

SPOTLIGHT  
ON DSEI

DSEI

European  
Security  
& Defence

FOR A SUBSCRIPTION PLEASE  
SEND AN EMAIL TO:  
ESD.SPOTLIGHT@MITTLER-REPORT.DE

**ESD Spotlight**

Email newsletter of the bimonthly magazine  
"European Security & Defence" (ESD)

**Editor-in-Chief:** Dr. Peter Bossdorf  
**Deputy Editor-in-Chief:** Henning Bartels  
**Managing Editors:** Dorothee Frank (df)  
(newsletter) and Stephen Barnard (sb)  
(magazine)  
**Editors:** Gerhard Heiming (gwh), Juergen  
Hensel (jh), Yury Laskin (yl)

**Layout:** davis creativ media GmbH  
**Photo front page:** Maestro Graphics

MITTLER  
REPORT

Published by  
Mittler Report Verlag GmbH  
A company of Tamm Media Group

Mittler Report Verlag GmbH  
Baunscheidtstrasse 11  
53113 Bonn, Germany  
Phone: +49 228 350087-0  
Telefax: +49 228 350087-1  
Email: esd.spotlight@mittler-report.de  
www.euro-sd.com

Managing Directors: Thomas Bantle, Dr. Peter  
Bossdorf and Peter Tamm  
The company is located in Bonn  
District Court of Bonn – HRB 18658  
Identification number DE 811 223 089

## The rise of offset

Offset deals in public international defence procurement are one of the most secretive, complex and riskiest aspects of international defence trade. Such deals often include decade-long obligations and investments that defence vendors have to fund, operate, and manage; and oblige vendors to achieve certain results in foreign opaque and unknown markets. Offset obligations are material in value, and are estimated to be worth \$450 billion worldwide. What is more, offsets are extremely resource-intensive, as they very often require defence vendors to transfer their technology and knowledge to both public and private entities of the buyer-countries.

To add to that, offset deals are often covered by national security policies and are outside the scope of public scrutiny – that makes them a breeding ground for potential corruption.

### Background

So why do defence vendors engage in offset deals? The answer is that those deals, which are often referred to as "sweeteners", are required worldwide, and are on the increase. The vendors are required to engage in either direct or indirect offsets – often, offset packages include both elements. Direct offsets are directly related to the main contract – for example, the procuring country may oblige the vendor to produce part of the items within the main contract in the procuring country, as well as transfer related technology and to train the domestic producers how to use it. An indirect offset is unrelated to the main contract, and may include financing local businesses, setting up factories and selling part of the local production in the vendor's home country, promoting tourism, and many other

Vendors	Obligations, \$, bn
Lockheed Martin	\$ 23.709
Boeing	\$ 9.135
ex EADS	\$ 6.268
Raytheon	\$ 5.777
BAE Systems	\$ 3.181
Finmeccanica	\$ 2.293
Northrop Grumman	\$ 2.256
General Dynamics	\$ 1.296

**Table 1. Outstanding offset obligations of selected defence contractors, 2012 - 2022, USD billion. Source: IHS Janes.**

economy-boosting initiatives. Overall, most offset policies differ from market to market, and the types of offset investments are mostly selected on a discretionary basis – therefore, each offset package is unique.

Traditionally, the goal of offset mandates has been to recoup some of the costs that are incurred due to sourcing expensive weapons systems from foreign entities using public funds. Recently, however, many countries have become more pragmatic – an example is the United Arab Emirates. The U.A.E. has been deploying offset deals to reduce its economic dependency on oil-related industries by requiring defence vendors, through indirect offsets, to invest in the U.A.E.'s domestic IT and other high-value-added sectors.

Another aspect worth noting is that the unique nature of offset packages makes valuation challenging. Most offset policies require 30% to 120% of the value of the main contract to be generated by the vendor in the domestic market of the purchaser, which is achieved by adhering to market-specific requirements; purchasing countries also use multipliers to promote activity in certain sectors, locations or socioeconomic groups.

For example, the UAE, among other conditions, allow vendors to claim \$5 in offset credit

for each \$1 created by promoting exports of UAE companies to new markets; a higher multiplier can be claimed if the exporter is an SME that hires many graduates.

