for small contracts and not being allowed to circumvent this by aggregating several smaller contracts into one larger one would also steer work to SMES. By all means have a graduated scale of hurdles to be jumped as the value of a contract increases but the converse of this is don't use the same mechanism to purchase colouring crayons as nuclear submarines.

The MOD risk assessment model is patently wrong otherwise why would so many large companies; go broke or fail on large contracts or underprice and then have to demand more money. Part of that risk assessment is failing to appreciate how fast technology moves and how quickly obsolescence is upon a programme. Faster order placement, brought about by reduced bureaucracy and less adherence to government, Treasury induced, procedures and mandating a required procurement i.e. government, timetable for a purchase would help remove this problem and reduce the risks to companies. It is a truism that delay raises costs and brings obsolescence closer. Delay is normally caused in the pre manufacturing activity. Reducing this delay is crucial especially for SMES who's boredom threshold with government's excuses for inactivity which are both repetitive and boring is very low. The solution to this is that from the moment a capability requirement is agreed, depending on the value of the contract, a fixed timetable must be met. If government changes the requirement or shilly shallies in the process the bidders would have to have their costs plus margin reimbursed. If a bidding procedure is cancelled the same stricture should be applied. This would help remove the burden that bidding for MOD contracts forces SMES to carry.

There are quite simply many relatively easy procedural activities that can be undertaken to make the Defence Industry more attractive to SMES. The real requirement is a need to grasp the nettle to take advantage of the innovation and agility coupled with entrepreneurial spirit SMES potentially bring to the party. They do come because the current policy does not give them sufficient encouragement to take part, and keep taking part, too many, having tangled with the UK Bureaucracy suffer from once bitten twice shy. The current policy does not encourage them. Will the next?

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Life-saving T4 robot to be spotlighted at IDEX

Complex military missions can often put troops in considerable danger.

Whether it's hazardous materials clean-up, chemical, biological, radiological, nuclear and explosives (CBRNE) detection, or explosive ordnance disposal (EOD) missions, service people put their lives on the line every single day in their efforts to make the world a better place.

Robotics clearly plays a critical role in keeping military personnel safe, and large robots such as L3Harris Technologies' T7 are often called

upon to complete dangerous tasks to keep soldiers out of harm's way. In fact, the large T7 is currently being deployed by the U.K. Ministry of Defence, U.S. Air Force and Australian Defence Force to support EOD missions on a global scale.

Despite their many benefits, however, from impressive arm strength to long reach, larger robots aren't always the most appropriate choice. Some often require the help of multiple individuals for transportation and setup, as well as a large area for storage. Likewise, large robots are not best suited to operation within tighter spaces. Medium-sized robots are more easily transported and able to access smaller spaces; seemingly an ideal solution.

The issue is that historically medium-sized robots just didn't have the capability to succeed against demanding EOD tasks. Manipulator reach, high-power EOD disruptors and fewer payload capabilities simply didn't enable the medium platforms to succeed often enough. That is, until now.

The T4 ushers in a new era for robotics

L3Harris' T4 robot offers large robot capabilities in a medium-sized package. Weighing in at just over 100kg, the T4 outperforms all other medium-sized robots as well as many large ones. It can be transported with ease and rapidly broken down into subsystems to be carried by two people. Incredibly capable, the T4 robot's best-in-class manipulator reach and superior strength set it apart from others in its weight class, able to perform tasks previously beyond the scope of a medium robot. The world's first medium-sized robot to offer haptic force feedback, the T4 allows the user to physically "feel" what its robot arm is doing or feeling, enabling mission-critical precision and human-like dexterity during complex tasks. Operating the robot feels as natural as moving one's own hand. Highly intuitive control and an intelligent user interface enables rapid completion of demanding and intricate jobs such as unzipping bags and opening small compartments like glove boxes,





keeping operators out of harm's way and maximising mission effectiveness.

The T4 is able to fire the highest power EOD disruptors of any medium-sized robot, such as Hotrod, Pigstick, 20mm Neutrex and 29mm Neutrex. Its patented recoil-absorbing system reduces recoil forces to its arm by an astounding 90%, allowing it to fire repeatedly with maximum disruptive effect and no robot damage. Hardened against electromagnetic interference (EMI) due to its robust aerospace-grade design, the robot is also optimised to operate alongside powerful electronic countermeasures without disruption.

Extremely mobile and manoeuvrable, thanks to a unique stabiliser design and an all-terrain, all-weather track system, the T4 provides unparalleled, uncompromised performance. What's more, its ruggedized design ensures it thrives in even the harshest of environments, so whether faced with sand, rocks, mud, water or high temperatures, it's ready for any challenge. Multiple mission-specific attachments, sensors, payloads and a simple interface mean the T4 is able to rapidly adapt to evolving threats and changing missions, both now and in the future.

Robots that reduce the cognitive burden

As the T4 robot is built on the foundations of the T7 system, it shares several of the same features and capabilities as its predecessor. The most important of these is that the unique haptic force feedback controller is compatible with both systems. This means operator cognitive burden is substantially reduced and required training is streamlined and minimised. Operators can even switch between the robots during missions using a single controller, meaning both systems can be used simultaneously. Deployment, support and repair of the robots is made much simpler, as the T4 and T7 share many common parts.

