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We welcome you to our first edition of 2024.

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

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The Advantages of SWIR for Daytime Detection in C-UAS

In the rapidly evolving field of counter-Unmanned Aircraft Systems (C-UAS), the choice of optics plays a crucial role in ensuring effective detection and response.

Shortwave imaging systems offer several advantages over visible and midwave imaging systems for daytime range detection, making them a critical inclusion in any multi-sensor C-UAS payload.

In this discussion, we will explore why shortwave zoom lenses are exceptionally well-suited for countering the emerging threats posed by unmanned aerial systems and why G&H StingRay's FireAnt series is uniquely positioned to address that need in particular.

General Advantages of SWIR for Daytime Range Detection and Tracking:

Atmospheric Transparency: Shortwave infrared (SWIR) light experiences less atmospheric absorption and scattering compared to both visible and midwave infrared (MWIR) light during the day. This means that SWIR imaging systems can see through atmospheric disturbances, such as haze, dust, and fog, more effectively. This improved visibility is crucial for long-range detection during daylight hours.

Solar Glint and Background Radiation: SWIR sensors are less susceptible to solar glint, the reflection of sunlight off objects, compared to MWIR sensors. MWIR sensors can be overwhelmed by the bright background radiation from the sun, which can limit their effectiveness during the daytime. SWIR sensors, on the other hand,

can operate more effectively in the presence of strong sunlight, allowing for better range detection.

Reduced Heat Signature: Unlike MWIR systems, SWIR imaging systems do not detect thermal radiation. This means that they are less affected by variations in temperature and do not suffer from the same challenges as MWIR systems when it comes to distinguishing between objects with similar thermal profiles. In daytime conditions, this can lead to improved accuracy in range detection.

Improved Target Discrimination: SWIR imaging systems often provide better target discrimination and identification due to their ability to detect variations in material properties. This can be especially important during daytime operations when identifying specific objects or targets is critical.

That's a pretty compelling argument for the incorporation of SWIR in C-UAS generally, but not all SWIR imaging systems are created equal and G&H StingRay has long been the industry's leader in this space. That's why we confidently announce the newest addition to the FireAnt series, our ruggedized F/6 80-800mm zoom lens. Designed for direct compatibility with 5µm and 10µm SXGA image formats, the 80-800mm FireAnt is a testament to a performance-first design methodology that incorporates SWIR specific materials and anti-reflection coatings, an approach yielding the best resolution and transmission available in a COTS SWIR imaging system.

Many commercially available visible and shortwave zooms allow for a reduction in aperture as you move from the wide field to narrow field positions, whereas every FireAnt lens offers a constant aperture through its respective zoom range, a feature that lends itself directly to C-UAS applications:



Advantages of a Constant Aperture for C-UAS:

Target acquisition and tracking: It's crucial to quickly acquire and track threats. A zoom lens with a constant aperture allows for seamless zooming without changes in exposure, which aids in maintaining a clear and consistent view of the target. This is particularly important in dynamic situations where rapid adjustments are necessary.

Depth of field control: The ability to control depth of field can help isolate and focus on specific subjects or areas of interest, enhance object recognition, or aid in target identification. A constant aperture zoom lens allows for consistent depth of field control throughout the zoom range, ensuring clear and sharp focus regardless of the focal length used.

Consistent power density: A constant aperture zoom lens helps maintain a consistent power density when imaging a laser beam throughout the zoom range. This is important for shortwave targeting applications where maintaining a specific power density is crucial for effective operation. Consistency in power density ensures consistent performance and reliable results across different zoom levels.

G&H | StingRay - Industry Leading High-Performance SWIR:

In conclusion, as the field of counter-Unmanned Aircraft Systems (C-UAS) continues to evolve, the choice of optics becomes paramount for effective detection and response. Shortwave imaging systems,

particularly SWIR zoom lenses, offer distinct advantages over visible and midwave systems, especially during daytime range detection. They excel in atmospheric transparency, are less susceptible to solar glint and background radiation, exhibit a reduced heat signature, and provide superior target discrimination. Among SWIR zoom lenses, G&H StingRay's FireAnt series stands out as an industry leader. The latest addition, the ruggedized F/6 80-800mm zoom lens, is designed for optimal performance, incorporating SWIR-specific materials and anti-reflection coatings. Its constant aperture feature enhances target acquisition, depth of field control, and power density consistency, making it an ideal choice for C-UAS applications. G&H StingRay's commitment to innovation continues to address the evolving challenges posed by unmanned aerial systems, ensuring reliable and effective solutions in the fight against emerging threats.

gandh.com



I'm 'Ray.' But You Can Call Me 'Kilowatt.'

The year was 1961, and a young engineer in rural Pennsylvania was poised to make a decision that would shape both his future – and that of an entire industry.

A child of the Great Depression in the United States, Raymond H. Green built his first radio at the age of nine, had earned the nickname "Kilowatt" among his Science Club classmates and was voted as 'the boy most likely to succeed.'

Armed with knowledge of the design and manufacture of crystals and RF oscillators, a keen entrepreneurial spirit and an initial order for 100 R-C oscillators – which he built in the basement of his home – Ray Green's Greenray Industries was now officially open for business.

Oven Industries, a separate division of the young company, designed and manufactured proportional and thermostatic ovens, used to house electronic components. By 1963, Green had founded Metric Engineering to support the company's design and manufacture of specialized electronic test equipment and high power A.C. power supplies. And in 1964, Greenray International was established as the worldwide sales agent for the various affiliated companies.

Early in 1969, in preparation for the Apollo 10 launch later that year, NASA decided to equip the crew with a new color television camera. One critical component – a crystal oscillator tuned to the scan rate of home television screens – was designed, manufactured, tested by Greenray – and delivered to NASA in less than half the normal time.

It was during this Apollo 10 mission that a worldwide audience would enjoy the first live, color television views of Earth from space, thanks in part to a Greenray crystal oscillator.

By 1974, Greenray's business had grown and diversified, and the main facility had grown to 20,000 square feet. A new, thick film hybrid manufacturing line incorporated thick film printing, firing of the substrates, trimming resistors, wire bonding IC and transistor die, and resistance welding of the final package.

The company now produced a broad line of crystal oscillators that included TCXOs, VCXOs and clock oscillators, and Military QPL qualification to certain part numbers in MIL-PRF-55310 was available.

In 1981, Greenray employed upwards of 80 professionals and had a well-earned reputation for producing innovative, high-performance crystal oscillators for industrial and defense markets.

Ray "Kilowatt" Green, having realized many of his childhood dreams and professional goals, retired from the company. An early adopter of computers, he would go on to write several articles and even a book – "Control Your World" – about remote control of household items using early home computers.

Ray Green died peacefully in Saint Petersburg, Florida on Sept. 19, 2011 at the age of 80. Today, his legacy is alive and well in rural Pennsylvania – the home of Greenray Industries, Inc.



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For over 60 years, Greenray quartz crystal oscillators have served as high reliability reference sources for industrial and military applications that require low g-Sensitivity and excellent phase noise in order to optimize system performance while operating under the most demanding environmental conditions.

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The Evolution of Military Communication:

From Radios to Advanced Digital Systems

In an era of rapid technological advancement and digitalization, the need for secure, reliable, and fast communication systems in the military has never been more critical.

These communication systems play a pivotal role in combating modern threats and safeguarding troops during complex operations. In this article, we will delve into the latest developments in military communication technology and explore how they are reshaping defense operations.

Modern warfare demands integrated tactical communication systems that provide instantaneous connectivity across diverse platforms and systems, enabling real-time strategic decision-

making on the battlefield. The evolution of military communication has come a long way since the days of Morse code and signal flags. Today, smart communication solutions offer military personnel numerous tactical advantages that were unimaginable with analog systems.

The demand for new military communication solutions is evident in the projected growth of the global tactical communication market. According to a GlobalData report, this market is estimated to experience a Compound Annual Growth Rate (CAGR) of 3.68%, reaching a value of \$18.8 billion by 2031. Similarly, the global electronic warfare market is anticipated to be valued at \$11.8 billion by the same year.

Innovations in military communication are paving the way for enhanced capabilities on the battlefield. Technologies such as LiDAR for target tracking, detection, and tactical mapping, along with traditional communication tools like radios, satellite systems, and data networks, are enabling effective communication and coordination among military personnel.

Digital communication systems offer advantages such as clearer and more reliable channels. Integration with drones extends the reach of communication and enhances the availability of intelligence during operations. However, digital systems also introduce new challenges, such as vulnerability to cyberattacks, necessitating robust encryption methods. Additionally, communication systems used in combat must be rugged enough to withstand extreme environments.

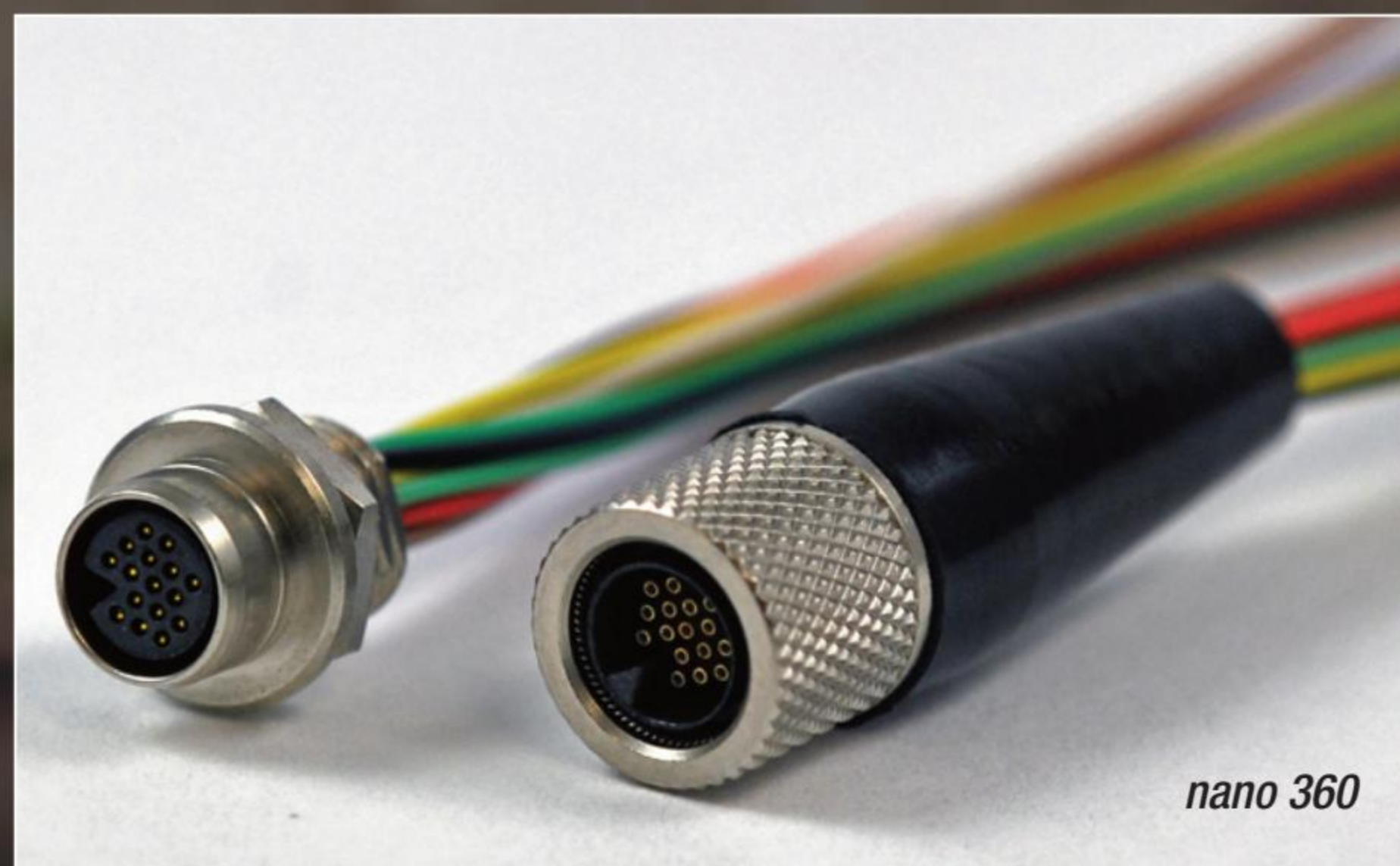
As modern warfare becomes increasingly technology-driven,



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various national defense forces are investing in command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) systems, as well as command and control systems (C2).

In 2022, the British Army commissioned L3Harris to supply 1,300 Multi-Mode Radios (MMR) for \$109 million to enhance interoperability between the military and its allies. The MMRs are expected to significantly improve battlefield communications due to their high portability and extended battery life, which is crucial for operations in remote locations.

Artificial intelligence (AI) and machine learning are poised to revolutionize military communications. The U.S. Army, for instance, has announced plans to invest more than \$200 million in AI and machine learning, along with over \$9.8 billion in network modernization. While AI can offer valuable insights for armed forces, its potential for misuse by hostile forces requires careful monitoring and management.

Military communication systems often operate in hostile environments where signal interference can reduce communication range and capacity. These systems require interoperable communication solutions that can be rapidly deployed and easily reconfigured to adapt to changing operational needs.

Cables and connectors play a crucial role in military communications by providing the physical infrastructure for transmitting signals and data between communication devices and systems. Robust and reliable cables ensure efficient transmission of voice, data, and video signals, allowing for the integration of various

components like radios, antennas, and data terminals, thus creating a unified communication network.

Omnetics Connector Corporation, a leading global provider of precision and high-reliability electronic connectors and interconnect systems, understands the critical importance of robust military equipment. With over three decades of experience in the field, Omnetics offers micro-miniature and nano-miniature interconnects that excel in challenging operational environments.

Omnetics' Bi-Lobe® / Nano-D Connectors, Micro 360® and Nano 360® Circular Connectors, Kilo 360™ Connectors, IP68 Connectors, and other customized solutions facilitate rapid setup and reconfiguration of communication networks. These solutions provide flexibility in extending or modifying communication links, accommodating diverse equipment configurations, and supporting mission-specific requirements.

In conclusion, the evolution of military communication from traditional radios to advanced digital systems is pivotal for modern defense operations. These advancements empower military personnel with enhanced connectivity, situational awareness, and coordination capabilities. As technology continues to evolve, robust connectors and communication solutions, exemplified by companies like Omnetics Connector Corporation, will play an integral role in ensuring the success and safety of military missions.