### Evolution through European Politics

With the recent turmoil in the global geopolitical arena, and increasing defence budgets of Eastern countries (Eastern Europe, the Middle-East, India, Japan), the defence market has been experiencing an increased rate of procurement, both in value and in volume of deals. What is more, the economic and political situation in Europe incentivizes major European countries to re-ignite global relationships and foster stronger links with the developing world – the recent sales of French fighter aircraft could be considered to be an example.

Significant economic connections are a strong way to develop international relations. For example, we note the involvement of Francois Hollande, President of France, in the recent Dassault Rafale sales to India. After years of unsuccessful bids, including three-year negotiations regarding the purchase of 126 Rafales which did not come to fruition, Hollande persuaded Narendra Modi, the Prime Minister of India, to procure 36 units from Dassault in ready-to-fly condition – the latter term was in fact contrary to Modi's Make In India policy, which aims to securing offsets in defence purchases.

Considering the availability of competitor aircraft, it appears that the strategic politics behind the defence deal were aimed at creating a long-term economic relationship through offsets. In fact, following the agreement, Hollande promised to invest €2 billion in India, including building AREVA's 'European Pressurized Reactors' in Jaitapur, deals in rail and cinema, which will fall in line with Modi's Make In India programme. It is likely that the economic connections that arise from the multi-billion offset deals will establish a long-term partnership between France and India.

### Key risks and issues

Considering the above, it is necessary for the contractors and the subcontractors to evaluate and mitigate risk. Entering a new market under such conditions is risky from a compliance point of view, especially when offset and local content obligations entail close cooperation with potentially "corrupt" domestic companies.

The willingness of regulators to pragmatically prosecute international companies for foreign bribery is clear, as seen in FCPA enforcements against Siemens (settled for \$800 million), Alstom (settled for \$772 million) or KBR/Haliburton (settled for \$579 million). What is more, post-settlement expenses, such as retaining a corporate monitor, can reach tens of millions of dollars. Even in defence deals, where the 'national security' argument had traditionally been used to justify the lack of transparency, enforcement is growing, as seen in BAE Systems' \$400 million settlement in 2010.

Of the key risks and issues – such as deal structuring-related due diligence of prescribed domestic partners, valuation and performance-related implications on accounting and internal books and records, protection of intellectual property rights, etc. – this article focuses more on the key risk that leaves the vendor and its board directly responsible for ABC violations – the third-party risk. Offset packages by nature involve many government-prescribed domestic partners, often through a handful of gateway intermediaries.

Due to the significant resources committed, domestic partners are, for example, potentially able to channel kickbacks to public officials and engage in other corrupt practices which expose the prime contract to various bribery risks. Further, to cope with offset performance and other local issues, third-party advisors are often brought in by vendors to manage and advise. These third-party consultants are typically local well-connected experts – their local knowledge allows them to

complete offset obligations efficiently. However, they also pose high corruption and bribery risks, which may lead to the main vendor being sanctioned in their home country for the actions of the third party (90% of the FCPA-related cases have involved third-party corruption). In addition, third parties and domestic partners are often remunerated on a success-based commission - inadequate performance reporting and other types of fraud expose the vendor to liabilities in both the buyer country and its own.

### Conclusion

In conclusion, the offset industry is booming – which has both positive and negative effects. The positive effects of offset deals are that they promote globalization and economic development of certain markets, as well as allows for countries to form new trade-friendly relationships. The negative effect is that they open defence and other contractors to potential liabilities, both from their own offset programs, and from those obligations that are agreed with prescribed domestic partners – such partners usually come with their own accounting, internal controls, books and records, and procurement methods, which potentially expose the vendors and contractors to liabilities at their home countries.

The highest risk for vendors is non-compliance, which can lead to sanctions in multiple jurisdictions and the loss of the main contract. Vendors should proactively ensure that controls, culture and compliance standards in their offset arrangements meet or exceed the standards in their primary business lines.

Finally, and most importantly, it is vital to remember that in offsets, one size does not fit all – a flexible, risk-adjusted approach is of crucial importance.