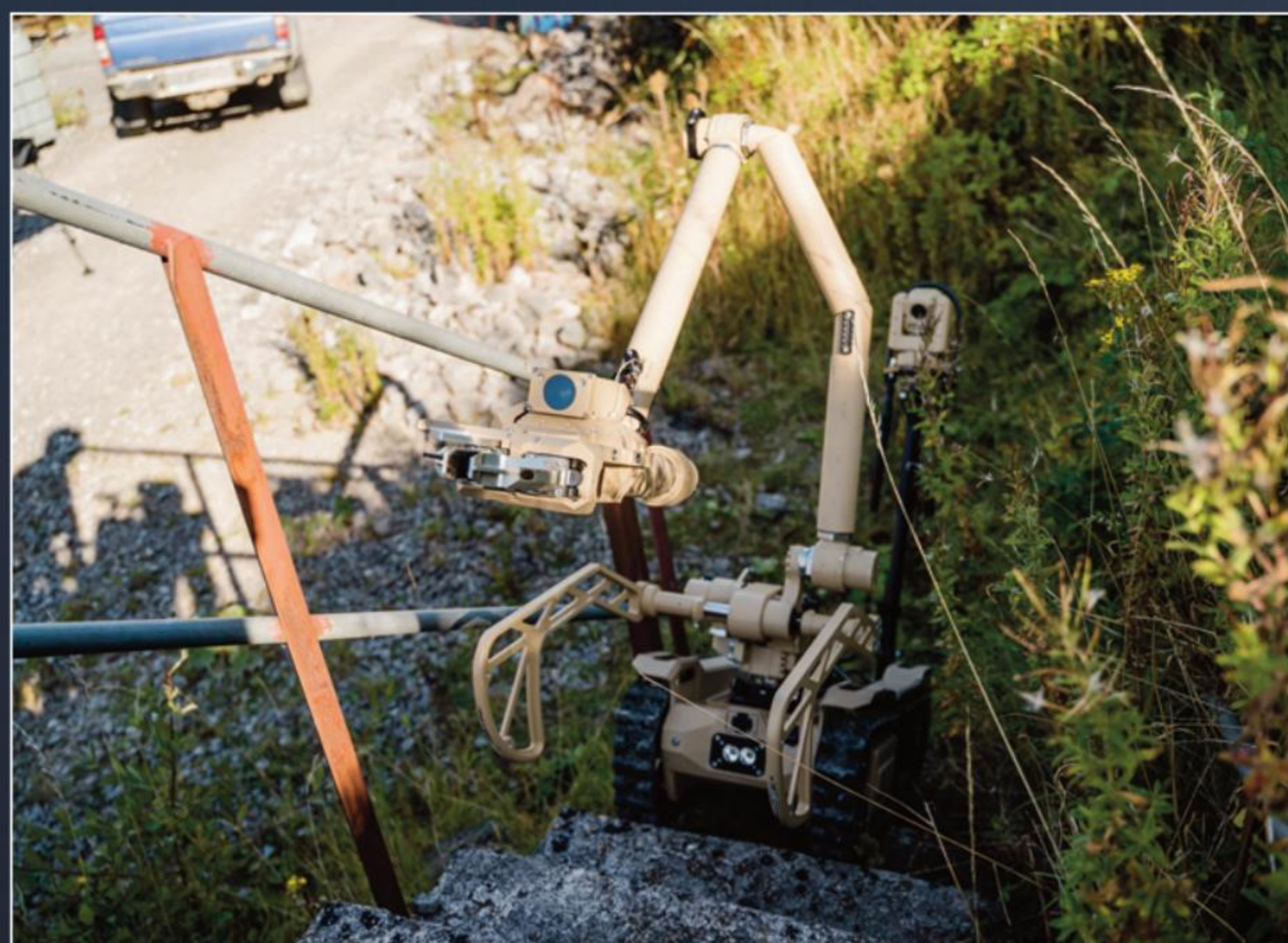
The T4 robot will be on display at this year's IDEX in Abu Dhabi from 17 - 21 February. To get up close and personal with the T4 and understand more about how it saves lives, reduces the cognitive burden and offers unmatched performance and control for complex missions, visit L3Harris on **Stand 03-C11**.

In the meantime, you can discover more about the T4 [here](#).

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The Tactical Edge: NANUK Cases Designed for Military Excellence

In today's fast-paced military environment, gear reliability is non-negotiable. Equipment must be robust, dependable, and ready to perform under the most challenging conditions. Trusted worldwide, NANUK cases are known for their unmatched durability, security, and versatility. Designed and made in Canada, they provide a tactical edge to keep mission-critical gear protected wherever the battlefield takes you.

Built to Withstand the Extremes

NANUK cases exceed military standards with IP67 waterproof and dustproof ratings, offering protection in deserts, jungles, or arctic conditions. Made from lightweight, indestructible NK-7 resin, they safeguard gear through rigorous transport and deployment.

On top of that, our eco-friendly R-collection, made from post-consumer recycled resin, meets government sustainability standards without compromising performance.

Customization for Mission-Specific Needs

Recognizing that no two missions are the same, NANUK and our partners offer extensive customization options to meet the specific needs of military professionals. Customization capabilities include:

1. Precision-Cut Foam Inserts:

Tailored to fit your equipment with millimeter precision, these inserts provide optimal protection and organization for firearms, drones, communication devices, medical supplies, and more.