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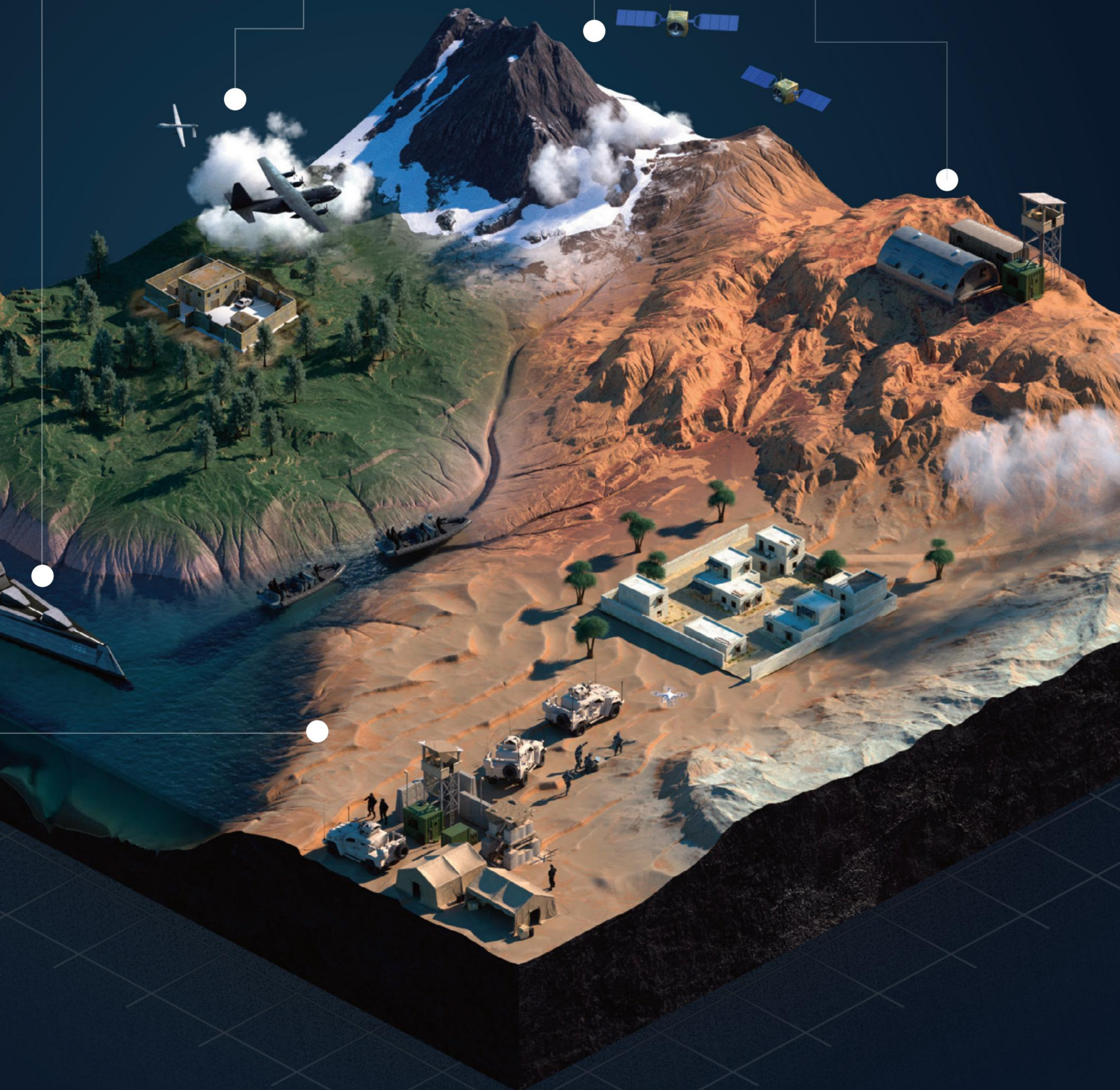
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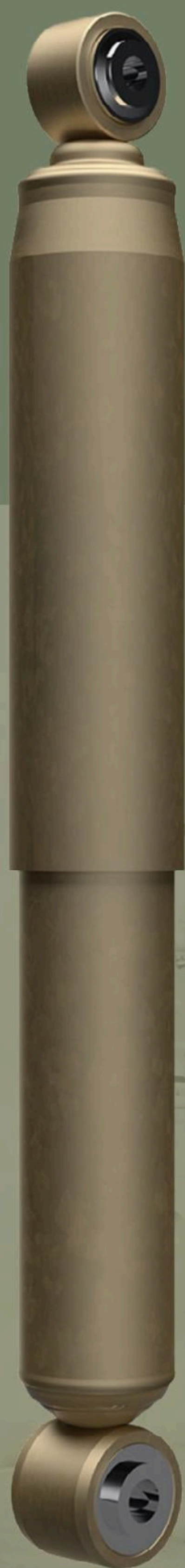
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AVDS-1790 Engine Donation



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The M60 is a key part of The Tank Museum's running fleet. This is in the segment of their collection that they retain in running condition for events such as TANKFEST - which itself attracts over 24,000 visitors.

Running vehicles is therefore an important part of engaging an audience in their story.

The Tank Museum has a strategy that maps a route to ensure that they can continue to do this sustainably beyond the centenary of World War Two.

As a critical component of the Cold War Story, the M60 is one of the vehicles they retain in their running fleet.

The engine that was currently used in the M60 is an original engine from the collection's "reference" M60. Horstman in partnership with RENK America donated a new AVDS engine for their M60 in order to retain it's operation and joy of seeing it in TANKFEST.

"We need to ensure that we have a reliable, high-quality engine to power this tank and delight our visitors for another 25 years and beyond" says the Tank Museum.

As an organization with a long pedigree in the manufacture of AFV parts, there are a number of vehicles featuring examples of Horstman's work dating back to the 1920s.

Most recently, Horstman also generously sponsored the repair and maintenance of The Tank Museums operational; Challenger 1 tank – rendering it fit for public displays once more.

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EXL-mast updated

WE ARE THRILLED TO INTRODUCE THE NEW EXL-MAST MODEL UPDATE!

This upgrade is designed to offer our customers even better performance, ease of use, and maintainability in operation. The EXL-Mast has been a long-standing favourite among many of our customers, and now it's even better. Thanks to the fresh model update, the EXL-Mast has reached a new level and provides several advantages that make it an integral part of your mast system.

Product Development Process

Consistently advancing our tactical mast technology play a pivotal role in our business, particularly when it revolves around building enduring customer relationships and products with extended lifespans. At Mastsystem, we collaborate closely with our clients and partners to acquire first-hand user experiences, real-world use cases, and feedback. This information, coupled with our internal testing, forms the basis for designing, implementing, and testing product feature enhancements in alignment with our ISO and AQAP quality standards.

The product development of the EXL-mast update was initiated in November 2022, and it proceeded exceptionally smoothly. We defined the areas for product improvement and gathered ideas from our customers, production teams, and internally. This collaboration provided us with valuable insights and ideas that

guided the entire upgrade process. Throughout the entire development project, approximately 70% of all customer-suggested improvement ideas have been implemented. This demonstrates our commitment to listening to our customers' needs and improving our product based on their feedback.

Just like all our products, the new EXL-Mast has been rigorously tested and proven to be functional.

Benefits of the Model Update

The new EXL-Mast offers numerous benefits from both a production and customer perspective.

Two key improvements include:

1. Enhanced Maintainability: Special attention has been paid to making maintenance easier in the new EXL-Mast. Maintenance procedures have been made effortless and quick, reducing downtime, and keeping the masts in peak condition. This means long product life cycle combined with low maintenance costs. Also, Dyneema-belt is now standard and further improves the reliability and reduces the needs for the maintenance.

2. Comfortable to handle: Additionally, the update focuses on the handle characteristics of the mast. The new mast is designed with user needs and ergonomics in mind, making it easier and more comfortable to handle.



The Future of the Mastsystem products

The EXL-Mast model update is ready, and the first upgraded masts are already in production. In the future, we will continue to update our other masts with the same principle, learning from our clients, our production, and our partners so that we can exceed our customers' expectations. Exciting new projects are already in the planning stages, and we can look forward to the world of tactical telescopic masts evolving into an even better and more efficient one.

Keep an eye out for future updates and be a part of Mastsystem's growing story. We look forward to how we can serve you even better in the future.

If you want to learn more about our updated EXL Mast, contact our sales team and inquire about a mast that suits your needs!

Facts about the EXL-mast

- *Tactical telescopic EXL-masts are mechanical winch and belt-operated masts, designed for larger and heavier top loads.*
- *EXL-masts are made of carbon and glass fibre composite material.*
- *Can be equipped with various antenna adapters and antenna positioning accessories.*
- *EXL-masts are telescopic masts for heights up to 50 meters (164 ft.) and 100kg (220 lb) top loads, depending on*

mast performance requirements. Other lengths with different top loads and specifications are available at request. If you have specific requirements, we customise our standard designs according to customer's specifications and requirements and painted in customer specific colours.

- *These mast systems have seen wide usage around the globe, from arctic surrounding all the way to scorching desert environments. EXL-masts have tolerance for harsh environments: carbon fibre construction withstands sand, dust, ice, and dirt.*
- *Field antenna mast, transportable with vehicle and deployable up to heights of 50-meters with minimal crew size are great option to enhance your tactical communication capabilities.*

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For individual units, SMART is ideal for fault detection and maintenance, equipped with capabilities such as warning notifications to prevent failures, automatic diagnostics for repair needs, and data logging for complete maintenance trackability. SMART can also be networked for simultaneous monitoring and control of hundreds of ECUs from one control point, allowing one operator to seamlessly direct maintenance and service for an entire ECU network.

Using a weatherproof CAT5e cable port located on the front of the ECU, SMART can:

- Detect maintenance or potential failures
- React to perform emergency shutdowns
- Enable lead-lag operations
- Initiate emergency load transfers
- Transmit notifications to the operator

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

- **SU-62 compact forward- or rear-facing seat**
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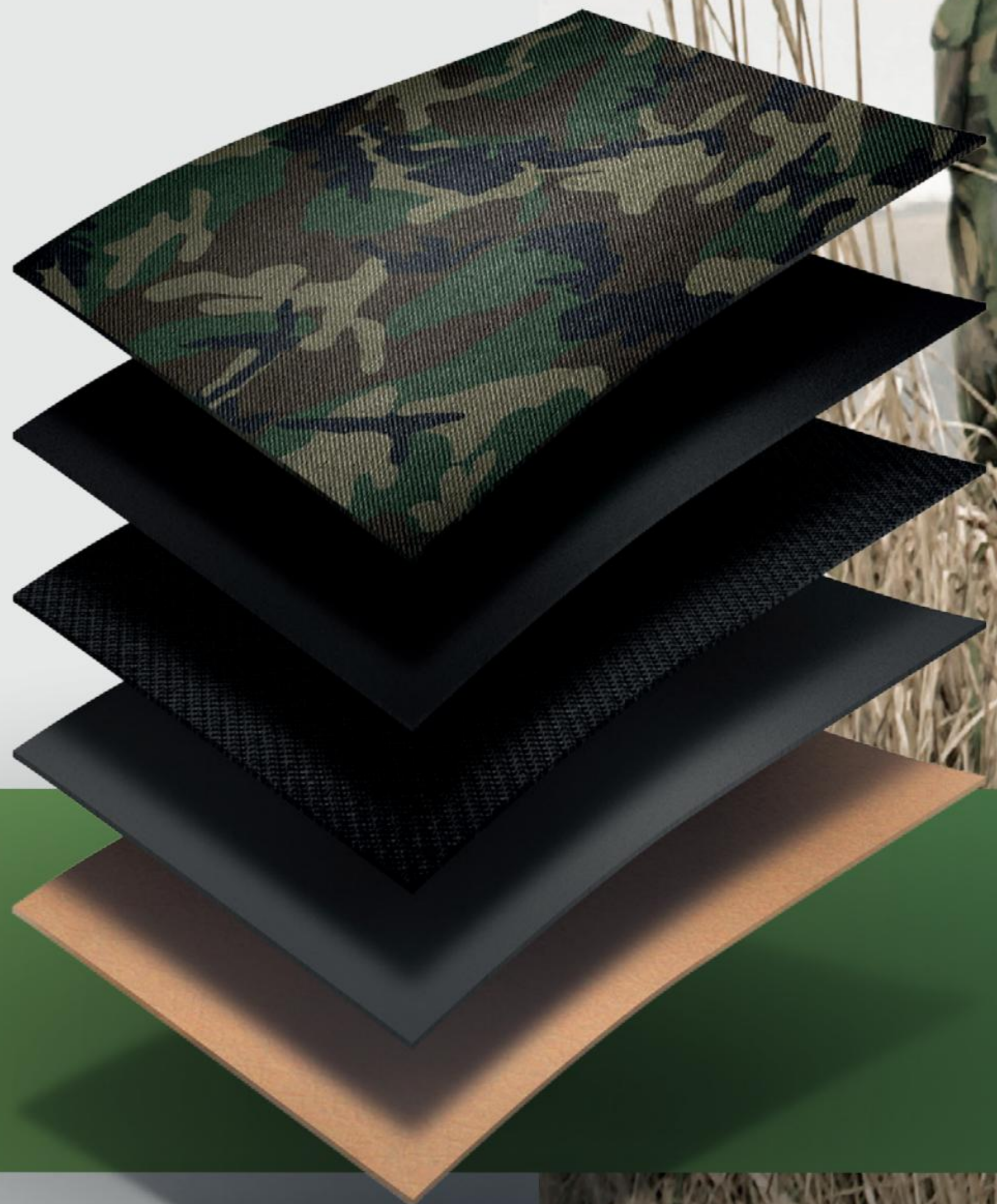
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THE WILL-BURT COMPANY ACQUIRES CLARK MASTS SYSTEMS LIMITED

The acquisition combines two companies renowned for innovative and high-quality mobile elevation products.

The Will-Burt Company, a world leader in the design, manufacture and sale of mobile telescoping mast, tower, and integrated trailer systems, is pleased to announce the acquisition of Clark Masts Systems, LTD. Clark is known globally for their fast-erecting, high-quality, and innovative field and vehicle deployed telescopic pneumatic mast systems.

INNOVAT



“We are pleased to add the high-performance Clark Mast range of mobile pneumatic telescopic mast products to the Will-Burt portfolio,” stated Richard Lewin, CEO and President of The Will-Burt Company. ***“The Clark Mast brand is well-known around the world for delivering high-quality products backed by exemplary service. The Will-Burt and Clark organizations have great mutual respect for one another and similar cultural beliefs that we expect will deliver increased value to our customers.”***

Clark Masts, first introduced in 1954 by Alec Clark, are lightweight, quick-erecting field masts that are highly versatile with commercial and defense variations. Clark also offers a value range of larger telescopic pneumatic masts that can be vehicle or field mounted and will complement the existing Will-Burt range of pneumatic masts.

Simon Bennett, Managing Director of Clark Masts comments, ***“I am delighted that we were able to bring these two great companies together. We have worked as friendly competitors for years and we have a mutual admiration for one another. It pleases me to know that the Clark brand will continue as part of the Will-Burt Company portfolio of world-class elevation products.”***

Clark production operations will continue to be located on the Isle of Wight, England and Simon Bennett will assume the role of General Manager of the operation to assure a smooth and successful transition. The business financial and accounting functions will be merged with Will-Burt UK located in Alton, Hampshire, England. Customers and suppliers are welcome to contact either Will-Burt or Clark personnel in their region of the world to receive prompt attention.

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We are committed to ensuring the absolute best quality service and products whilst delivering in a timely manor. Here are just a few of our business aims and ethics to show that not only are we an ambitious company, but we do everything to keep our carbon footprint low.



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How high-tech HF radios are boosting Tobago's disaster communications networks

Automatic link establishment in high-frequency (HF) radios means a faster response from emergency management teams and a reduced need for experienced operators.

The disaster management agency in the Caribbean island nation of Tobago is bolstering its emergency response systems. Tight state budgets and the increasing frequency of disasters as a result of climate change have led island officials to search for solutions and improved emergency communication equipment, including HF radios.

Calls for help were answered by Australia-based Barrett Communications, who have donated HF radios, antennas, and state-of-the-art equipment to the Tobago Emergency Management Agency (TEMA).

The tiny island is about 30 miles long and just over 10 miles wide at its longest point, possessing beautiful but rugged terrain. Its geographic location means the island is often hit by droughts, earthquakes, flooding and landslides. Just outside the hurricane belt, Tobago is still occasionally struck by devastating weather events such as Hurricane Ivan in 2004.

Crucially, the United Nations Development Programme has identified small island developing states as those most vulnerable to climate change. As part of this classification, Tobago is vulnerable to temperature increases, changes in precipitation and



A scout in Tobago uses a Barrett Communications high-frequency radio. (Photo provided by TEMA)

sea level rises. Other vulnerabilities include rising risks of flooding, increased frequency and intensity of hurricanes, hillside erosion and loss of coastal habitats.

Now, the Tobago Emergency Management Agency (TEMA) is preparing for the likelihood of a rising number of extreme weather events due to climate change.

With an urgent need to modernise its disaster response capabilities, the TEMA team was faced with another hurdle – inadequate state budgets made worse by Covid-19. Tourism is Tobago’s primary economic driver, and the sector fell flat during the pandemic. Budgets assigned to certain teams at the start of the pandemic were reallocated to ensure the island could handle the impact of Covid-19. However, authorities still had to be prepared for other emergencies.

“We still had a responsibility to provide emergency management services and be ready for a meteorological event,” says Allen Stewart, director of TEMA.

Radio networks for emergency response teams

Curtis Roberts, a telecommunications officer at TEMA who also is an experienced radio operator, said that a severe weather event in November 2004 – after Hurricane Ivan struck the island just two months prior – was a turning point in the island’s approach towards emergency management. The storm caused landslides that downed powerlines and disrupted cellular communication. Roads and telecommunication infrastructure was heavily damaged, and the TEMA team relied heavily on HF radio systems during the recovery period. The team began integrating HF radios into their telecommunications plan.

“We knew it was important to create an HF radio network,” says Roberts. Over the past nearly two decades, the TEMA team has worked systematically to implement the best practices, as laid out by the UN. There are additional efforts underway to create an interconnected region-wide radio network across the Caribbean to prepare for future events.