**Authors:** *Derek Patterson, Principal Forensic Risk Alliance, and Lukas Bartusevicius, Business Development Analyst at Forensic Risk Alliance.*

### British Warrior armoured vehicle programme

(df) At DSEI Lockheed Martin will show the British Army's Warrior armoured vehicle, which has recently demonstrated its firepower and fighting capability during successful firing trials in Scotland. Those trials have proven that the Warrior vehicle's new turret and cannon can successfully fire against targets while on the move.

The UK is planning as part of the Warrior Capability Sustainment Programme to upgrade the Army's fleet of 380 Warrior vehicles. Modified, designed and installed by engineers at Lockheed Martin UK's Ampt-hill site in Bedfordshire, the infrastructure

of the Warrior vehicle will be significantly improved, including fitting the new turret with the ultra-modern CT40 weapon system, an updated environmental control system to improve crew comfort, better all-round awareness cameras and driver's night vision, along with a modular protection fitting system to the chassis to enable quick change of armour for specific threats.

Another highlight at Lockheed Martin will be the latest C-130 maritime patrol variant that utilizes the Anti-Submarine Warfare (ASW) Mission System. The endurance of the SC-130J leads to more time to locate and engage targets, fewer sorties required



(Photo: Lockheed Martin)

to achieve needed coverage and the ability to do more with fewer aircraft. Capabilities include infiltration/exfiltration, ASW sensors, ASW/Anti-Surface Warfare (ASuW) weapons, endurance, and low-altitude operations.

[www.lockheedmartin.co.uk](http://www.lockheedmartin.co.uk)

### From camouflage to shoulder launched systems

(df) At this year's DSEI, Saab will exhibit their latest detection solutions. From radars and command and control, to ground combat systems, vehicles and training. Among them the MCS Mobile Camouflage System for protection on the move, allowing sensor protection and heat-transfer reduction in one system. Military vehicles are used in support of operations in a wide variety of settings with constantly changing threats and intensity. Since vehicles are most vulnerable while moving, mobile camouflage is a highly important equipment area. With optional heat reduction capability further protection is achieved.



(Photo: Saab)

Another highlight will be the NLAW (Next generation Light Anti-tank Weapon), the latest shoulder-launched, overfly top attack, anti-tank missile system that makes it a good choice for light forces that operate dismounted in all environments including built up areas against tanks. Especially interesting is the selectable overfly top

attack (OTA) against armoured targets and direct attack (DA) against non armoured targets such as other vehicles and vessels or enemy troops inside buildings. Other features include PLOS (predicted line of sight) guidance and OTA delivers easy handling, accuracy and high kill probability.

Of course Saab will also showcase their different versions of the modernized and already battle proven Carl-Gustaf shoulder launched multi-purpose weapon system. For example the M3 version of the launcher features significant weight reduction and improvements for urban operations.

<http://saab.com>

### AMV35 for the Australian Land 400 Phase 2

(gwh) BAE Systems has submitted its bid for LAND 400 Phase 2, committing to manufacture and support the Australian Light Armoured Vehicle (ASLAV) replacement in Australia if successful.

Modern systems and components will be shown among other highlights during the DSEI.

BAE Systems revealed further details about its offering of a highly protected armoured vehicle integrated with a com-



(Photo: Patria)

bat-proven turret for the Australian Army's Mounted Combat Reconnaissance Capability project. As bid prime contractor, the company has teamed up with Patria to put

forward the AMV35, which combines the Patria Armoured Modular Vehicle (AMV) and the BAE Systems Hägglunds E35 manned turret.

The AMV has been selected by seven countries, with more than 1,400 contracted vehicles; meanwhile, the turret system is fitted to the CV90 family of infantry fighting vehicles, BAE Systems said in a statement issued the day after the Request for Tender (RFT) closed.

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

[www.patria.fi](http://www.patria.fi)

### Billion Euro deal for Oshkosh Defense

(df) At the Oshkosh booth at DSEI visitors will hear and see more about the new Oshkosh JLTV, that has recently won the billion Dollar procurement of the US forces. The U.S. Army Tank-automotive and Armaments Command (TACOM) Life Cycle Management Command (LCMC) has awarded Oshkosh Defense a €6 billion firm fixed price production contract to manufacture the Joint Light Tactical Vehicle (JLTV).