2. Custom Case Sizes and Configurations:

Choose from over 40 standard injection molded case sizes, or work with us to design a bespoke solution tailored to your operational requirements.

3. Color and Branding Options:

From military-standard colors like olive drab and tan to custom logos and markings, NANUK Cases can be tailored to align with your unit's identity.



4. Logo /Lid Printing :

Whether it is for brand recognition or product identification, we have the ability to print custom logos or designs directly onto case lids, ensuring your cases stand out while maintaining professionalism and functionality.



Designed for Efficiency

NANUK cases combine durability with ergonomic handles, lightweight construction, stackable designs, and a secure PowerClaw latching system for reliable transport and storage.

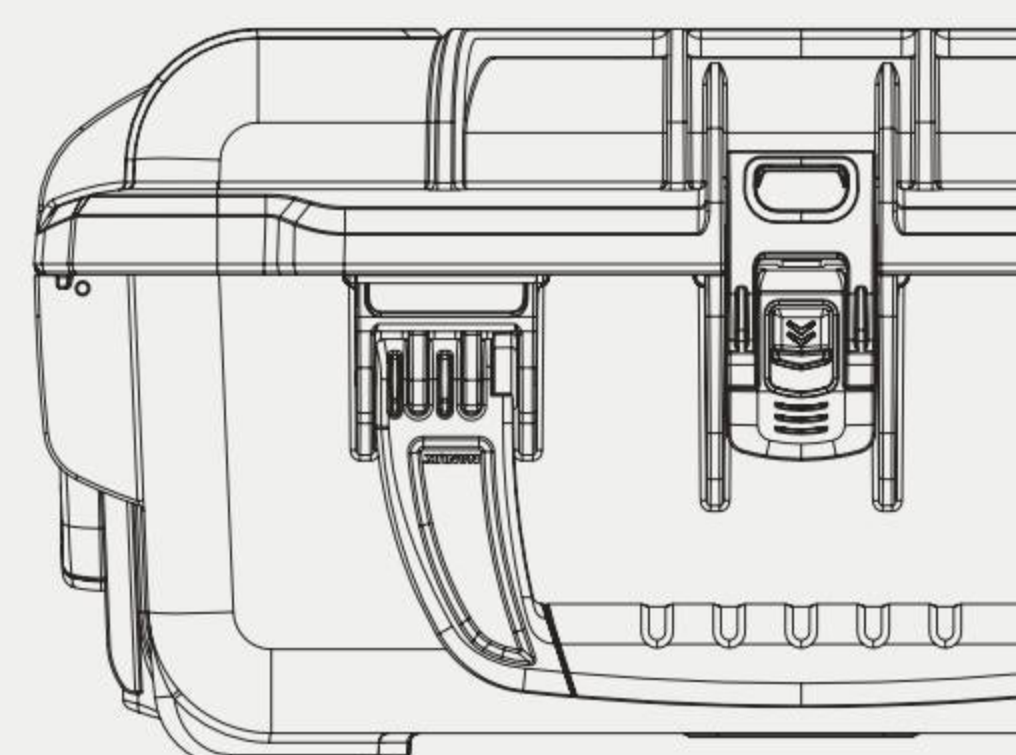
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MIL-SPEC tested, NANUK cases excel in protecting sensitive gear during transport and in combat. Armed forces worldwide trust us for our quality and innovative solutions.

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CERTIFICATIONS



**DEF-STAN 81-41
STANAG 4280**

*Dry Heat / Low Temp
Vibration / Water Spray-Rain
Impact-Drop*



MIL-STD-810H

*High Temp / Low Temp
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Vibration / Transit Drop / Fungus*



IP67

*Dustproof
Waterproof*



**Specifications
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GLOBAL COATINGS

THE GOLD STANDARD IN DEFENCE COATINGS

HOW TRIMITE GLOBAL COATINGS IS SETTING THE BENCHMARK FOR MILITARY-GRADE PROTECTION

A testament to its commitment to excellence, Trimite's DEF STAN 80-225 compliant coating system has set new standards in the industry, merging high-performance military coatings with rugged durability and the aesthetic precision that modern defence demands.

At the core of this specification is a series of advanced paint systems D00383 Polyurethane Primer and D00294 NATO Green Polyurethane Topcoat. The system is a Chemical Agent Resistant Coating (CARC) and Infrared Reflective Technology (IRR), specifically designed to withstand chemical agent warfare and reflect infrared radiation. It can handle the most demanding military environments, with the NATO Green leading Trimite's defence colour lineup, revered for its performance and iconic look.

DEF STAN 80-225: A RIGOROUS STANDARD FOR MILITARY COATINGS

The DEF STAN 80-225 standard, developed by the UK Ministry of Defence, is among the most stringent benchmarks in the world for military coatings. This standard demands not just protection against wear but resilience under extreme conditions, ranging from the sweltering Middle Eastern deserts to the frigid Arctic. Trimite's DEF STAN 80-225 compliant systems deliver unmatched durability and protection, passing the comprehensive testing for CARC products by the UK's Defence Science and Technology Laboratories (DSTL) at Porton Down, reinforcing their reliability.