“Now we have to modernise to continue to increase the effectiveness of that sector, and a big part of that is the [radio] automatic link establishment,” says Roberts.

Improving disaster response with robust radio networks

Without automatic link establishment, a trained radio operator has to find the right frequency, involving trial and error, and most crucially – time.

“With the automatic link establishment, it allows us to program about 15 HF frequencies in the Barrett ALE radios, and the radio automatically chooses the right frequency. It takes out the inefficiency and it speeds up the process,” says Roberts.

TEMA is using the 4050 HF SDR Barrett radios that are equipped with this automatic link establishment, which Roberts says ultimately makes his team more effective responders.

He added that the automatic link establishment also removes the



Cub Scouts communicated across the world as part of a wider initiative (Photo provided by TEMA)

need for an experienced radio operator. This means that there’s a bigger pool of people within an organisation who can operate the radio in the event of a disaster.

Explaining how easy the radios are to use, Roberts points to a recent initiative where youth scouts in Tobago teamed up the amateur radio fraternity and used the Barrett 4050 radios, a portable 10M mast and the SWC-100 broadband antenna to communicate with scouts around the world.

Barrett donated 12 HF radios, including two 4050 touchscreen SDR radios, one of which is mounted in a pelican case and equipped for rapid deployment; the other is a base radio. TEMA also received six PRC-2090 radios, two of which can be deployed as manpacks allowing emergency response teams to easily navigate tropical jungles and rugged terrain to reach people in need. The Barrett equipment also means that teams can easily navigate tropical jungles and rugged terrain to reach people in need. Of the four Barrett 2050 radios, two will be used as base radios, allowing for communication with response teams in the field.

“The donation makes us leaders in disaster response communications in this region,” says Stewart.

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UK surveillance specialist Chess Dynamics' vehicle surveillance system, Hawkeye MMP, has demonstrated a world-leading electromagnetic compatibility (EMC) performance as part of the Norwegian Defence Materiel Agency's (NDMA) Observation Targeting and Surveillance Systems (OTAS) project.

In meeting stringent requirements set by the NDMA, Hawkeye MMP has demonstrated its ability to meet the needs of the modern battlefield and survive, communicate and operate in the toughest electromagnetic conditions.

The unique requirements set out by the NDMA included standard EMC tests such as MIL-STD461 and specifically the precise Nuclear Electro Magnetic Pulse (NEMP). This was alongside more bespoke requirements to ensure compatibility with the vehicle's existing high frequency, very high frequency and ultra-high frequency radio systems without any internal frequency interference.

Chess developed a multi-staged approach which included board-level testing, meeting UK-based EMC qualifications and complete vehicle system tests, as well as designing novel modular solutions to pass the NEMP testing at the first attempt. Steps were taken alongside the NDMA so that requirements were met while ensuring environmental and usability needs were not impacted.



Chris Henderson, Electronics Group Leader at Chess Dynamics said, ***"The demands of the battlefield today are increasingly complex and require adaptable, high-performance solutions. The NDMA required a technology of this kind that also met its own strict EMC requirements, and we are thrilled to have succeeded in this. This is a major achievement for Chess, and we believe this technology will be vital as resilience becomes increasingly important to surveillance capability."***

The customer said, ***"Chess Dynamics was able to provide a solution that passed the EMC tests, proving Hawkeye MMP's ability to perform while remaining resilient on the battlefield. We look forward to our continued work with Chess as we look to continuously improve our surveillance capabilities."***

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PELI PRODUCTS CONTINUES ITS EXPANSION IN EUROPE WITH INCREASED INVESTMENTS IN ITS GERMAN MANUFACTURING FACILITY

The company pursues enhancing European customers experience by optimizing production while preserving global sustainability

Peli Products GMBH a subsidiary of Pelican Products, Inc., the global leader in the design and manufacture of high-performance protective cases, temperature-controlled packaging solutions and advanced portable lighting systems, has announced plans to expand the production capacity of the manufacturing facility it acquired in Crottendorf, Germany, in July 2022.

In accordance with its strategic plan, the company is accelerating the localization of its production of protective cases from their manufacturing facilities in the United States to Germany. Following the successful implementation of a state-of-the-art SAP IT system, Peli has added 5 more new Injection Moulded (IM) models to the 15 that are already manufactured in Crottendorf, to be followed by an additional 6 through by the end of 2024. The Manufacturer is currently producing 20 IM models plus more than 100 Roto-moulded models at its German facilities.

To support this growth plan, the expectation is to enlarge the local workforce at the Crottendorf facilities, potentially doubling it in the next 2-3 years, as well as investing heavily in new plant equipment and machinery. This expansion is integral to the strategy that Platinum Equity, which acquired Pelican Products, its affiliates and subsidiaries at the end of 2021, laid out in order to support and accelerate the company's international growth plans.

The industrial plan has been designed with a focus to maximize sustainability, resulting in several projects such as

recycling close to 100% of the wasted polypropene in-house and other materials, including polyethylene, externally. The manufacturing site has been upgraded with photovoltaic panels and a system to re-use the heat generated by machines to warm up the manufacturing halls in winter.



"In a context of global challenging markets, we are determined to optimize our global European investment with a continuous improvement of our manufacturing processes. The continued investment in our German facilities will reinforce our leading competitive position in Europe. Our highest priority is to provide our customers with "made in Germany" products and services to offer an improved customer experience by shortening lead times of supply as well as helping to maintain our commitment to quality and global sustainability," said Piero Marigo, President of International.

For more information about Peli Products, visit www.peli.com



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- **In space:** ACTIA equips large constellations with electronic equipment through COTS solutions (power Electronics, RF), design and industrialization support (DFx : Design For Manufacturing, Design For Test, Design for Assembly...), a large certified production capacity (EN9100, Nadcap).

With great references in the defense industry, its SatCom division is recognized as a leading manufacturer and integrator in Europe. ACTIA SatCom's expertise focuses on 4 domains of activities:

- **Amplifiers & RF sub-systems:** For over 50 years, ACTIA has developed a reliable range of tube (TWTA), solid state (SSPA), BUC amplifiers for indoor or outdoor use & in the C, X, Ku, Ka, Q and V frequency bands.

More than a thousand of amplifiers have now been installed around the world.

- **Ruggedized Ground Terminals:** ACTIA designs and installs SatCom terminals. The fixed and mobile ground stations are available in C, X, Ku, Ka & V Band.

Intended for military use, these stations have followed a specific qualification program to guarantee compliance with applicable standards (MILSTD).

ACTIA's defense activity was built on major programs of the French Procurement Agency/DGA (COMCEPT, Syracuse III & IV) to whom ACTIA has provided more than 500 military terminals. This activity was then developed for foreign MODs (prime integrator of the secured broadband ground segment for the Egyptian MoD).



- **Network Management System:** To supervise and control a network of ground stations, ACTIA Telecom provides its own management system combining state-of-the-art network equipment, an efficient and reliable RF solution and intuitive & secure monitoring and control software. For the past 15 years, ACTIA has been the sole provider of NATO's network M&C system.

- **Satcom system Integration Expertise:** ACTIA is also recognized as a full system integrator providing turnkey solutions. From the selection of all sub-systems (amplification & RF chain, ground stations, M&C Software), ACTIA designs, manufactures, delivers, installs, and monitors complete satellite ground systems (main network Operations Center/NOC, redundant NOC for management & Control, high-capacity stations, user stations, fixed, transportable, and mobile terminals) on land, air and at sea.

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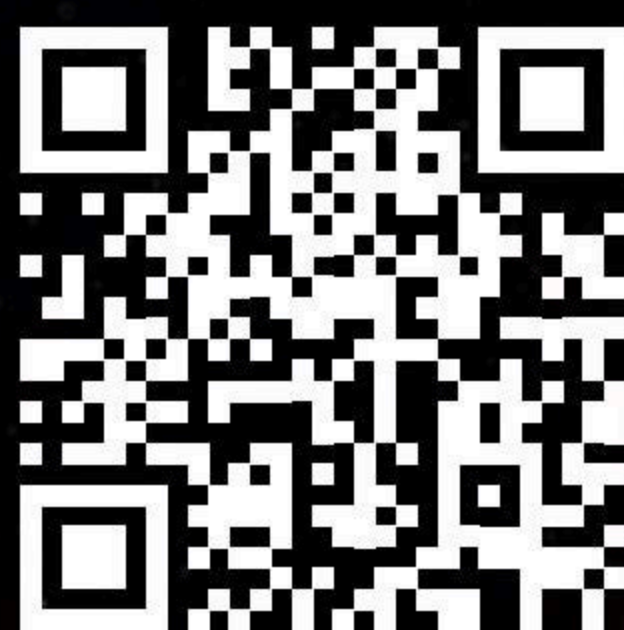




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A CLOSER LOOK

INTO GM DEFENSE'S FIRST TACTICAL HYBRID VEHICLE

As the commercial automotive market continues to make significant strides in the adoption of electrification technologies, there is growing interest within military circles to evaluate the feasibility and effectiveness of battery electric and other advanced propulsion systems for enhancing tactical mobility.

The Army's electric Light Reconnaissance Program, which is set to get underway in government fiscal year 2024, reflects this interest and will be the first major initiative to bring battery electric military vehicles to front-line tactical formations. Adoption of battery electric propulsion solutions offers great potential to enhance the operational capability of land forces by leveraging the inherent benefits of this technology to include near silent drive and silent watch capabilities. Low thermal and acoustic signatures along with a significant fuel demand reduction not only make battery electric vehicles safer but they also reduce the amount of logistics required to support forward deployed tactical forces in what is known to be a contested logistics environment. Given this increased interest by the U.S. Department of Defense and global defense organizations, the time to look to industry to support these initiatives with commercial-based technology is now. Leveraging best-in-class

commercial technology and adapting these innovative solutions for military applications, GM Defense is positioned to meet the needs of global defense customers in a timely manner. Timothy Goddette, deputy assistant secretary of the Army for sustainment, said during a speech at last year's National Defense Industrial Association's Tactical Wheeled Vehicles Conference, "We should be looking at the technologies and looking at the opportunity where we can bring [electric vehicles] in — not just because the technology is ready — but because it's affordable, because it's reliable and because we're taking advantage of the great industrial base that we have ... that is very closely aligned with what we do with tactical wheeled vehicles."

GM Defense, a subsidiary of General Motors (GM), leverages decades of experience in electrification and billions of dollars' worth of investments that GM has made in the development, testing, validation and manufacturing of advanced battery electric technologies. Through the company's core capabilities in integrated vehicles and power and propulsion, GM Defense develops reliable commercial-based solutions powered by GM's alternative propulsion systems. With the Next Generation Light Tactical Wheeled Vehicle Hybrid (NG LTWV-H) in development, GM Defense intends to demonstrate the significant benefit for adoption of a tactical hybrid electric mobility solution to customers like the U.S. Army as they continue to assess which technologies are best equipped to serve Soldiers at the tactical edge.

On the Path to a More Electric Future

Aligned with GM's vision for an all-electric future, GM Defense is developing a solution that provides its global defense customers with a steppingstone to a more electric future that meets the Army's requirements today. Based on GM's off-road

variant of its full-size heavy-duty commercial truck architecture, the NG LTW-H combines a diesel engine with the company's advanced battery electric propulsion system, Ultium. The result is a rugged, off-road capable hybrid electric solution that delivers mission power with stealth capabilities helping to increase lethality and survivability.

When engineering the NG LTWV-H, GM Defense began by assessing GM's vehicle architectures to determine the best optionality to meet customer needs. In their assessment, considerations for payload, off-road mobility performance, propulsion system and seating layout, along with many other characteristics were all reviewed. After determining that GM's heavy-duty pick-up was the best match, the propulsion system was re-engineered to a hybrid based on the U.S. Army customer requirements, including total range, silent range distance, silent watch duration and instantaneous electric power generation while optimizing cost and weight. The GM Defense engineering team utilized several GM commercial-off-the-shelf (COTS) parts, including Ultium drive units and battery modules as well as charge ports, control modules and engine, a strategy that results in an affordable outcome while also ensuring ease of maintenance and accessibility through GM's global supply chain.

Tactical Series Hybrid Advantages

There are primarily two types of hybrid vehicles: a parallel hybrid and a series hybrid. GM Defense is building the NG LTWV-H as a series hybrid because of the many benefits the technology delivers to customers. The power of a tactical series hybrid vehicle comes from electric motors at each axle, which receive energy from the onboard battery, eliminating the need for a traditional transmission, driveline and other components connecting the front and rear axles. The corresponding weight reduction from reduced parts enables increased packaging space and a less complex mechanical solution. In addition, the generator operates at peak efficiency, charging the battery to enable near silent operations when required and supporting fuel demand reduction. The hybrid benefits should eliminate the recharging or repowering concerns of yesteryear, ensuring warfighters have the power and propulsion needed at the tactical edge.

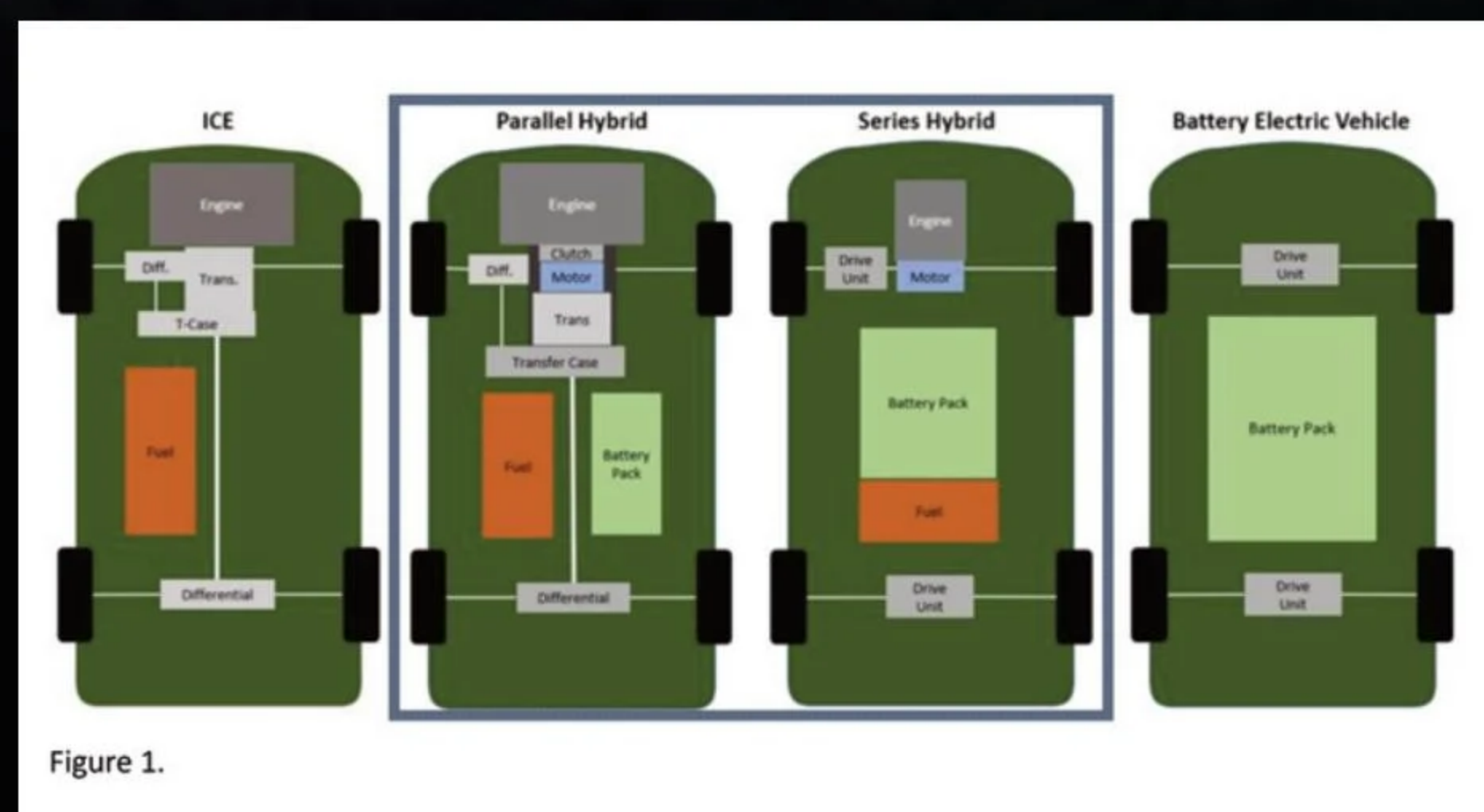


Figure 1.