The JLTV programme fills a critical capability gap for the U.S. Army and Marine Corps by replacing a large portion of the legacy HMMWV fleet with a light tactical vehicle with far superior protection and off-road mobility.

During the contract, which includes both Low Rate Initial Production (LRIP) and Full Rate Production (FRP), Oshkosh expects to

deliver approximately 17,000 vehicles and sustainment services.

The JLTV programme provides protected, sustained and networked light tactical mobility for American troops across the full spectrum of military operations and missions anywhere in the world. The JLTV production contract awarded to Oshkosh includes a base contract award and eight option years covering three years of LRIP and five years of FRP. Oshkosh will begin delivering vehicles approximately ten months after contract award.

The JLTV Family of Vehicles is comprised of two variants, a two seat and a four seat variant, as well as a companion trailer (JLTV-T). The two seat variant has one base vehicle platform, the Utility (JLTV-UTL). The four seat variant has two base vehicle platforms, the General Purpose (JLTV-GP) and the Close Combat Weapons Carrier (JLTV-CCWC).



(Photo: Oshkosh)

The Oshkosh JLTV combines the latest in automotive technologies with the Oshkosh CORE1080 crew protection and TAK-4i independent suspension systems to provide next generation performance. In designing its JLTV, Oshkosh leveraged its extensive experience producing and sustaining more than 150,000 heavy, medium and protected MRAP vehicles for the U.S. and its allies.

<http://oshkoshdefense.com>

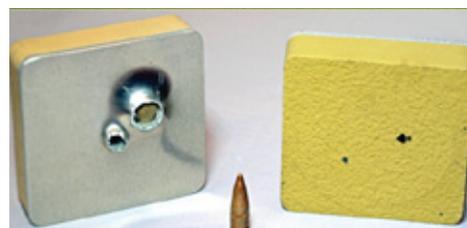
### Spray on BattleJacket

(df) Permali Gloucester Ltd has recently signed a contract with US Company High Impact Technology LLC (HIT) to become the sole UK applicator of its novel and operationally proven self sealing fuel tank technology BattleJacket, which will be displayed at DSEI.

The BattleJacket system is an elastomeric "spray on" coating, which can be applied to both metallic and plastic surfaces. It is based on a specially formulated fire resistant urethane modified for military applications. Special super absorbent polymer beads are used as the basis of the self sealing mecha-

nism, which are sprayed into the middle layer during the application process. These beads swell into a solid when exposed to fuel, acting in conjunction with the top and bottom urethane layers to tightly seal the entrance and exit holes created by a projectile.

The system works like a mechanical skin, healing itself within seconds of attack and sealing any entrance holes. The thickness of coating can be varied to meet specific ballistic threat levels and, by allowing projectiles to harmlessly penetrate the tank without loss of fuel, it can also prevent lethal ricochets. For penetrations that exceed



(Photo: Permali)

the engineered threat level, and therefore do not self seal, a field patch repair kit, able to be applied in seconds, can be simply screwed into the coating and underlying tank, sealing the damage using the same absorbent bead technology. No special training or knowledge of the system is required.

[www.permali.co.uk](http://www.permali.co.uk)

### Autonomous minesweeping capabilities

(df) ATLAS ELEKTRONIK UK will showcase their autonomous minesweeping capability, that has won the first phase worth of an €18 million contract by the UK Ministry of Defence to supply the Royal Navy.

These Unmanned Surface Vessels (USV) create underwater influences to detonate mines in a controlled manner. The contract

will be executed over the next 5 years to restore minesweeping capabilities to the Royal Navy. Two ARCIMS systems have already been delivered to an overseas navy, so this contract with MoD builds on the ARCIMS Mission System fitted with the latest generation of minesweeping payloads. The system includes autonomous "Sense & Avoid" capability to enable safe operations at sea.