For Trimite, DEF STAN 80-225 compliance symbolises a significant milestone, but also a continuous pursuit of innovation. As the challenges faced by military equipment evolve, Trimite remains at the forefront of coating technology, advancing formulations that not only meet the current standards but anticipate future needs.

The DEF STAN 80-225 compliant systems stand as a testament to their reputation for excellence in the field of military coatings—a reputation built on decades of research, development, and collaboration with industry partners. In a sector where the stakes are high and performance is paramount, DEF STAN 80-225 compliance is more than a certificate of quality: it's a mark of trust. Trimite's unwavering dedication to meeting this standard underscores its role as a leading partner for the defence industry, ensuring that critical assets are protected, reliable, and ready for the challenges of modern military operations.

www.trimite.com/defence



THE FLAGSHIP NATO COLOUR

A cornerstone of Trimite's reputation, NATO Green is chosen extensively for its effectiveness in woodland and temperate environments, offering a consistency with this colour that ensures long-term durability and resistance to fading.

The manufacturing consistency across large production batches, displays Trimite's commitment to high-quality manufacturing processes that meet the most rigorous durability standards with precision.



STANDARDS A LEGACY OF INNOVATION AND DEPENDABILITY

With over eight decades of experience, Trimite Global Coatings has become a trusted name in the defence industry. Trimite's name is synonymous with products that meet the demanding DEF STAN 80-225 compliance expectations. By working closely with Original Equipment Manufacturers, Trimite ensures the development of military equipment that is ready for the challenges of modern warfare.

This commitment to quality is further evidenced by Trimite's membership in the British Coatings Federation (BCF) and Made in Britain programs, which highlight the company's excellence and their leadership within the global defence industry.

THE PINNACLE OF RELIABILITY IN DEFENCE COATINGS

With its DEF STAN 80-225 compliant system, Trimite has set the benchmark for reliability. Trusted by defence organisations worldwide, Trimite continues to rely on to produce military equipment that can withstand the most demanding conditions. In a field where reliability is essential and stakes are high, Trimite provides the protection, and performance. Trimite remains a leader in the industry, that safeguards and supports, ensuring that every application meets the highest standards of unwavering commitment to excellence.



GREEN: ICONIC AND ENGINEERED FOR EXCELLENCE

Our defence coatings range is NATO Green. Used for its exceptional camouflage capabilities, NATO Green is ideal for use in woodland and temperate environments. Trimite has maintained exceptional durability over time, meeting the military's precise demands for long-term protection and performance.

The consistency of NATO Green, across all production runs, is a testament to our expertise in quality control and advanced manufacturing processes, ensuring this iconic shade meets defence-grade standards in every application.



DURABILITY IN DEFENCE COATINGS

Trimite's defence coatings have established itself as a trusted partner in the military industry, renowned for its reliability, innovation, and high standards, with a proven track record of meeting and exceeding client requirements and OEM standards. At Manufacturers (OEMs), Trimite supports the challenges of the modern battlefield.

Trimite's active participation in the British Coatings Association highlights their dedication to British manufacturing excellence in the defence sector.

COATINGS

Trimite has set the bar for excellence in defence coatings. Our commitment to provide the advanced coatings that OEMs demand, through the test of time, no matter the environment. Trimite's coatings stand as a guarantee of quality, reliability, and performance in military coatings, committed to advancing technology and innovation is a testament to innovation, durability, and an



A SYSTEM BUILT FOR DEFENCE

Trimite's DEF STAN 80-225 compliant system is specifically designed to meet the rigorous standards required by the UK Ministry of Defence. This system not only provides protection but ensures equipment durability in extreme environments—from corrosive saltwater regions to the UV-intense deserts of the Middle East. Each component of this system plays a critical role in creating a robust, high-performance finish.

SURTEC 650 PRETREATMENT:

At the foundation of this system lies SurTec 650, a state-of-the-art chemical pretreatment for aluminium and other metals. It ensures exceptional adhesion and corrosion resistance, serving as the perfect base for subsequent coatings. With its compliance with REACH and RoHS regulations, SurTec 650 is an environmentally responsible solution that offers outstanding protection against harsh environmental stressors, particularly in marine and aerospace applications.

HP20 ETCH PRIMER:

The next layer is HP20 Etch Primer, a high-performance primer designed to create a strong bond between the pretreatment and topcoat. HP20 is ideal for aluminium and ferrous substrates, offering excellent adhesion, flexibility, and corrosion resistance. It enhances the durability of the overall coating system, ensuring long-term protection and performance even in highly demanding conditions.

D00383 POLYURETHANE PRIMER:

Trimite D00383, the ultimate polyurethane primer designed for excellence. Engineered with cutting-edge technology, this innovative product delivers unmatched durability, performance, and versatility. Offering superior protection, Trimite D00383 provides exceptional resistance against corrosion, abrasions, and environmental damage, ensuring long-lasting performance even in the harshest conditions. Designed for efficiency, it features smooth application, reliable adhesion, and a premium finish, ensuring optimal results with minimal effort. Manufactured to meet stringent industry standards, it is also suitable for use with CARC (Chemical Agent Resistant Coating) finishes, further expanding its utility in specialised environments. Developed for defence applications, D00383 enhances the protective capabilities of the overall system, making it indispensable for mission-critical equipment.