Engineering for the Future

Rather than produce a one-off design, GM Defense leverages common components and parts to develop the NG LTWV solution powered by GM's internal combustion engine (ICE) with the potential for developing manned, optionally manned and autonomous capabilities. The ability to share a common architecture and components enables GM Defense to realize efficiencies throughout production, while offering customers the ability to adopt different variants as requirements evolve.

The compelling advantages offered by battery electric technologies for tactical mobility alone warrant serious consideration. The potential to enhance operational capability, increase lethality, improve survivability in an increasingly dangerous battlefield – while reducing fuel demand in a contested logistics environment – are key factors that should drive the global defense market's decision-making process.

The technology is available now, and its phased implementation can pave the way for future deployment of all-electric solutions by the U.S. Army and other customers. While the infrastructure to support battery electric military vehicles needs to advance and align with the current pace of commercial technology, the NG LTWV-H tactical series-hybrid serves as a bridging strategy. The solution allows military forces to continue utilizing the existing fuel infrastructure while benefiting from features such as near silent drive, silent watch, extended mission duration and exportable power. GM Defense is excited to help introduce this technology and ready to partner with government and defense entities to deliver the very best for the warfighter.



Rick Kewley is Vice President, Product Development & Advanced Engineering for GM Defense LLC., serving on the GM Defense leadership team. He leads all aspects of engineering, manufacturing, supply chain and program execution to meet global defense and government requirements. Kewley is a former U.S. Army officer who joined GM Defense after spending 27 years with General Motors. He earned a Bachelor of Science in mechanical engineering, automotive systems from the United States Military Academy at West Point.



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IDENTIFYING RADIOLOGICAL SOURCES

IN ONE WAG OF A TAIL

Early warning capabilities are essential for supplying rapid, reliable data to inform preventative action. Such innovations in radiation detection are necessary to avoid repeats of Chernobyl 1986 and Fukushima 2011.

Risks to nuclear security are of ever-present concern globally, but are especially significant with the ongoing geopolitical unrest in Ukraine. With Ukraine's prolific nuclear industry and fighting in such close proximity to reactors, such an early warning capability is imperative to safeguard its people and infrastructure; avoiding a repeat of catastrophic events and its severe short and long-term consequences.

Facilitating the implementation of early warning capability in high-risk environments is Kromek's versatile portfolio of high-performance radiation detectors.

Kromek's radiation detectors have been mounted on drones, UAVs, vehicles, and now, dogs.

Eight dogs equipped with D3S ID radiation detectors, the size of mobile phones, have just been deployed in Ukraine.

This innovative solution significantly enhances the early warning capabilities of those protecting and monitoring the field, delivering real-time isotopic ID along with gamma and

neutron alerts to users, enabling troops to take the appropriate responses rapidly to the radiological threat at hand. Widespread situational awareness is supported by spectral data made available from large focal areas, four times faster than the RIID standard.

Handlers and their canine companions are kept as safe as possible, with the high sensitivity of the D3S ID ensuring even the lowest levels of radiation don't go undetected. The dogs on patrol can immediately be moved from danger when the distanced handler receives a real-time alert from the detector on their paired mobile phone.

Dogs wearing Kromek's D3S ID have also been implemented successfully to enhance radiological threat monitoring as part of airport security, and helped secure President Zelenskyy at an awards ceremony in Germany in May 2023.

Constantly scanning and simply to use, the D3S ID rapidly supplies soldiers with reliable spectral data from a safe distance. Remote decision-makers are also equipped with high quality spectral data to make crucial decisions, due to the rapid reachback potential of the device, and its ability to seamlessly integrate into existing alert networks alongside other specialized detectors.

Kromek's continuous innovation in the field of CBRN detection continues to enhance nuclear security worldwide, supplying versatile solutions and actionable intelligence to military personnel on the ground and situated remotely, helping keep themselves, their team, infrastructure and the public as safe as possible.

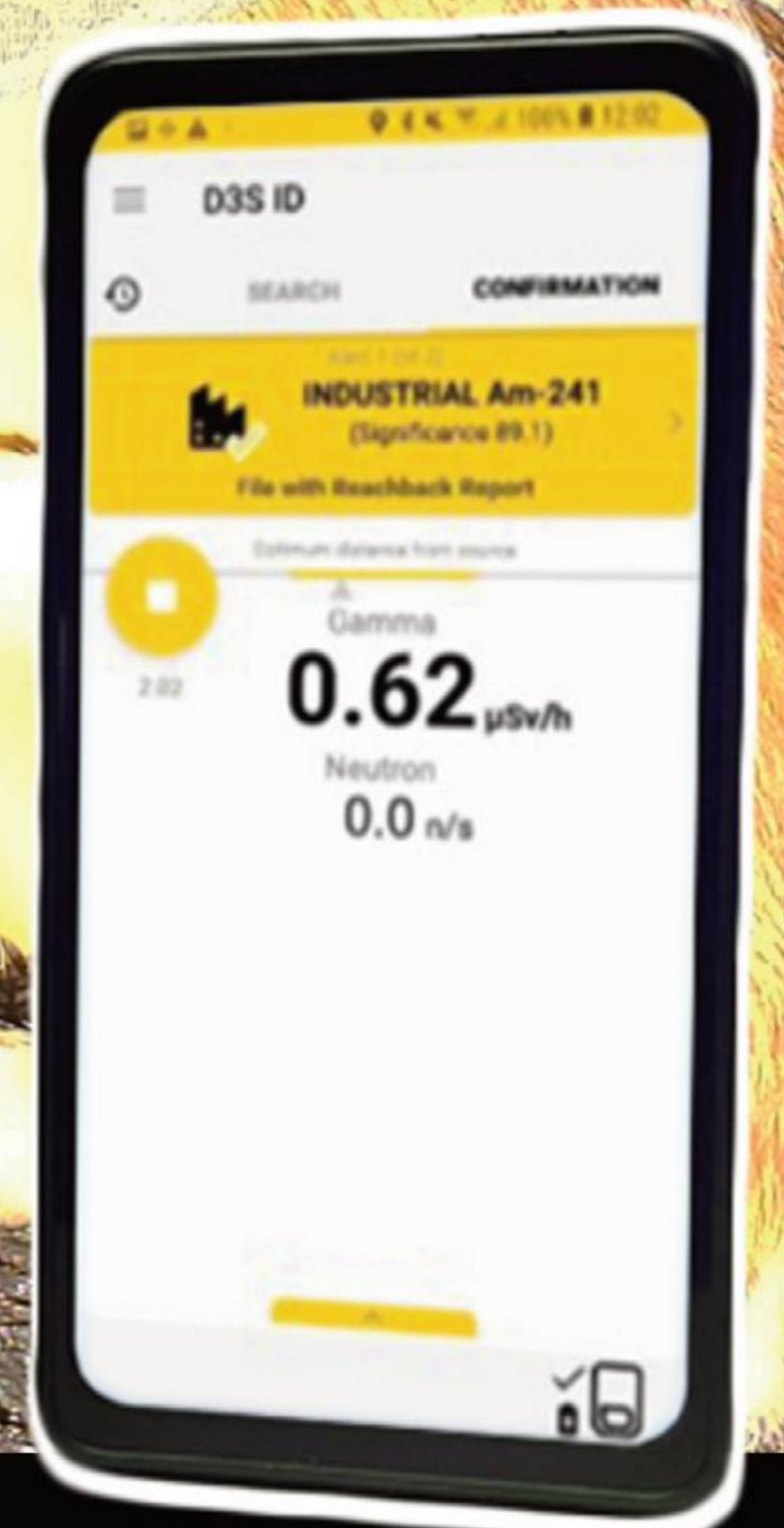
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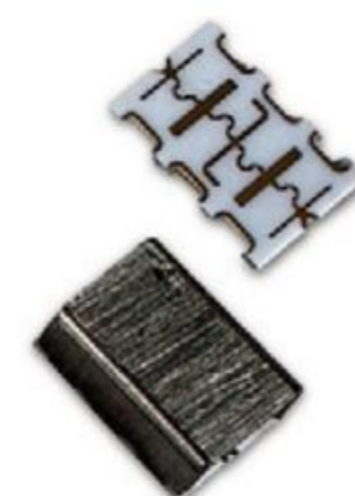
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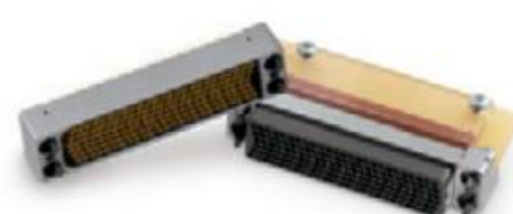
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Svenska Kraftprodukter

EMPOWERING SWEDEN'S ENERGY SECTOR IN AN AGE OF GLOBAL UNCERTAINTY

In the year 2021, amidst a global landscape rife with geopolitical tensions and escalating conflicts, Svenska Kraftprodukter emerged as a promising new player in the Swedish power generation industry.

The company was established with a deep understanding of the generator and power product markets, with a clear vision: to provide reliable and efficient power solutions in an increasingly uncertain world.

The Genesis and Vision

Svenska Kraftprodukter was founded on a recognition of the growing demand for resilient energy solutions against the backdrop of global unrest. The company's team, comprised of professionals each expert in their respective field, was meticulously selected from an extensive network. This team's blend of experience and innovative spirit became the cornerstone of the company.

Addressing the Global Climate

The establishment of Svenska Kraftprodukter was not just timely but essential. The increasing frequency of international conflicts and the looming threat have heightened the need for dependable power infrastructure. Svenska Kraftprodukter positioned itself as a response to these challenges, aiming to bolster Sweden's energy autonomy and resilience.

Expanding Product Portfolio

Svenska Kraftprodukter's product range extends across various types of generators and power-related equipment, each designed to meet stringent quality standards. Their products are tailored to suit a wide array of applications, from industrial use to emergency power systems, ensuring versatility and reliability. This diversity in product offerings reflects the company's commitment to catering to a broad spectrum of energy needs, a crucial factor in today's unpredictable global scenario.

Beyond Products: Comprehensive Services

Understanding that the provision of equipment is just one part of the solution, Svenska Kraftprodukter offers a suite of services that encompass inventory management, custom-tailored educational programs, regular maintenance, and full on-site installations. This holistic approach signifies their commitment not only to supply but also to empower their clients with the knowledge and support necessary for optimal utilization of their products.





Educational Initiatives and Expertise

Svenska Kraftprodukter also places emphasis on providing essential information and training related to their products. This initiative is more about equipping clients with the necessary skills and knowledge to effectively operate and maintain their power generation equipment. By doing so, the company aims to enhance the practical understanding and self-reliance of their clients in managing their power needs. This approach reflects Svenska Kraftprodukter's commitment to customer support and empowerment in the realm of power management.

Market Reception and Growth Trajectory

Since its inception, Svenska Kraftprodukter has experienced a positive market response, indicative of the pressing need for its products and services in the current climate. The company's growth, while impressive, has been achieved through strategic planning and a constant drive for innovation.

Navigating Challenges and Setting Benchmarks

As a newcomer in the energy sector, Svenska Kraftprodukter faces the dual task of carving out a niche for itself while staying ahead of rapid technological advancements and shifting market needs. The company's proactive approach to these challenges, combined with its emphasis on quality and customer service, has set it on a path of continuous growth and improvement.

Partnerships and Collaborations

A key strategy in Svenska Kraftprodukter's growth has been forming strategic partnerships and collaborations. These alliances with other industry players allows the company to stay at the forefront of technological advancements and to continuously innovate in its product and service offerings.

Looking Towards the Future

As Svenska Kraftprodukter looks to the future, it remains committed to playing a significant role in Sweden's energy sector. The company's strategy involves not just expanding its product line and services but also actively participating in discussions and initiatives aimed at shaping the future of energy in Sweden and beyond. With a focus on sustainability and innovation, Svenska Kraftprodukter is poised to contribute significantly to the development of resilient and efficient energy solutions.

In Conclusion

Svenska Kraftprodukter's journey, which began in 2021, is more than just the story of a company's growth; it is a narrative of strategic adaptation and commitment to meeting the demands of a world facing unprecedented energy challenges. Through its combination of quality products, comprehensive services, and a forward-thinking approach, Svenska Kraftprodukter is not only responding to the current needs of Sweden's energy sector but is also laying the groundwork for a more secure and energy-efficient future.

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Tel: +46 20 226600

www.skpab.com



ABOUT CARGOSTORE WORLDWIDE

Cargostore Worldwide is the UK's leading supplier of ISO shipping containers for domestic and international projects. With offices in London and Abu Dhabi, and depots across the globe we provide a seamless and fast service with the flexibility to meet any client requirement.

Our Intermodal Division supplies ISO certified storage and shipping containers for hire or sale and can offer bespoke container conversions and specialised equipment. We supply projects in mining, stability & aid, community development, large scale sporting events, general logistics and B2B.



Secure Storage Container

Internal/ External doors, visual/ audible alarm, adjustable security cages, emergency lighting with keypad security system. Available in 10ft and 20ft sizes.



The TwinDeck

Full side access container with additional mid-deck for double floor space. Divide contents easily with less stacking as well as the benefit of easy access from the side-door.



Bi / Tri / QuadCon Units

Each set of units join to form a TEU (Twenty Foot Equivalent), which can be separated and moved on location. Available in two, three or four compartment options.



Refrigerated Container Specialist

A Reefer or Refrigerated Container is a flexible and convenient solution for storing food and other perishable goods at a regulated temperature.

Reefer Containers can be used off-grid; powered by one of our Clip-On Generators or other 3-phase power supply, or can be directly connected to the grid.



Event Reefer Container

With additional features designed for safety including; internal recessed lighting, chequer plate flat flooring, internal release safety door and aluminium ramp. 20ft and 40ft



Dual Temperature Reefer

With a freezer and chiller section running simultaneously. Movable partition wall and side-door for access to both sections. Available in 20ft and 40ft.



The BlizzardStore

Containerised expandable and modular large scale refrigeration unit. Can be upsized and downsized. Cost effective and faster alternative to a permanent cold storage solution.

“

Cargostore is an experienced provider of containerised solutions to Stability & Aid projects globally, with the ability to provide refrigerated, bespoke and specialised container types to remote locations worldwide. Contact me for a quote or for more information.