The ARCIMS mission system is based on a specially designed 11 metre vessel and can therefore be transported easily by road, rail or military aircraft. It can be operated either from the shore with the minimum of support or also be launched and recovered from platforms like a RN Hunt Class Mine Countermeasure Vessel (MCMV).

[www.uk.atlas-elektronik.com](http://www.uk.atlas-elektronik.com)

### Patrias new AMVXP armoured wheeled vehicle

(df) Patria will show their new Patria AMVXP armoured wheeled vehicle, and the Patria Nemo training simulator at DSEI. Patria The AMV product family combines high payload capacity with the latest technology. These features enable simultaneous integration of a high level of protection with heavy weapon systems without compromising the mobility of the vehicle. The Patria AMV 8x8 has been developed to provide optimal modularity of components and to be adaptable for a wide range of versions without changing basic vehicle systems. It is available in three different models:

The Basic model provides the platform for following variants: armoured personnel

carrier (APC), infantry fighting vehicle (IFV), command vehicle, ambulance, reconnaissance vehicle, anti-tank guided missile vehicle (ATGM), armoured repair and recovery vehicle (ARRV), and finally, the 120 mm Patria Nemo mortar system.

The High Roof Model provides extra space at the rear of the vehicle (34 cm higher than the basic model), which is ideal if the vehicle is used as a command, C4I, ambulance or workshop vehicle.

The Heavy Weapon Platform has been optimised to carry large-calibre weapon systems such as the 120 mm AMOS mortar system or the 105/120 mm cannon (MGS). All previously mentioned 3 models and all their variants of AMV are available as 40 cm stretched vehicle. The AMV offers the best ballistic protection level in its class,



(Photo: Patria)

providing front sector protection against APFSDS rounds up to 30 mm and excellent defence against IEDs, EFPs as well as TNT mines of up to 10 kg. Vehicle's high payload capacity allows a variety of weapon systems to be integrated into the vehicle, starting from 7.62 mm machine guns and extending to a 105/120 mm cannon and a 120 mm AMOS/Patria Nemo mortar system.

<http://patria.fi>

### Laser technology on the move

(df) Visitors of the Rheinmetall booth at DSEI will be able to learn – among many other new systems – about the newest laser portfolio of the German company. High energy and space requirements and low efficiency have been obstacles to the development of laser weapons. With the new generation of diode-pumped solid-state lasers a new accuracy has been achieved. With its high-energy laser effector (HEL), Rheinmetall Defence has made another important step towards a field-ready version of this technology by not only increasing the laser power on the dynamic target over a distance of 3,000 metres but also integrating it into a mobile platform.

For this a 5 kW HEL was installed on the GTK Boxer wheeled vehicle, a 1 kW HEL on an M113 tracked vehicle, and a 20 kW HEL on an armored Tatra truck. In addition, a 1 kW laser (Mobile HEL Effector) was integrated into the M113 and has already demonstrated its potential application in ordnance clearance.



(Photo: Rheinmetall)

An Air Defence HEL effector capable of engaging low, slow, small (LSS) threats will be presented at the show for the very first time. The HEL effector for maritime applications will also have its debut at DSEI.

Another focus at DSEI will be the air burst capabilities of Rheinmetall, ranging from 40mm ammunition and AHEAD medium calibre technology to programmable DM11 tank ammunition.

The Rheinmetall display will also include an unprotected HX77 with flatbed and an HX2 40M with Integrated Armour Cabin/IAC. A field ambulance version of the protected Survivor vehicle will likewise be showcased for the first time.

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

### Defence training services in waterborne demonstrations

(df) The SeaOwl Group will be showing their marine defence training services and presenting its capabilities in the waterborne demonstration area daily at the DSEI at the ExCel, London. Royal Victoria Dock SeaOwl is a NATO approved outsourcing company that designs and delivers training solutions to meet the defence require-

ments: Save front line operational fleet capacity, be cost effective by using third party training vessels and be compliant with the (NATO) Smart Defence.

The company supplies navies through service contracts, accredited personnel and customised vessels to perform training exercises with the various units of their fleet (surface ships, submarines, naval aviation or commandos). SeaOwl currently

provides such service to the French Navy, through the "Plastron" contract.