D00294 NATO GREEN TOPCOAT:

Crowning the system is the D00294 NATO Green topcoat, a DEF STAN 80-225 compliant polyurethane finish renowned for its versatility and resilience. This topcoat delivers outstanding UV stability, chemical resistance, and durability, making it a preferred choice for military vehicles and equipment. Its iconic NATO Green shade is not only effective for camouflage in woodland and temperate environments but also exhibits exceptional resistance to fading and environmental degradation.

Together, these three components form a robust defence solution that ensures superior protection, performance, and compliance with stringent military standards.



TRIMITE

LEADING COATING SUPPLIERS



DEFENCE-READY COATING SOLUTIONS

For over a decade, Trimite has been a key supplier of DEF STAN and specification coatings to the defence industry. Our coatings are engineered to protect and perform under the most demanding conditions, with a comprehensive range that includes:

- CARC, IRR, and non-slip products
- Primers, Intermediates, Undercoats, and Finishes
- Single-pack air-drying and stoving systems
- Two-pack epoxy and polyurethane coatings

MISSION-CRITICAL CARC COATINGS

As the threat of chemical weapon attacks increases, Chemical Agent Resistant Coatings (CARC) have become essential for safeguarding personnel and equipment. Specified by the UK Ministry of Defence and approved by the UK's Defence Science and Technology Laboratories (DSTL), Trimite's CARC coatings are trusted to:

- Enable effective decontamination of equipment.
- Support rapid return to operational readiness.

Our CARC solutions feature prominently in major European military programs, including the Mastiff, Ridgeback, Jackal, and Warthog armoured vehicles. We're also proud to have contributed to a wide range of Urgent Operational Requirements (UOR), delivering high-performance coatings when they're needed most.

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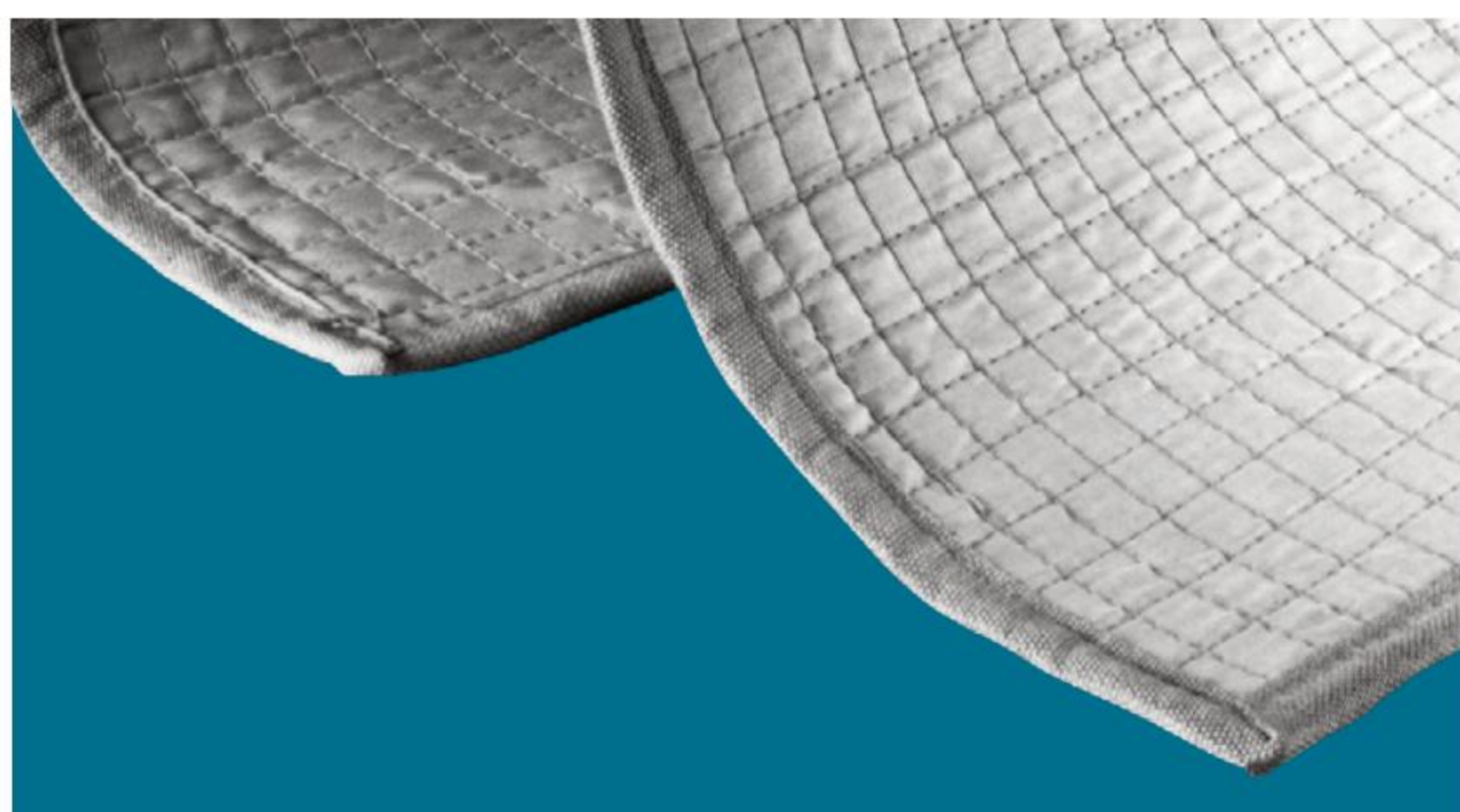