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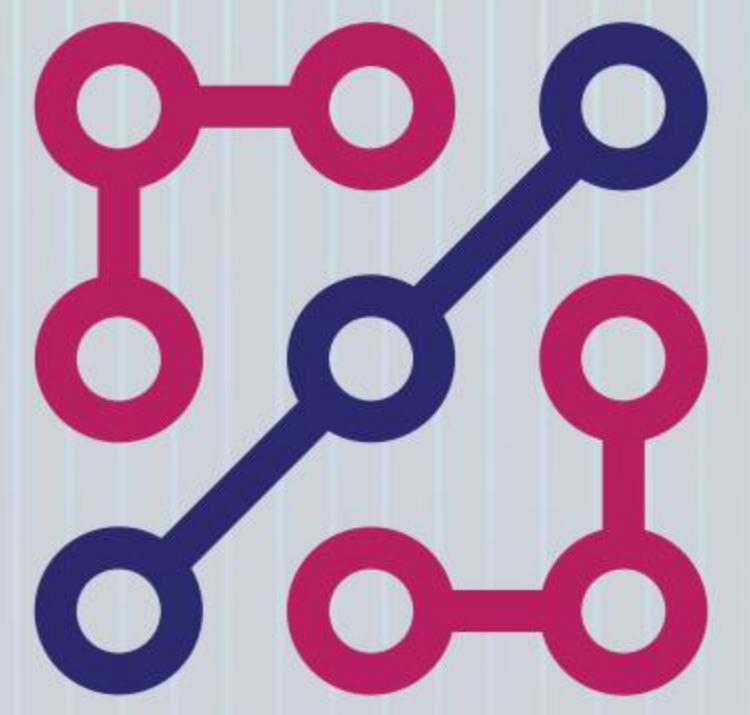
- Kevin Cudby
Intermodal Director



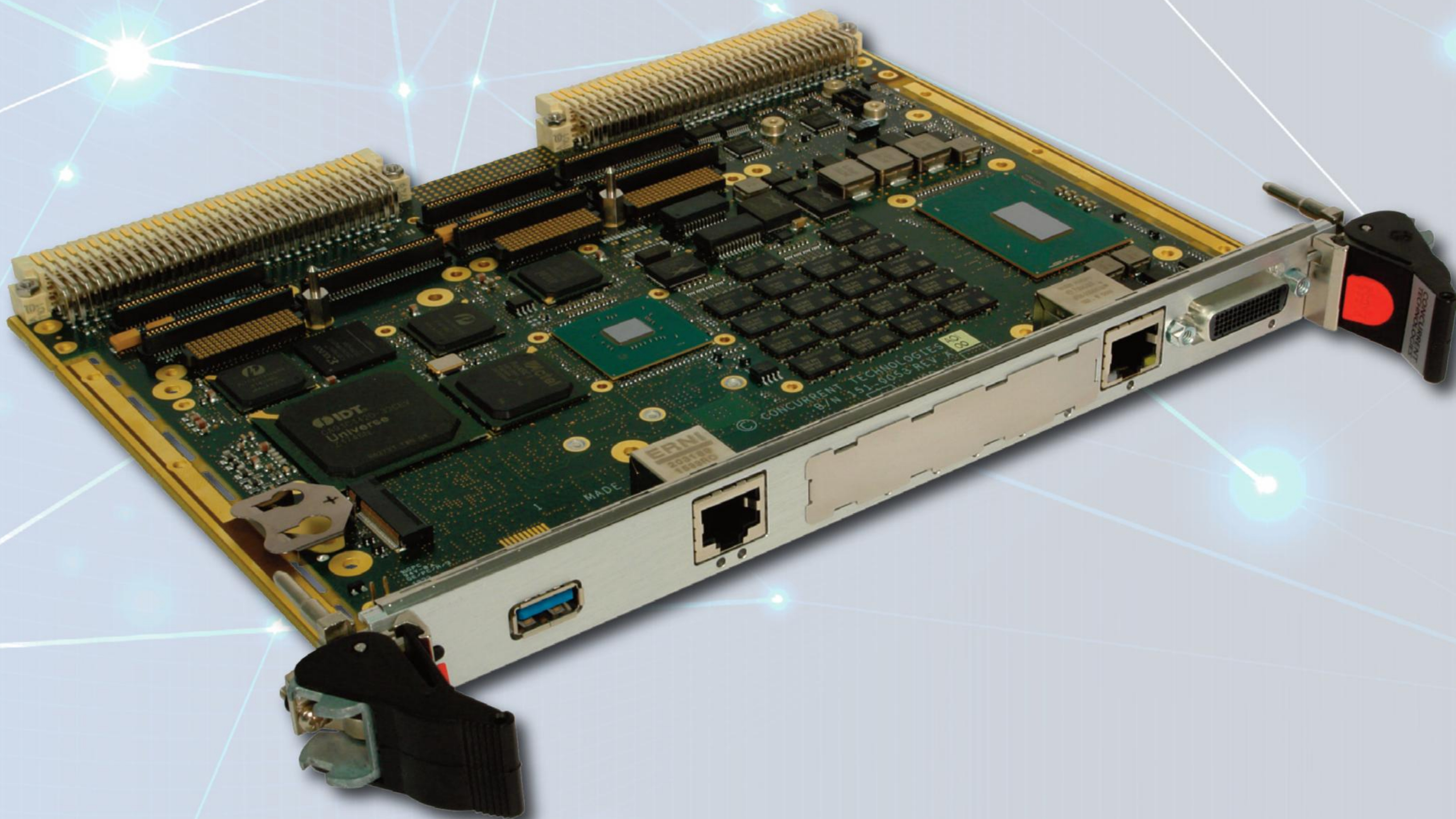
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CONCURRENT TECHNOLOGIES



Concurrent Technologies Secures Key VME Contract Win



Concurrent Technologies to supply VME Boards to major Defence Prime Contractor, strengthening the Company's position in a substantial market.

Concurrent Technologies, (AIM: CNC) specialists in the design, development, and manufacture of high-end embedded computers and embedded system solutions for critical applications, has secured a £2.2m contract to supply a major multi-national European Defence Prime Contractor with VME Processor Boards for deployment in air-defence systems.

The contract, to be fulfilled over the next five years in line with the manufacture of air-defence systems, represents Concurrent Technologies' ongoing commitment to delivering reliable, deployment-ready and industry-leading embedded solutions to the market. Concurrent Technologies' VME Boards are designed and tested to operate in and withstand a number of harsh environmental factors and were selected by this major customer, meeting all necessary technical and security requirements with excellent support options.

The multi-year contract with a flagship client highlights the potential of the Company's current generation VME boards in a substantial market.

Miles Adcock, CEO of Concurrent Technologies, commented:

"We are delighted to have competitively won this contract for a product that is core to our business. VME technology has been around for a while, and our commitment to continue to invest in providing leading edge products that utilise VME really matters to many customers."

"As a business our VME product range is a solid complement to our novel VPX products that take advantage of the newer open standard architectures that are primarily driven by USA based customers. This contract demonstrates the value of our offering and strength of our portfolio across multiple geographies."

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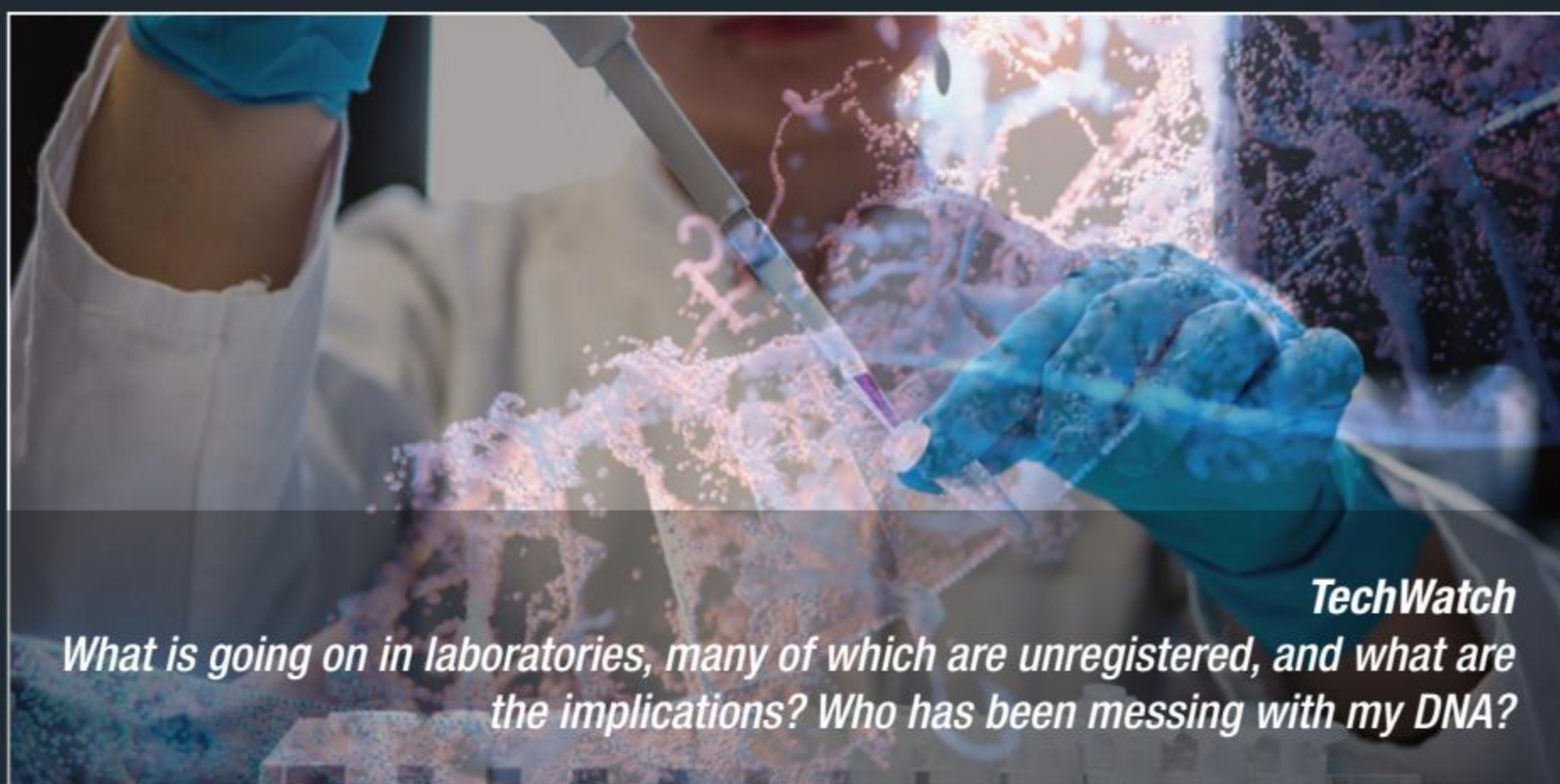
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NASDAQ: RCAT

CBRN and the Role of Consultant



There are many jokes about the roles of a consultant and how they earn their money. The shortest and therefore theoretically the cheapest is.



TechWatch

What is going on in laboratories, many of which are unregistered, and what are the implications? Who has been messing with my DNA?

Q. What does a consultant do?

A. Charge you a lot to borrow your watch, tell you the time, charges you again and then keeps the watch.

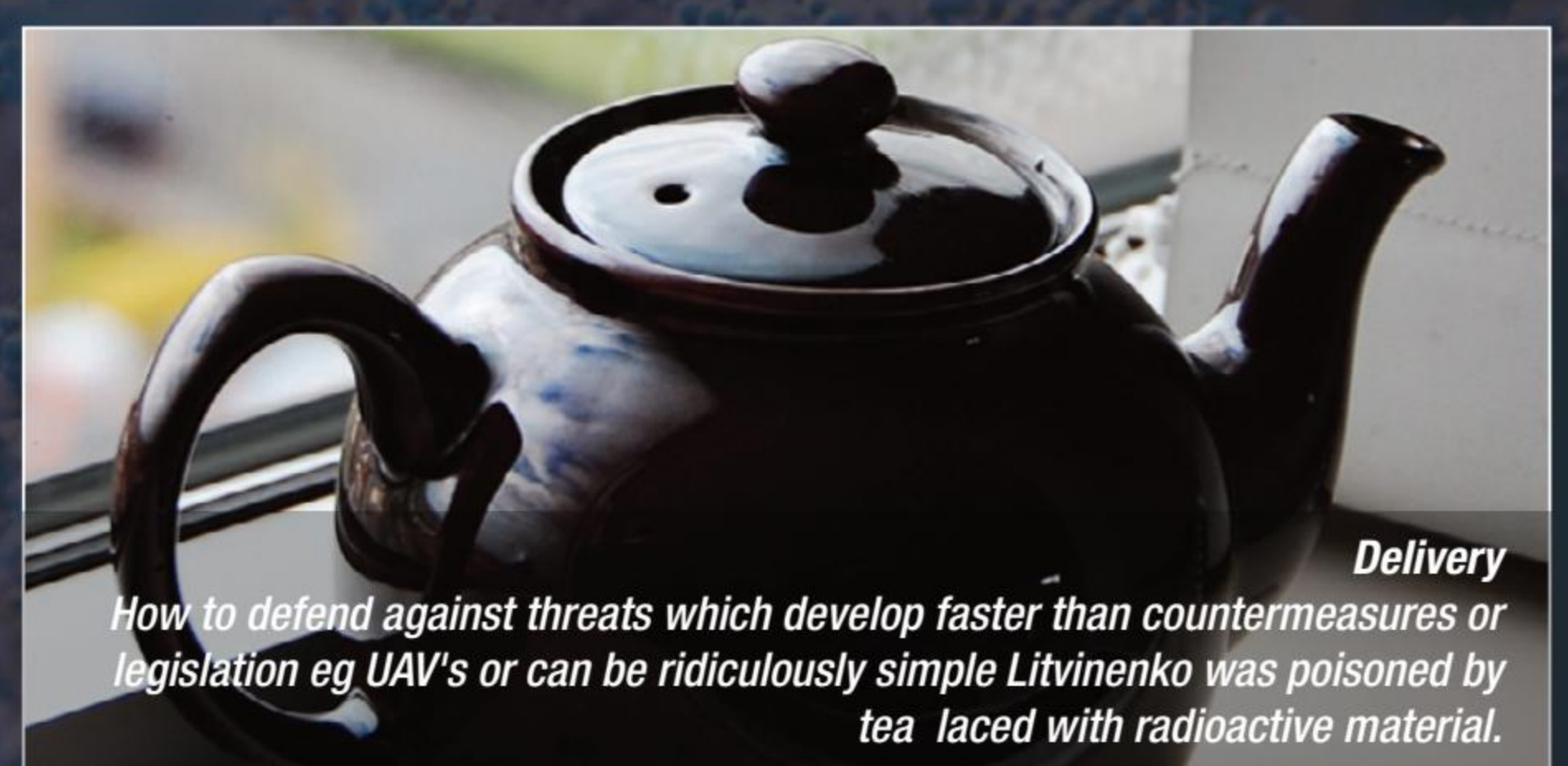
In reality there are three basic types of non-medical consultant; those who are very specialist and recognised as such by their peers by being the go to person in a discipline, the generalist who has been a specialist in a wide ranging discipline and has resultant experience of and knows something about most things, and what some call popularists, the original network enabled individuals; people who know a lot of specialists and generalists and can put their finger on the right one to help solve your problem. The core of what consultants do is twofold, they either provide a wider or longer-range view of a situation than you have or have time to acquire, or they help you solve your problem by providing a hard recommendation or develop a number of choices for you so that you can select one that suits you and solves your problem.



When we set out to become the company that is Lutra Associates Limited the founder was determined to be a different form of consultant to those he had come across in the course of his career. Firstly, key, was not to fall into the joke category and secondly try to use the experience gained in a 20 year military/government and then a 25 year commercial career to the advantage of clients, Lutra and those he employed. In those 45 years he had gathered considerable experience across much of the defence and security sectors and at least touched on many of the disciplines involved. Concurrently he had gathered a stable of friends and colleagues worldwide who were specialists in their own fields and geographical localities and were in many cases the go to people in those fields. Coincidentally he had become specialist in some domains and disciplines himself. That said no one knows or has experience of everything and being able to go to or find the right person or combination of people is key.

Nowhere is this truer than in dealing with the subject of Chemical, Biological, Radiological and Nuclear or CBRN. For a start these are three, arguably four completely different subjects. Laziness when constructing the subject as a military specialist area lumped them together. Granted the same taxonomies (Individual and Collective Protection, Contamination Control including Decontamination, Warning Reporting and Information Management, Medical Counter Measures, Detection Identification and Monitoring and Training) apply across all these subjects but due to the physics and chemistry of the threat agents the skills and drills to deal with them are of necessity different. Few people can deal with the whole overarching subject fewer still can cover all the associated skills. Couple these with policy and there is no one really qualified.

That said through happenstance, serendipity and fate CBRN was the area where the founder of Lutra had the most experience and for which he was the most well-known. Most of his commercial skills, a lot of his military experience, nearly all his commercial expertise and much of his personal interest was CBRN related. Often not straight CBRN per se but its impact on other domains, vehicle, ship and hospital design and operating techniques, tactics, how do you fight in a contaminated environment etc? How do you prepare a nation for a CBRN incident or outright attack? How do the armed and blue light services pull together in the



Delivery

How to defend against threats which develop faster than countermeasures or legislation eg UAV's or can be ridiculously simple Litvinenko was poisoned by tea laced with radioactive material.


Targets

Potential targets can range from an individual here a Lutra Senior Associate instructs an allied Head Of State's protection team on CBRN protection to a mass participation event (a Lutra speciality)

event of a CBRN incident? There are so many imponderables or issues where the factors change so radically, so frequently, often seemingly at the drop of a hat, it is no wonder those who don't have a deep grounding in the subject fail to deal with incidents when they occur. It is a subject ripe for experienced consultants of all three types, specialist, generalist and popularist. It is not something web searches provide the answer to. Only deep knowledge and respect from fellow cognoscenti are the entries to the subject. They know their limitations and who to pull into a team to fill the gaps and provide the correct thinking.