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



(Photo: SeaOwl)

### Weapon-integrated battle management system

(df) At the upcoming Defence & Security Equipment International (DSEi) 2015 in London Elbit Systems will present a wide array of innovative solutions and demonstrations of some of the Company's latest systems and products. One focus will be on C4I and Communications with the WinBMS (Weapon-Integrated Battle Management System) as one of the new solutions. WinB-

MS is a networked integrated battle management solution enhancing the connectivity and coordination of maneuvering forces at the tactical level, increasing its lethality and survivability.

Another highlight will be the new launch of the GRX 8000, a latest generation NATO Band IV, dual mode high capacity (HC) mode and frequency radio relay system. The Tadiran GRX-8000 is jamming resistant ECCM, enabling interference-free com-



(Photo: Elbit Systems)

munications across the battlefield. These radio relay systems are battle proven and in use with the Israel Defense Forces and other armed forces around the globe.

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

### FireStorm integrated targeting system

(df) Rockwell Collins will be formally introducing a new lightweight, wearable version of its proven FireStorm integrated targeting system, and showing for the first time in Europe its new TruNet networked communication solution at the DSEI.

FireStorm is a lightweight precision targeting system that offers both JTAC/FAC with sub mil accuracy, and digital connectivity to the wider battlespace. Rockwell Collins offers FireStorm as a complete, turnkey solution or as modular selected hardware and software components to enhance the current in-service systems. The standard FireStorm system comprises a fully integra-

ted package of hardware including: a laser range finder (LRF), tactical PC, Azimuth Augmentation Unit (AAU), StrikeHawk Tactical Video Downlink Receiver (VDR), Rosetta Joint Fires Digital Targeting Software, associated ancillaries, power management system and a tripod. All of FireStorm's individual components are environmentally protected and ruggedized against shock and impact damage.

In addition, the company's RealFires, high fidelity training solution for joint fires operators, and its proven range of Electronic Warfare and ELINT solutions, will be showcased at the Rockwell Collins exhibit.

"These technologies are aimed at addressing the changing dynamics of warfa-



(Photo: Rockwell Collins)

re, including the need for a cohesive, linked force," said Claude Alber, vice president and managing director, Europe, Middle East and Africa for Rockwell Collins. "We're focused on bringing a broad range of solutions to our customers in the region to give their forces the best advantages on the ground and in the air."

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

### Software defined tactical radio

(df) Rohde & Schwarz will showcase and highlight their integrated communications and intelligence systems portfolio at DSEI in London. The electronics company's presentations will include an innovation for naval communications: R&S NAVICS – a VoIP-based switching system with a unique security concept.

Also on display will be the R&S SDTR software defined tactical radio. This software defined tactical radio from Rohde & Schwarz provides secure and reliable voice and data communications for ground forces. Together with the new R&S HDR waveforms, it is fully IP-capable and delivers high data rate, jam-resistant and network enabled radiocommunications.

The R&S SDTR is based on a standardized software communications architecture (SCA), allowing both standardized and proprietary waveforms to be ported to the radio. This meets the need for interoperability with allied forces during missions. The new capability to form mobile ad hoc networks (MANET) enhances operational flexibility.

Another highlight Rohde & Schwarz will present at DSEI in London is the company's system for detecting, acquiring and analyzing radar signals (ELINT). The system was developed with a focus on handling difficult signal scenarios such as those with weak or LPI signals. The solution is geared toward ease of operation and comprehensive functionality, and its hard-



(Photo: Rohde &amp; Schwarz)

ware and software are tuned accordingly. A newly designed antenna system enables setups integrating acquisition, direction finding and communications antennas. The result is a compact, space-saving system that meets the requirements of modern signal scenarios, where overlaps between communications and radar intelligence applications are becoming increasingly common.

[www.rohde-schwarz.com](http://www.rohde-schwarz.com)

### Firearm novelties

(gwh) The portfolio of firearms presented by FN Herstal during DSEI covers the spectrum from hand-held weapons to vehicle-mounted weapon stations with heavy machine guns. With acquired new capabilities FN Herstal now offers complete technolo-

gically advanced solutions around small calibre firearms.