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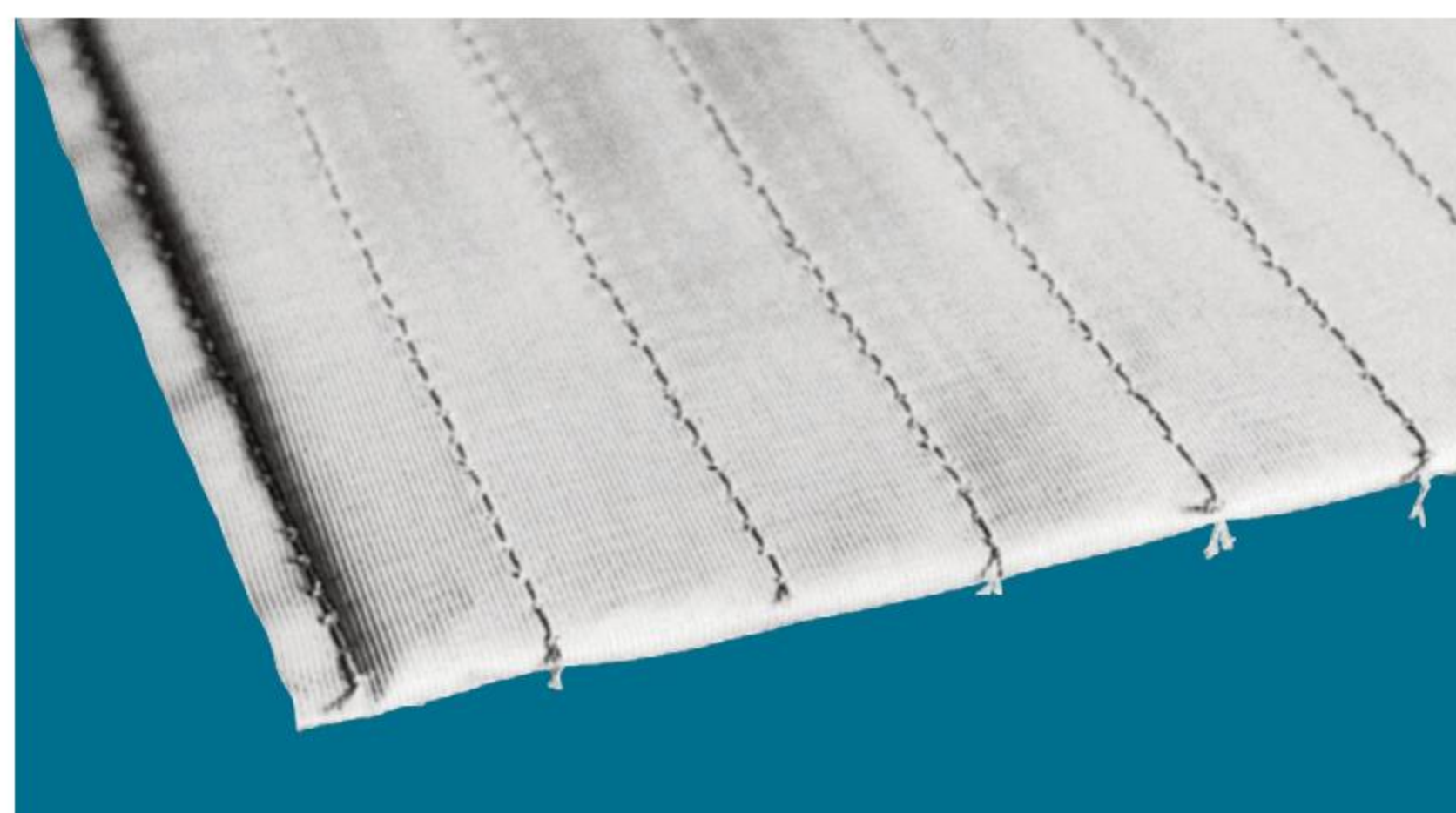