Thinking is critical. Modelling, unless based on experience, does not really work, it provides some clues but as all the academic huffing and puffing and modelling on the hoof during the Covid Pandemic showed it is frequently very wide of the mark. AI may provide a bit more of the solution, more quickly, in the future but experience shows that seldom are the solutions provided the correct answer. They are merely less wrong than the previous example by which time the world will have moved on and the solution is redundant. In fact in a moving situation where things move in completely different ways to previous experience the solutions of the past may be hopelessly inappropriate. There are some hard and fast prediction rules enshrined in a number of prediction models, most notably NATO's ATP-45 that are effective base lines but thereafter the changes make dealing with fast moving situations based on experience and judgement more effective than computer-based systems.

Any activity that harms people is wrong. If that activity is particularly cruel or possibly uncontrollable then it is even worse. Much of the problem with CBRN is that once released it is uncontrollable. One incident can spread unpredictably with unknown vectors (or transmission modes) causing it to emerge unexpectedly elsewhere like mole hills on a lawn. However its unpredictability makes it sinister and cruel. This was summed up by a First World War veteran speaking on TV who said "Being shot and wounded or killed was accepted as part of being a soldier and one of the risks. Being 'gassed' in a cellar by something you could not see or smell and even if you could it had changed from the last time you survived an attack or breaking out in blisters or succumbing to the Spanish Flu, even after the Armistice, was beyond belief." This fear of the unknown makes CBRN an ideal weapon in the modern world and especially so when targeted against a civilians and even more so when it is possible to manufacture or procure new or different weapons. This fact train has not been lost on non-state actors, rogue individuals or groups self-acquiring or being supplied by or acting as proxies for sponsoring, malevolent, states. The issue is compounded by the appalling ignorance of the population who because of ignorance about CBRN and its impact are quite likely to panic at the first mention of an attack or incident causing even more casualties and problems.

As if this is not enough the multiplicity of delivery methods and targets are really only limited by your imagination. If you are a well brought up, moral person your imagination is probably not wide enough. Thinking the unthinkable is part of the stock in trade for a CBRN consultant and then having second and third thoughts. Couple this aspect with the multiplicity of potentially harmful substances and it quickly becomes apparent that this is a problem that needs serious consideration. How do you bound what it is you are considering, are toxic industrial chemical and other Hazardous Materials (HAZMAT) part of the CBRN threat? The toxic soups that were swilling around New Orleans post Hurricane Katrina suggest there is a good argument to say yes. Estimates range of the damage and clear up costs but \$145.5Bn at 2005 prices is one estimate available. An Act of God you say but what if it was several Acts of Man spread over a wide area. The number of agents and delivery means are huge, the numerical combinations massive.

We are all used to the role of the security, blue light and armed forces being protection of the homeland and the national infrastructure. One of the problems



with CBRN as a threat is that the thing you are protecting, the oil facilities, the nuclear plants, the chemical factories or whatever can become the weapon rather than the target. Therefore there are all sorts of threat avenues involving all sorts of actions that can cause many many different effects and increased risks. The argument is not one of not building these infrastructure projects. We need the power, the chemicals and the benefits we get, it is just that security needs to be considered from before the start of the project and then regularly reviewed during its lifetime and, in some instance, its afterlife. Apocalypse aside having said that the CBRN threat can, and has been used, against individuals, political opponents and population masses. Against that background convenient boxes of massed targets (aka people); sports grounds cruise ships, event venues etc., a particular speciality of Lutra's, are other areas that are bound to be targeted before much time passes. Looking for and at potential targets is part of thinking the unthinkable that CBRN consultants carry out.

What could be the other roles. They are many and varied but the way Lutra has approached this is as follows: The first thing to state and do so very firmly is that consultants are not responsible for protection and response to CBRN. That is firmly and squarely the role of the state. Consultants, observe, consider, advise and check. They discuss ideas and elicit facts, identify issues and solutions but the adoption of these solutions is the role of the government or the target facility and their implementation the role of ministers and the security forces or those charged with protection in the widest context.

Perhaps the key role is that point about imagining the unimaginable and then going a bit further. This implies maintaining a watch on technology and events. What is happening politically at home and abroad and within alliances? Which religious, monetary or political movements are holding sway? What are the undercurrents in the "thought ether". All contribute to the threat scenario.

Laying out the threat is key but then so is laying out a contingency capability to cover the unexpected because it always happens. Once the potential responses have been identified the next big task is considering the solutions and potential plans. Obviously where possible there needs to be as much overlap of capabilities as possible. This may lead to working out the costs of covering gaps in capability or making a risk assessment of not covering an identified gap. Beware though, the consequences of not covering identified gaps can be staggering, consider Covid-19.

Once the threats and probabilities and thus the areas to be covered are determined one comes to the actual plans. The consultant has two possible roles, either help with the planning or "red team" the plans once formulated and reformulated. To be effective plans need to be rehearsed. Starting with discussions and tabletop exercises these can eventually progress to full blown rehearsal exercises. The consultant may well have a role in this process advising, assessing and suggesting improvements. As an aside this is rarely an area for academics except very specialised ones. It is for the experienced practitioners.

All the while the consultant should watch and think. Think through the realities of the exercise and the issues that emerge. Work then becomes cyclical, has the imagination been stretched far enough, have the issues and changes been assimilated and have the plans and practices been modified and tested. Through all of this the consultant needs an open mind and to discuss, record, articulate and assist. It goes without saying trust and respect between all the parties involved is a given, so integrity, honesty and discretion are key. Its what CBRN Consultants and Lutra Associates Limited are about.

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CRFS DEPLOYMENTS

TACTICAL IN-FIELD DEPLOYMENTS OF RF SYSTEMS FOR SPECTRUM DOMINANCE

Military superiority no longer relies solely on battlefield might; successful operations depend on information about your own, allied, and enemy forces. Mastering the electromagnetic spectrum with advanced RF technology adds to this information picture.

CRFS helps militaries worldwide achieve spectrum dominance by providing a range of tactical, innovative RF systems that help warfighters control and utilize the electromagnetic spectrum to their advantage while denying the enemy the same capability.

CRFS PARTNERSHIPS THAT DELIVER NOVEL SOLUTIONS

C-UAS: [RAFAEL and CRFS](#) collaborated on behalf of a European NATO member who wanted to add advanced RF capabilities to its Drone Dome™. CRFS enhanced RAFAEL's RF detection and geolocation capability by integrating RFeye technology, which performs highly accurate RF-based drone detection across a wide range of threat vectors and over an extensive operational range.

ISR: [Aeronautics and CRFS](#) worked together on a project for a European military customer looking to enhance their SIGINT / ELINT capability. CRFS integrated RF sensor technology within the Aeronautics Aerostar UAV range to enhance RF signal detection, capture, and geolocation missions across a wideband spectrum range (10MHz–18GHz).

Tethered drone: [Equinox Innovative Systems](#) and CRFS worked together to mount an RF receiver and antenna onto a rapidly deployable tethered drone. The drone can elevate to 400 feet (121 meters) and functions as an eye in the sky for military ISR, spectrum analysis, geolocation, communications, and SIGINT.

ISR: [TEKEVER and CRFS](#) successfully integrated sub-tactical unmanned aerial systems (UAS) with highly sensitive RF sensors as a payload. The wide-area surveillance UAS housing ruggedized RF sensors offers unparalleled spectrum monitoring, detection, signal capture, and geolocation (TDoA) capabilities for the military end user.

“THE GROUNDBREAKING PARTNERSHIP BETWEEN TEKEVER AND CRFS IS A TESTAMENT TO THE POWER OF COLLABORATION. IT’S A GAME-CHANGER, OFFERING END-USERS AN INCREDIBLY VERSATILE ASSET THAT CAN COVER VAST LAND AND SEA AREAS.”

TIAGO NUNES, PRODUCT DIRECTOR AT TEKEVER

CRFS DESIGNS SYSTEMS THAT MEET CUSTOMER NEEDS

CRFS projects are driven directly by our customers’ needs. The ideas behind systems meant to be deployed in the field should come from the field—and we quickly build these systems to be rapidly deployed.

Our COTS sensors are powerful, ruggedized, and optimized for SWaP. CRFS sensors are multifunctional, allowing them to be repurposed or interchanged across missions and applications. Moreover, they form part of systems developed to advance EMS superiority through partnerships—rather than being part of programs of record (PoR).

MULTI-DOMAIN INTEGRATION OPTIONS

CRFS’ latest tactical military RF systems are already deployed in the in-field. These systems allow users to passively monitor RF spectrum in real-time and carry out geolocations for ISR and EMSO applications.

In hostile conditions, these capabilities give military forces a tactical advantage by allowing them to quickly detect, measure, and monitor RF signals. This provides real-time battlefield awareness and the ability to respond rapidly in dynamic situations.

Air: fixed-wing drone integration

Integrating tactical fixed-wing medium-altitude drones with RF sensors yields an advanced ISR solution through 360° situational awareness and increased line-of-sight. Also, as increasing altitude allows signals to be detected at greater distances, spectrum monitoring receivers can be operated at greater distances from active combat zones.

Air: tethered drone integration

Integrating a tethered drone with an RF sensor as a payload enhances line-of-sight and operational range. The tether provides continuous power for extended operations and a reliable data link for real-time

transfer. These drones can be deployed rapidly from the back of a truck to create an instant aerial tower without fixed infrastructure. They can be repositioned quickly to adapt to changing operational scenarios.

Land: tactical vehicle integration

V-Track is a TRL-9 mobile spectrum monitoring system and tactical EW vehicle. Currently deployed at the operational edge, V-Track comes in two models: one with a 20-meter mast and another with an Array 150 direction finding system. Operators can deploy quick dismounted systems and integrate with ISR drones for joint land and air missions.

Sea: Protect USV communications from harmful jamming

As unmanned surface vessel operations expand, it is essential to safeguard their PACE plans from jamming and unintended civilian disruptions in coastal areas. CRFS provides spectrum monitoring solutions for USV MIMO MESH networks in bays, lagoons, and archipelagos. This system can automatically detect and locate sources of jamming, ensuring consistent USV communication.

New tactical direction-finding head system

CRFS’ latest RF solution is a new 30–300 MHz direction-finding system for tactical and mobile deployments. The LFDF antenna only takes up one antenna port, meaning omni-directional monitoring continues. Add multiple LFDF antennas to create an Angle of Arrival (AOA) geolocation system from existing or new RFeye Nodes.

- Small form-factor
- Low-band DF compact head
- Rapid deployment
- Highly configurable
- Expandable performance
- GUI operation with rugged laptop or tablet

CRFS

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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.



RF INTEGRATION SOLUTIONS

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FIXED-WING
DRONE INTEGRATION



TETHERED DRONE
INTEGRATION



TACTICAL VEHICLE
INTEGRATION



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SURFACE VESSELS

CRFS' innovative RF sensors help military forces across the globe achieve spectrum dominance. Integrated into larger systems, our technology enables real-time battlefield awareness and the ability to respond rapidly in dynamic situations.



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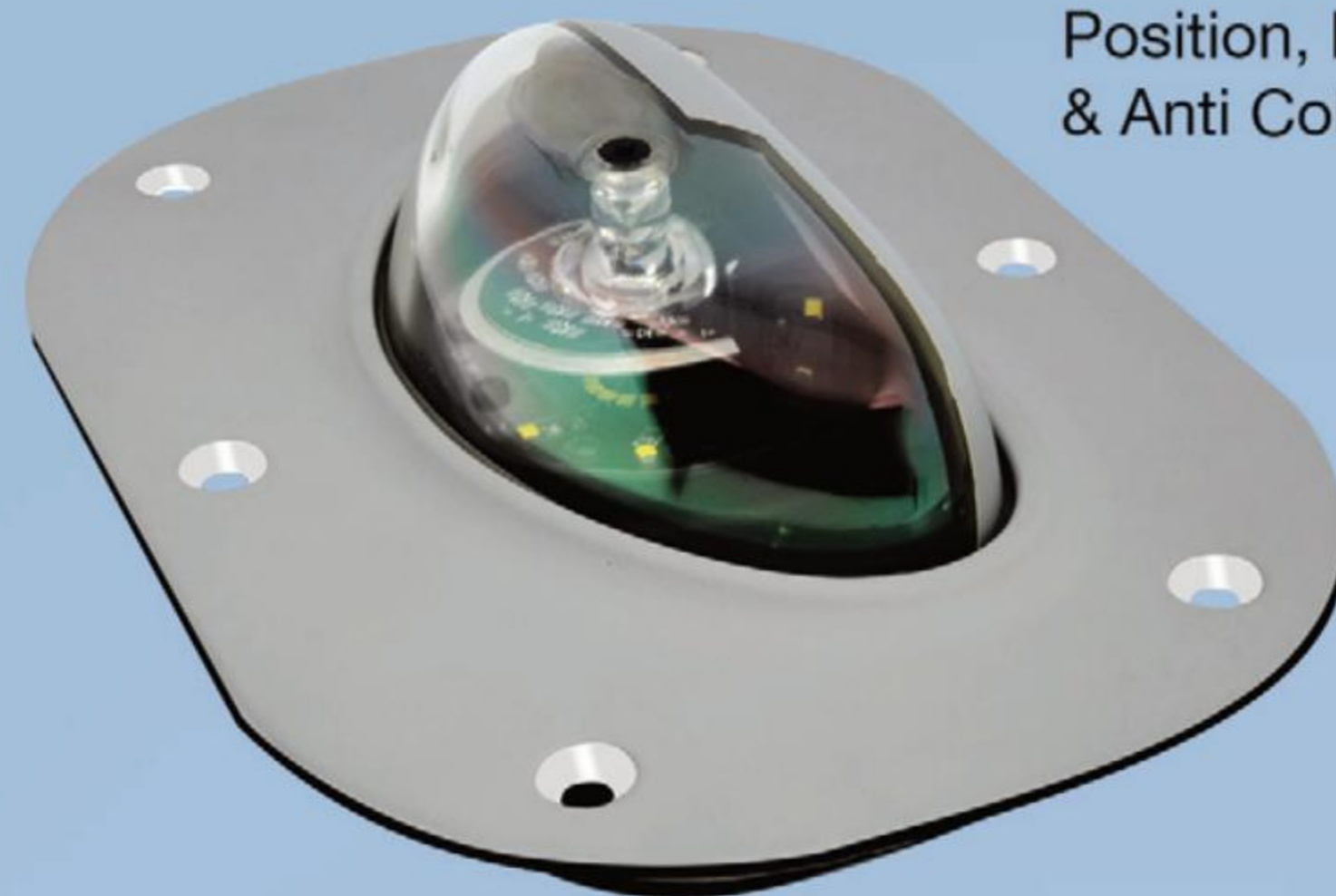
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SEA SURVIVAL TRAINING FOR MARITIME AIRCREW

Training aircrew is an expensive activity especially for those who have to parachute or escape from their aircraft in a maritime environment which generates major additional costs.

When combined the parachute and maritime aspects add even more to those costs.

Frequently this cost escalation involves uncontrollable costs and delays caused by uncertainty of delivery caused by unmanageable variables, usually weather related but serendipity generates others. Using a synthetic, nevertheless extremely realistic, and consistent training and testing environment can eradicate the variables and contain the costs. When all is said and done this training like all training has both direct and indirect costs. Reducing them has to be of benefit.

To run a safe training activity with all the necessary safety precautions involves a large number of people. For people outside the training permanent staff these have to be contracted in or borrowed from elsewhere as does their special equipment. So the safety boats they use, the rescue swimmer/divers, medical staff, ambulances, safety helicopter, rescue training helicopter, all have to be either brought in or diverted from other tasks. A large area of water has to be cleared of civil pleasure and working boats and once cleared. Couple all this with taking the trainees away from flying training for the duration of the



training and one can see how quickly the costs escalate. Throw in bad weather, facility or equipment non availability, we have all been the victim of helicopter gremlins, and the costs continue to escalate and there is a considerable element of uncertainty added to the whole process. This tends to blow a hole in flying training programmes and thus the throughput of students, a major concern for flying trainers and consumers worldwide.

When one comes to look at refresher training the situation is even worse. Students have to come from far away to be brought back up to standard and confirm their competence at routine drills such as being dragged by their parachute, getting into their own or even a communal dinghy and being winched up from the water or a dinghy.

How much better if this could be taught and practised in the same way as helicopter crews are taught to egress a sinking or sunken helicopter. Those same crews also have to go and do realistic dinghy retrievals and drills. They too are likely to experience similar delays and frustrations as fixed wing air crew. How much better if egress training and survival, SERE, training could be collocated.