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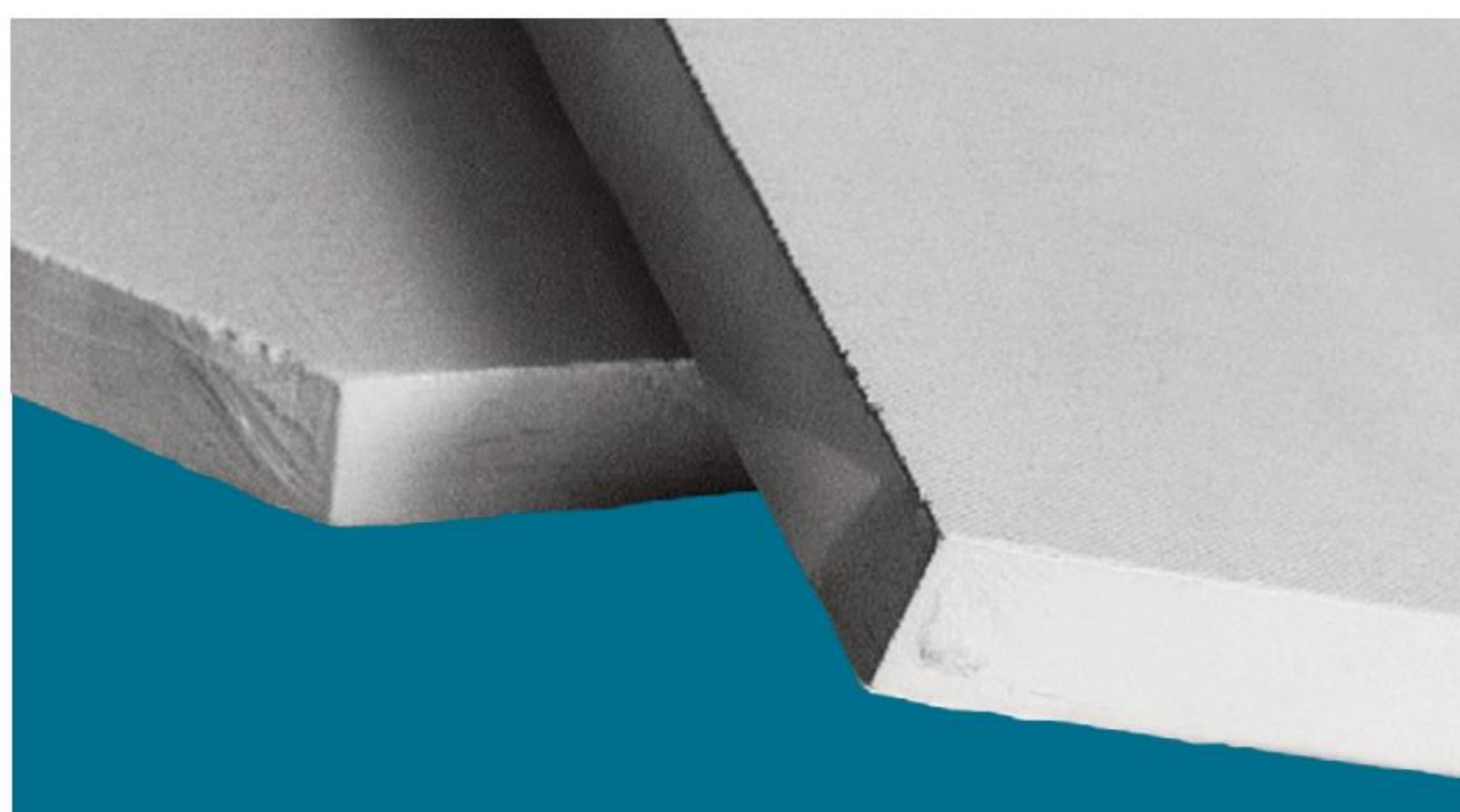
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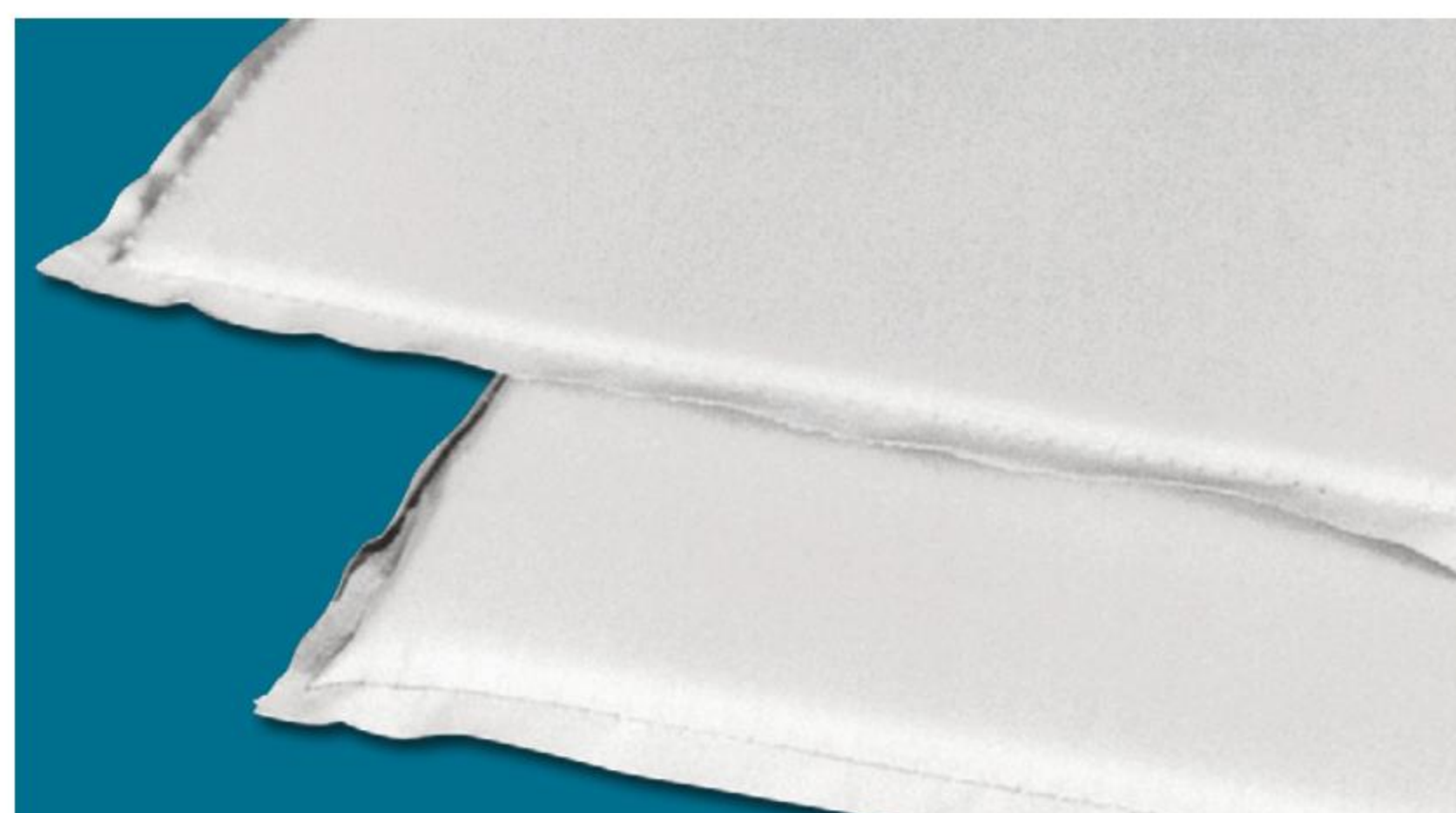
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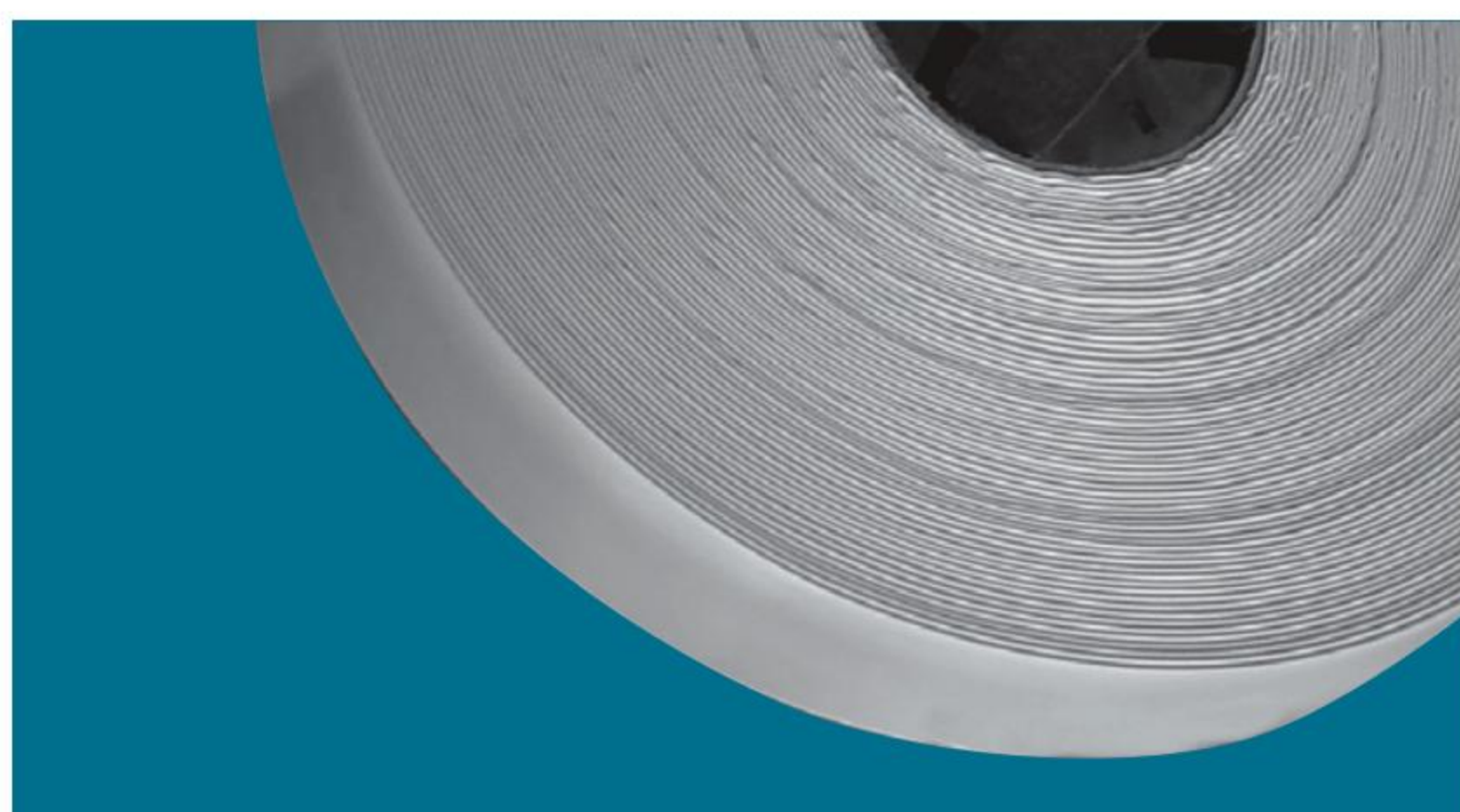
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