Depending on weather conditions the end result of all of this is inconsistent training. One day trainees could be subjected to very rough seas, high wind and difficult light conditions, the next flat calm. The outcome from both is the same qualification. What trainers and examiners want is common standards, consistent training and tests





*SSL's METS® Model Jet.
Training Fast Jet Pilots to escape.
Which way is up?*

which won't cause unnecessary failures with more time wasted as students do additional runs and that are a fair test of skills taught prior to certification as fit to fly.

Survival Systems Limited (SSL) has a great deal of expertise in provision of Underwater Egress Training (UET) for rotary and fixed wing pilots and aircrew through the use of SSL's high-fidelity Modular Egress Training Systems (METS®) and integrated Personnel-Rated Lifts. Delivery of survival training includes elements such as dinghy and helicopter winching drills. SSL also has a lot of experience in maintaining and upgrading existing facilities. The latest upgrade and maintenance has recently been carried out in Saudi Arabia. Sometimes this work is carried out directly with the end user, sometimes through their own representative, and at others through 3rd parties. Saudi Arabia's was direct with SSL's client, Fire & Maritime Training Centre (FMTC) Safety.

Previously working on the French Navy (Marine Nationale) / CESSAN design of its retrofitted Water Survival Training Center to become a full maritime aircrew SERE and survival school, SSL outfitted Marine Nationale's Survival Training Simulation Theater (STST™) with its simulation equipment. Such simulators include SSL's Modular Egress Training Simulator (METS®); integrated Personnel-Rated Lift; Personnel Rescue Hoist, and Parachute training simulators. Yes there was an initial capital outlay. However the French rapidly appreciated that the savings against a combined capital and operating budget of the existing at sea training were so considerable that there was no economic sense in continuing with the sea based system. They opted instead for the more economical SSL simulator solution. It says volumes for the French procurement system that they were able to take such an holistic approach.

Where there are existing facilities it is usual for SSL to graft onto these and through added infrastructure, towers, machinery and equipment, water, etc. and the necessary environmental training aids including wind, rain, sound & lighting effects (moon, starlight, strobe, emergency, electric storms et al) waves etc., from a library of facilities and enabling technologies provide a very realistic environment to train in. Where money is not available "in year" the pool can be fitted "for but not with" and items fitted as the money is available. That having been said whenever they are fitted they are hugely appreciated for their realism. They all deliver realistic consistent training and testing conditions to

provide an effective regulatory regime that is simply not possible in an open water situation.

The variety and where required the complexity of the training can be matched into training progression or role requirements. Thus a trainee pilot can be trained to the minimum standard required to enable their over water flying training to progress. As their training becomes more demanding so too can their SERE and water survival skills training and if necessary their group training. The point is it can be tailored and controlled to facilitate and participate in rather than drive the schedule. Costs can be contained and flying training is not delayed or driven into overruns causing a delay or hiatus as is the case in UK at present.

Standardized and documentable training provides the benefit of an enduring capability that relieves the requirement for uniformed delivery. With established training methodology delivery within a safe, contained, and controllable Survival Training Simulation Theater (STST™), this capability can be easily civilianized to allow civilian operators the same benefits. By making available its proven simulators and facility design expertise SSL continues to facilitate the option of in-house or outsourced training delivery to paraphrase the company mission to effectively "use technology" to "enhance and preserve lives".

survivalsystemsgroup.com



*SSL's Bread and Butter a Helicopter METS®
begins to roll to practice inverted escape.*

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Elevating Connectivity: The Crucial Role of Ruggedised Satellite Communication Equipment

CP Cases is your go-to source for rugged protection and innovative solutions. Today, we want to talk about something close to our heart - ruggedised satellite communication equipment cases and why they are indispensable in today's world.

Unveiling the Vital Link

In an era defined by connectivity, whether it is for remote work, expeditions, or emergency response, satellite communication equipment is the unsung hero that keeps you linked with the rest of the world. But for this hero to shine, it needs a trusty sidekick - ruggedised cases. Let's explore why they are essential:

1. Unmatched Durability

Our ruggedised cases and racks are built to withstand the harshest conditions. Whether it's extreme temperatures, rough handling, or the unpredictable outdoors, they provide unparalleled protection. Think of them as the guardians of your precious communication gear.

Example: The CP Cases Amazon Rack

Our Amazon Rack is a prime example of rugged reliability. It offers a robust solution to safeguard your satellite communication equipment in any environment, ensuring it operates flawlessly when you need it the most.

2. Reliability Reinvented

Imagine being in a remote location with no room for equipment failure. Rugged cases offer a shield of reliability, ensuring that your satellite gear consistently performs, regardless of the surroundings. This reliability can be a game-changer in critical situations.

Example: The CP Cases ERack

Our ERack is a testament to innovation. It combines rugged durability with a lightweight design, making it perfect for the transportation and storage of satellite equipment. It's the partner you can always rely on.

3. Unburdened Peace of Mind

Peace of mind is invaluable when you are working or exploring in demanding environments. Ruggedised cases provide you with the confidence to concentrate on your tasks, knowing that your communication equipment is securely protected.

Example: The CP Cases Rugged Textiles

Our Rugged Textiles is designed for satellite communication applications, ensuring your equipment is safe and sound during transit. It's the epitome of peace of mind for satellite communication professionals.

4. Versatile Protection

Just as we have a deep appreciation for diverse and multifunctional equipment, we understand the importance of versatility in equipment protection. Rugged cases accommodate various satellite communication devices, from BGAN terminals to satellite phones.

Example: The CP Cases Airship

Our Airship is your all-in-one solution, designed to protect and transport a range of satellite communication equipment with custom foam that fits like a glove. Its versatility ensures that your gear remains in top-notch condition.

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Example: The CP Cases Airship

Our Airship is your all-in-one solution, designed to protect and transport a range of satellite communication equipment with

5. Equipment Lifespan Extension

Satellite communication equipment doesn't come cheap, and replacing it is a hassle you would rather avoid. Ruggedised cases aren't just protectors; they are equipment life extenders, offering significant cost savings in the long run.

Example: The CP Cases SatRack

Our SatRack is engineered for maximum protection and shock resistance. It is the guardian of your satellite equipment, ensuring it stays operational for years to come.

In a world where staying connected is essential, ruggedised satellite communication equipment cases play a pivotal role. They exemplify resilience and adaptability.

So, whether you are an intrepid explorer, a dedicated field worker, or simply someone who values top-notch gear, remember that ruggedised cases are the enablers of uninterrupted communication. They're your key to staying connected in the most challenging environments.

Stay connected, stay rugged, and explore the world with

UNLEASHING THE STAB-RIG

A CUTTING EDGE

In a battle against knife related crimes, Stab Resistant Vests are now a crucial part of protective clothing for law enforcement officers who face the constant threat of knife attacks.

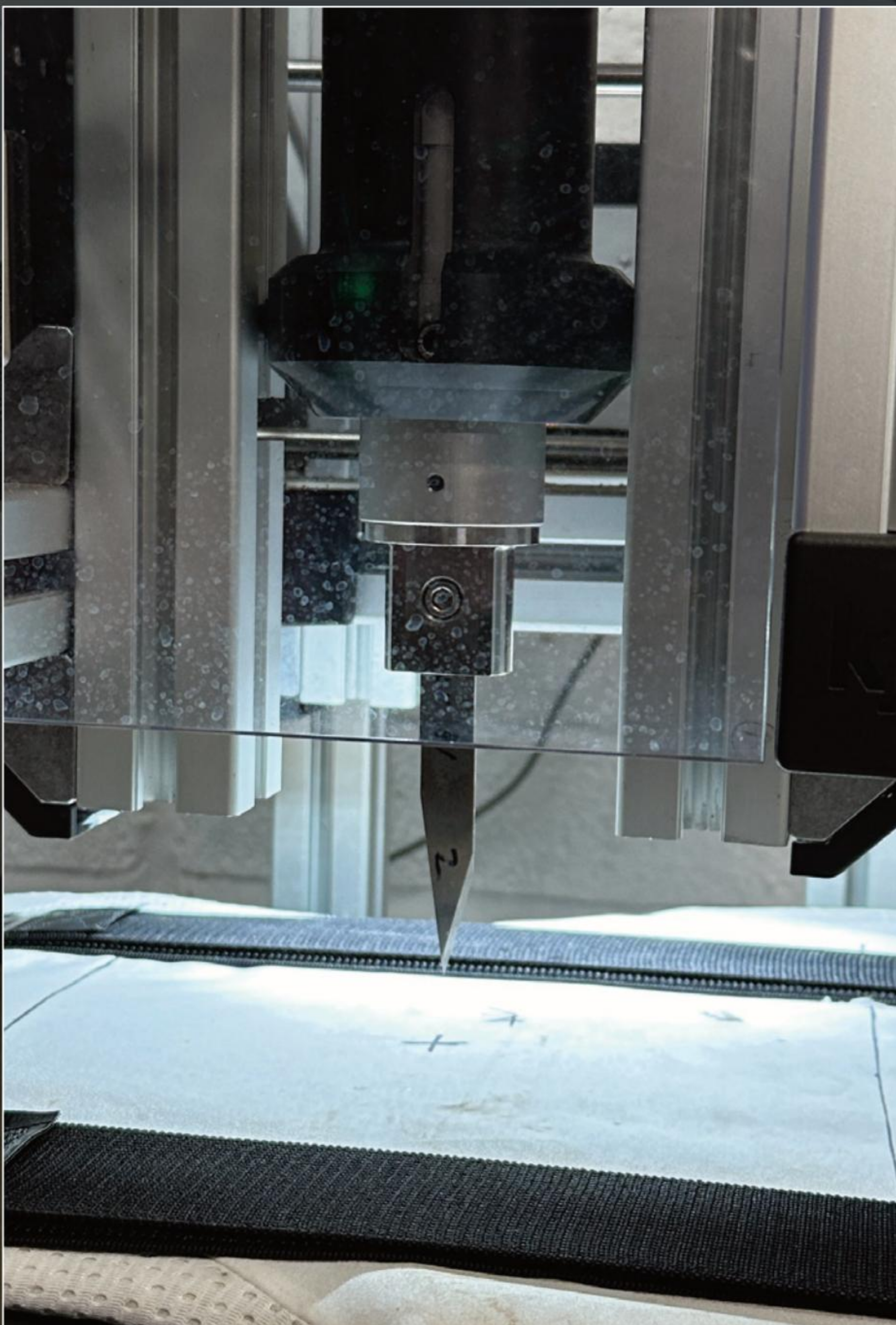
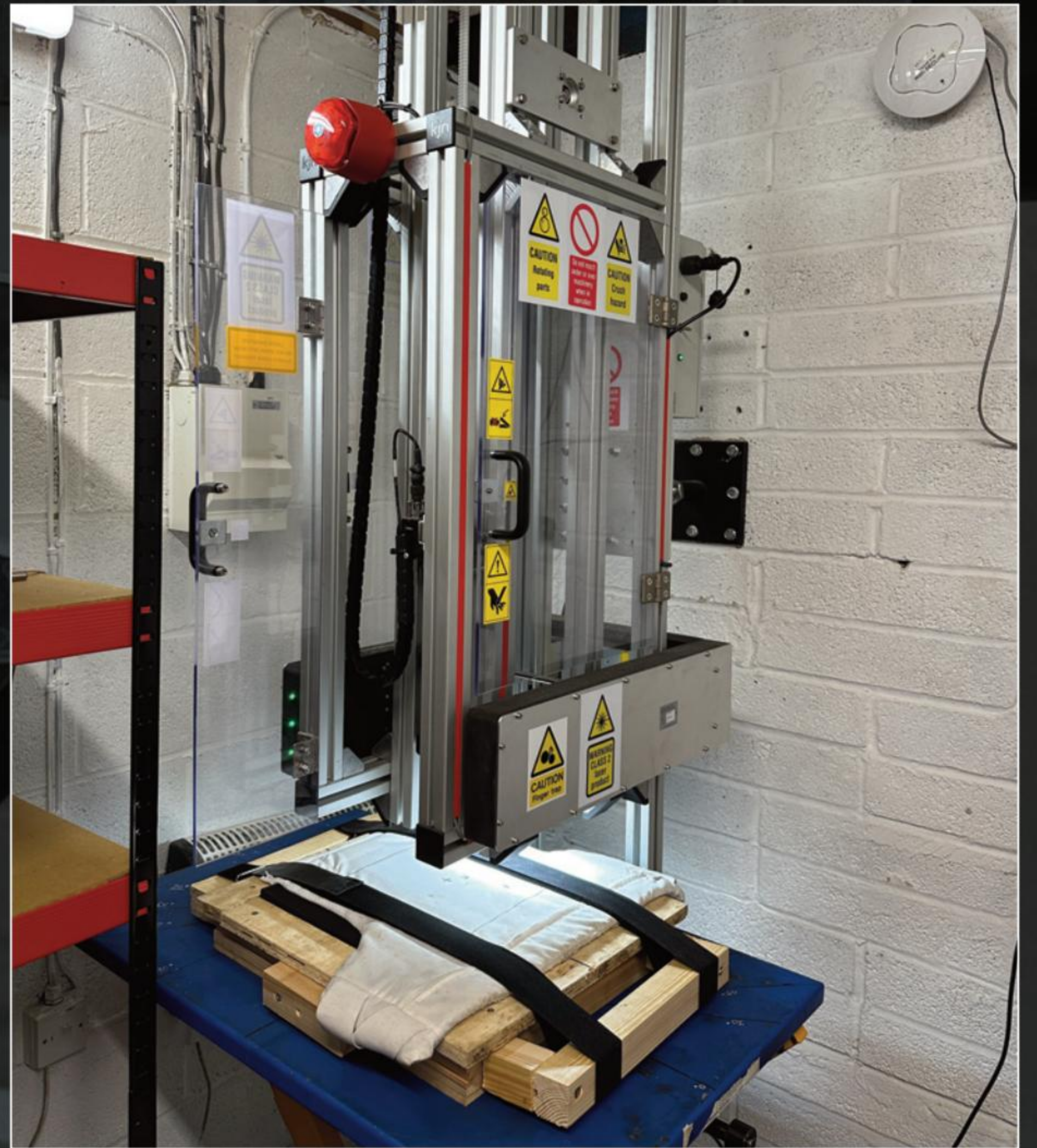
These vests are designed to withstand the force of sharp objects, providing a layer of defence that can mean the difference between life and death. However, ensuring the effectiveness and reliability of these vests is of utmost importance, and that is where the Stab Rig comes into play.

Wiltshire Ballistic Services' new Stab Rig was designed by engineers from MS Instruments Ltd, and is an exciting addition to the equipment at the test range.

The Stab Rig is state of the art test equipment that puts stab resistant vests through rigorous and realistic simulations. It replicates real life scenarios where officers may encounter knife attacks, allowing for accurate and comprehensive testing of the vest's performance. The Stab Rig's simulations are designed to mimic various types of knife attacks, including different angles and forces, providing a comprehensive evaluation of the vest's ability to withstand such threats.

With this ground-breaking equipment, Wiltshire Ballistic Services is leading the way in enhancing officer safety and making a significant impact in the fight against knife related crimes.

If you would like any further information on the above please contact Mr Paul Everington on paul.everington@msinstruments.co.uk or call Jason Laird, the Operations Manager on **01380 721644**



TSS INTERNATIONAL

LC300 Armour Mobility products tested and in service



- *Runlat: FINABEL100km- test Heavy Duty LC300 wheel successfully completed*
- *Brake System: EU road-worthiness approval for armoured LC300s*
- *Suspension Systems: More than 150 sets LC300 already in service*
- *Self-sealing fuel tanks: serial production in full swing*
- *SKYDEX Blast mitigation mats: Multiple customers achieve blast-certification after integrating SKYDEX into armour package*

TSS International's Heavy Duty Wheel Assembly for armoured conversions of the Toyota Land Cruiser 300 has been successfully road-tested for runflat performance with the Rodgard BPX STD runflat and Maxxis JRZ BRAVO 275/70R18 128Q 12PR tyre.

The testing procedure was according to the FINABEL standard and

consisted of driving with deflated tyre at the following speeds/distances:

- *3km @ 90km/h*
- *22km @ 50km/h*
- *75km @ 25km/h*

The runflat test was conducted under a 2.000kg load to simulate the wheel load of an armoured vehicle. This confirms that TSS Heavy Duty Wheel Runflat Assemblies are suited to the latest generation of Civilian Armoured Vehicles (CAV) in the highest protection classes. TSS customers convert Toyota Land Cruiser 300s up to protection level VPAM VR9, to protect end-users doing valuable work in hostile environments for NGO's, Embassies, Observation Missions and Special Police Operations all over the world.

Thousands of CAVs have been equipped with TSS Heavy Duty Wheels® with runflat capability.



To cope with the added weight of the armoured protection package, TSS also supplies MOV'IT brake systems for the Toyota Land Cruiser 300. This specially designed brake system is tailored for the increased weight and changed weight distribution of a CAV and has received road-worthiness approval for LC300s with a GVW of up to 6.300kgs. Endurance tests in a laboratory have also confirmed the durability of the brake discs for vehicles of that weight with a maximum speed of 160km/h. **Exclusive:** integrated, plug-and-play electronic parking brake!

The collaboration between TSS International and JRZ Suspension Engineering was made official in 2022 with TSS being appointed as official distributor of JRZ suspension systems. Since then, TSS has already supplied more than 300 vehicles (of which many Land Cruisers 300) being equipped with this innovative, Dutch-designed suspension system.

To limit some of the added weight to Civilian Armoured Vehicles, TSS International offers a self-sealing coating for fuel tanks. The coating, which is also automotive-standard flame retardant, is a lightweight solution for already heavy, discreetly armoured vehicles. TSS International has supplied thousands of self-sealing fuel tanks for the LC300s predecessor LC200, as well as many other platforms, including the MB G-Class, Nissan Patrol, various types of CIT trucks and armoured limousines.

Another lightweight and effective protection solution for (Civilian) Armoured Vehicles is the application of SKYDEX blast mats. These made to measure panels are placed under the feet of the vehicle occupants and protect passengers and driver against the kinetic energy of an under vehicle IED detonation. The mats compress to absorb and reduce the immense upward force being exerted on the feet and lower legs, greatly reducing injury chances. More than 125.000 US Army vehicles have already been equipped with this innovative floor protection and now multiple vehicle builders among TSS' customers have certified their blast protection packages with the addition of SKYDEX High Threat, validated with the new Biofidelic test dummy.

Adding to the safety inside the vehicle, TSS supplies B&G Intercoms, allowing for safe and secure communication with the direct surroundings of the vehicle. An easy to use push-to-talk and -listen intercom with integrated sirens and optional discrete LED emergency lights for in the vehicle's grill.



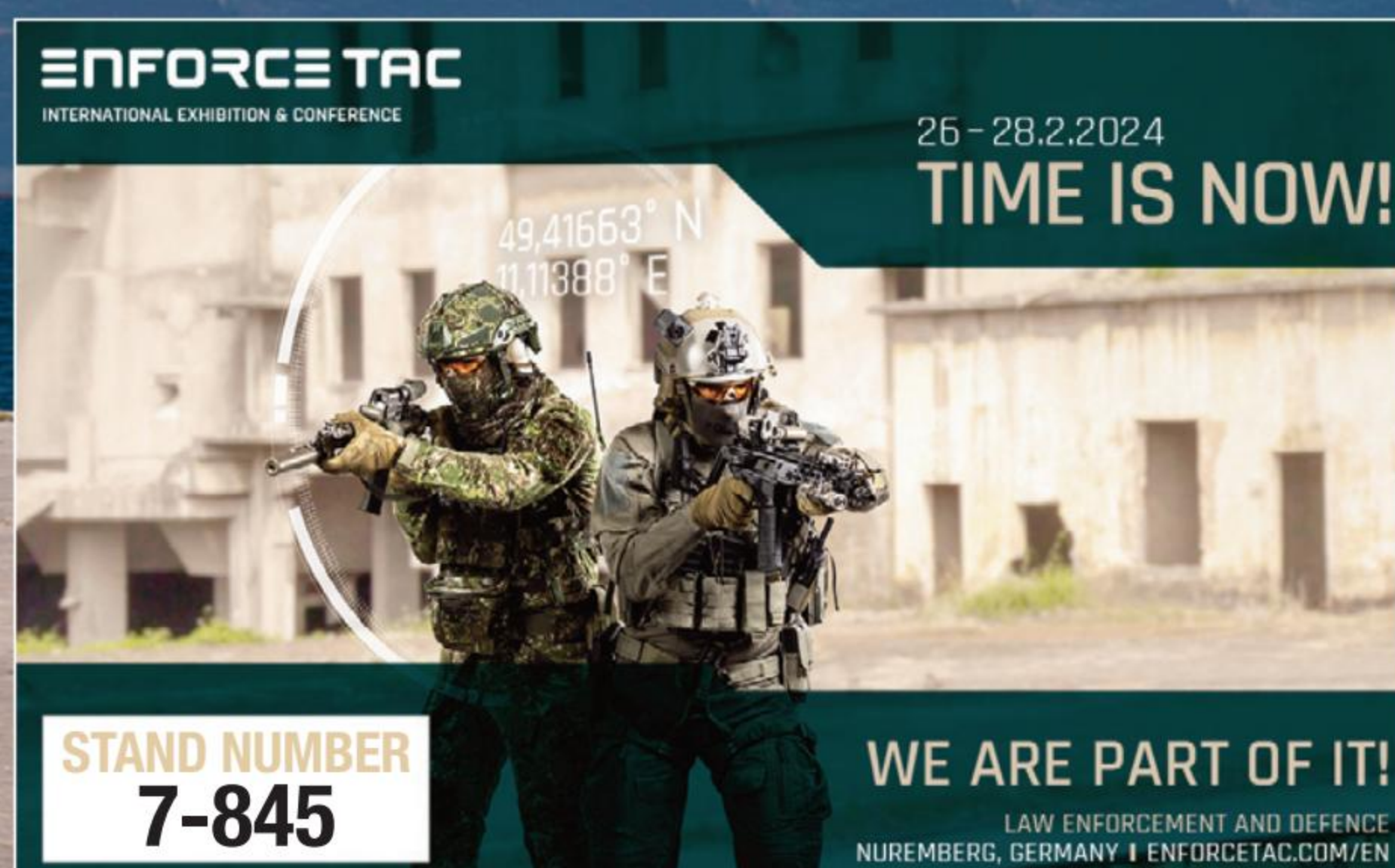
TSS is proud to be the one-stop-shop for mobility components for armoured vehicle builders. Turn to TSS International BV for all your Armour Mobility® needs: Heavy Duty Runflat Wheels, Brake Upgrades, Suspension Systems, Self-Sealing Fuel Tanks, Blast Mitigation Mats and Vehicle Intercoms.

Contact us via the QR code in the article, or visit:

www.TSSH.com



ARMOUR
mobility



Avon Protection enables military diving mission success

Avon Protection has made it its mission to provide life-critical solutions that allow personnel to complete their tasks safely in extreme operating conditions.

While best known for its globally deployed CBRN protection systems, the company also supplies the market-leading military diving system: the MCM100 Multi-Role Rebreather.

The MCM100 is a configurable underwater life-support capability for global military divers. With an advanced electronics architecture, the system is designed to take critical safety monitoring and decision-making cognitive burdens off the diver, allowing them to concentrate on the mission at hand.

The closed-circuit system manages oxygen levels using digital sensors and a native decompression algorithm. Additionally, the MCM100 reduces the physical burden on divers with an

extremely low work of breathing (WOB) design; and has a low magnetic and acoustic signature enabling stealth and mine countermeasures (MCM) operations.

Originally developed in collaboration with the UK's Defence Science & Technology Laboratory and the Royal Norwegian Navy, Avon Protection has continued to develop the system in cooperation with international user groups for operations across the underwater mission set – from MCM and explosive ordnance disposal (EOD) clearance, to special forces operations, covert subsurface infiltration, submarine release & infiltration, and manned underwater vehicle operations.

“One thing that nearly all military diving roles have in common currently is the push to extend the mission envelope, with a general drive toward allowing divers to operate deeper and for longer periods than ever before,” Kevin Gurr, Director of Underwater Systems at Avon Protection, said. ***“Paired with this is the changing nature of the threat***



in the maritime domain which can see divers operating also in very shallow waters and needing to carry out a range of tasks in a single mission, so we need to ensure they are supported and safe throughout.”

To keep ahead of the threat, Avon Protection has introduced a number of new technologies for the MCM100 in the last twelve months.

The MCM100 is in use with the naval forces of multiple NATO, partner and Five Eyes nations and its selection by leading military forces is a testament to Avon Protection’s forward-looking development approach.

“When we launched the MCM100 in 2018 it delivered a revolution in rebreather technology, and under our ongoing spiral development it remains the most future-proofed product on the market today,” Gurr said. *“We have engineered many ‘smarts’ into the system that remain to*

be deployed, plus built-in technology pathways that allow diving teams to evolve their operational needs without needing to go back to the drawing board every time the threat landscape shifts.”

“In providing a reconfigurable and flexible system, we will continue to help our partners achieve their goals well into the future with our MCM100 rebreather.”

www.avon-protection.com

AVON
PROTECTION

New Extended Performance Primer from HMG Paints



2,000 Hours Salt Spray Performance

This recently developed primer system boasts an impressive capability to endure over 2,000 hours in BS EN ISO 9227 salt spray conditions, making it a standout performer in demanding, high-stress environments. The high-performance primer has been meticulously developed to ensure ease of application and can be conveniently used wet on wet over a blast profile.

Designed with a keen focus on corrosion protection, the new primer finds its ideal application in scenarios where environmental challenges such as high ambient temperatures and humidity prevail. Its versatility extends to both ferrous (Type 1) and non-ferrous (Type 2) substrates, making it a valuable asset across a range of land based defence applications. Meeting and surpassing the rigorous standards set by Def Stan 80 – 225, this primer sets a new benchmark in protective coatings.

For non-ferrous substrates, the primer is recommended to be used in conjunction with the DEF2601002 Etch Primer, available in 10-litre kits. The new primer is conveniently packaged as a 5-litre kit, identified by the product code DEF2301001 Light Grey Polyurethane Primer (NSN8010999130006). HMG's commitment to advancing defence coatings is evident in the development of this primer, offering military and defence applications an effective solution for enhanced durability and corrosion resistance.

HMG at DVD Show 2024

HMG Paints have also confirmed their attendance at DVD 2024 which is taking place at UTAC Millbrook on the 18th & 19th September. The team will be on stand C3-819 throughout the exhibition for any visitors who want to visit and speak to the team. If you'd like to book ahead to meet the team at DVD 2024 or arrange a technical visit prior to the event you can do so by emailing defence@hmgpaint.com.

As a British based manufacturer HMG can provide fast delivery across its entire range, something which the company believes can benefit businesses who use JOSCAR and other OEMs and refinishers.

HMG is also now JOSCAR certified which means Primes can speed up their access to HMG's defence portfolio, and all products are also Made in Britain certified. The HMG Defence range offers products which are free from Chrome VI, meet low VOC requirements, IRR and CARC paints and includes military standards such as 80-225.

Alongside Defence Standard products, HMG produce a wide range of approved high-quality coatings for practically every purpose for the defence industry. You can find out more about HMG's range of Def Stan products and bespoke coatings development service at www.hmgpaint.com/products/landing/Defence.

HMG's product range is suitable for equipment such as containers, trailers, vehicles, bridges and armour. HMG are renowned for their innovative approach to coatings including corrosion resistant primers,

Manchester based; HMG Paints continues its commitment to innovation in defence coatings with the introduction of a cutting-edge 2 pack Polyurethane primer system which surpasses the requirements of Def Stan 80 – 225 for land based military equipment.

functional topcoats approved to UK defence standards and if you can't find the perfect product in their existing portfolio the company is also able to offer bespoke formulation development to solve those tricky paints and coatings problems.

If you require further information on the press release, please contact:

Stephen Dyson | HMG Paints Communications
sdyson@hmgpaint.com | 0161 205 7631

HMG Paints Ltd is the UK's leading independent Paint Manufacturer and a proud, family-owned business situated in Manchester. Working alongside new and long-term customers, HMG are committed to sustainability, innovation and customer satisfaction. With over 90 years' experience in developing innovative coatings, HMG's portfolio of wet paint and aerosols cover virtually every type of surface imaginable across a whole host of industries including industrial, commercial vehicle, decorative, automotive, protective coatings, defence, toll manufacturing, wood finish and arts & craft. HMG have a drive to set the standards for the industry not just meet them.

For more information, please visit www.hmgpaint.com or visit **www.shop.hmgpaint.com** to discover decorative paint and inspiration.

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SCAN ME

POWERED BY TSS International BV 

Milanium's Dual-Use Innovations

Revolutionising Autonomous and Robotics Technologies

Over the past few years, the field of autonomous and robotics technologies has experienced exponential growth, particularly in the defence and security sectors.

This growth has been facilitated by companies like Milanium, an integrated technology company that develops and manufactures in-demand, battle-ready products for the tri-service defence and security sectors.

Developing Highly Mobile and Automated Solutions for the Defence and Security Sectors

Milanium focuses on providing cutting-edge solutions that are characterised by their mobility and automation. These solutions can operate in various modes, including manned, autonomous, or remote operation. With a firm commitment to innovation, Milanium's products are designed to offer seamless integration and interoperability with different systems. This modular and "plug and play" approach not only makes their solutions affordable and adaptable to various mission requirements but also ensures simplicity in their operation to improve safety, security, and productivity.



Integration of AI Technologies

At Milanium, artificial intelligence (AI) takes centre stage in their ongoing technological advancements. By harnessing the power of AI technologies, Milanium can deliver sophisticated solutions with superior flexibility, scalability, and reliability. With an AI-driven approach, they can customise their products to meet the unique specifications and local requirements of their customers. This emphasis on AI technology allows Milanium to remain at the forefront of the industry, continuously striving to push the boundaries of autonomous and robotics technologies.

Strategic Investments and Global Market Capture

Milanion is committed to capturing a significant share of the global demand for easily deployable, robust, and mobile platforms. In pursuit of this goal, the company strategically invests in research and development, manufacturing, and human resources. Milanion actively engages in research projects, field trials, and demonstrations in collaboration with defence organisations, research institutes, and universities. By investing in advanced AI technologies and staying ahead of emerging trends, Milanion positions itself as an industry leader.

Diverse Product Offerings

Milanion's product portfolio is divided into three distinct areas: Land Systems, Marine Systems, and Artificial Intelligence (AI). Each division operates under the guidance of a dynamic management team comprising industry experts. Among their flagship products is the AGEMA Unmanned Ground Vehicle (UGV), a versatile and reliable platform designed to support operational requirements in defence, civil defence, security, and rescue sectors. This UGV exemplifies Milanion's commitment to delivering innovative solutions that integrate seamlessly with existing frameworks.

Advanced Autonomous System

Drawing upon their proprietary advanced autonomous system, Milanion offers unparalleled fault-tolerance, resilience, and reliability in their products. The architecture of their system is designed to be compatible with a variety of payloads, sensors, and communication systems, enabling adaptability to both current and future operational requirements. Regular feedback from system operators is incorporated to continually enhance performance. By incorporating their advanced autonomous system in their products, Milanion ensures top-of-the-line capabilities and cutting-edge technology.

Unrivalled Modularity and Scalability

Milanion's system architecture offers unrivalled modularity and scalability. They guide end-users to seamlessly integrate their modular solutions into existing frameworks, creating solutions that are perfectly tailored to specific operational requirements.



This architecture also allows for the addition of new features and functionalities to existing products, enabling end-users to adapt to emerging needs and acquire the latest technology developments without the need for complete system replacements. Milanion's commitment to flexibility and adaptability ensures their products always remain at the cutting edge.

Purpose-Built Variants for Enhanced Safety and Efficiency

Understanding the diverse operational scenarios faced by their customers, Milanion actively develops purpose-built variants of platforms. These variants cater to specialised requirements, enhancing safety and efficiency during operations. Examples include the Multi-launcher AGEMA UGV equipped with a multi-launcher for loitering munition drones, Surveillance UGV, MEDEVAC UGV, and Route clearance AGEMA UGV. Through these purpose-built variants, Milanion ensures their products are tailored to specific operational scenarios while maintaining interoperability between different platforms.

Milanion's relentless pursuit of innovation and commitment to technological breakthroughs have solidified their position as a leader in autonomous and robotics technologies. Their highly mobile and automated solutions, modular design, integration of AI technologies, and commitment to customer satisfaction have made them leaders in the industry. With their focus on providing cutting-edge systems and a dedication to solving evolving operational challenges, Milanion continues to revolutionise the way autonomous and robotics technologies are utilised in the defence and security sectors, globally.

www.milaniontech.com

MILANION
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