Presentations include the 5.56 or 7.62 FN SCAR assault rifle family, the rifle of choice for the world's most demanding combat units, including amphibious teams that need to fire immediately upon exiting water, and special forces, along with regular army and law enforcement officers. It can be fitted with a quickly interchangeable standard or CQC barrel, and an optional underbarrel or standalone 40mm LV grenade launcher.

Alongside the conventional firearms on display will be the FN e-NOVATION range. This integrates modern, cutting-ed-

ge technology, such as optoelectronic modules, into small firearms to provide enhanced combat capabilities and enhanced maintenance and logistics management.

Another weapon system in the range is FN Herstal's newly developed Sea deFNder®. This is a remote weapon station for maritime operations and can be viewed onboard the Belgian Navy's Castor coastal patrol vessel in the Royal Victoria Dock at DSEI. The Sea deFNder can be fitted with light, medium, and heavy payload, and accepts all FN machine guns from 5.56x45mm NATO cal upto .50 cal and 40mm AGL.

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



(Photo: FN Herstal)

### Launch of the latest headgear

(df) The Finnish provider of C3I and communications solutions for defence, security and professional public safety users, Savox Communications, will be exhibiting at the World Leading Defence and Security event, DSEI. At the show, Savox will launch the latest variants of its combat headgear system and its compact intercom C3I solution into the European market. The company will also be making a further major announcement at the event.

One of the highlights will be the THOR Combat Headgear System, which will be unveiled to a European audience for the



(Photo: Savox)

first time – not simply to look at, but also to try out for themselves. Already adopted for use by its first customer, the Finnish Defence Force, THOR is

an ideal component for the many future infantry soldier modernisation programmes underway globally. It has a major role to play on tomorrow's battlefields, whether in traditional combat scenarios, or in urban

counter-terrorism and security operations, homeland security and Special Forces' ops.

Also to be showcased at DSEI, the company's compact intercom system, IMP-CH. Visitors will be able to experience IMP-CH through a working simulation demonstrating its capabilities, daily, throughout the event. IMP-CH has been developed to meet the most demanding C3I requirements for applications aboard the widest B-vehicle inventory on land. At sea, IMP-CH is suited for use aboard small vessels, such as RIBs and larger ships, including corvettes, destroyers and aircraft carriers.

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

### UK's unmanned aerial system Watchkeeper

(df) Visitors of the Thales booth will be able to get informations about the new indigenous British UAS (unmanned aerial system), the Watchkeeper. This versatile UAS is highly transportable and has flexible deployment options. Fully network-enabled, the system will serve the UK Armed Forces for the next 30 years. The Watchkeeper Unmanned Aircraft System is built to the same exacting standards as manned aircraft, and is modular in design, so it can be adapted and upgraded for specific operational requirements.

Watchkeeper is built to CS23/STANAG 4671 airworthiness certification standards. It is operable in zero visibility, harsh weather conditions and extreme temperatures.

It has a unique de-icing system that detects and eradicates any build-up of ice, keeping it fully operational. The system has fully autonomous mission control and Autonomous Take off and Landing System (ATOLS), which minimises operator burden, and reduces manning and training costs. Its onboard autonomous emergency logic includes lost-link and glide to pre-programmed emergency landing sites.

Watchkeeper's modular design enables future growth potential to maintain pace with changing technology and threat changes. A number of packages are available that can be tailored to user requirements.

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



(Photo: Thales)

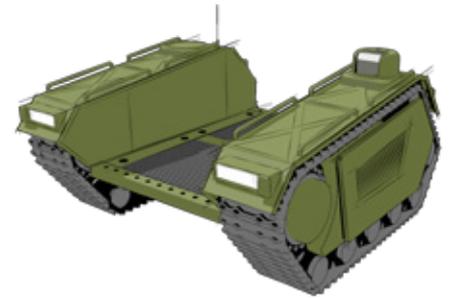
### Hybrid unmanned multi-mission tracked vehicle

(df) Milrem will be unveiling the prototype of the first ever hybrid unmanned multi-mission tracked vehicle at DSEI. Compared to other UGV platforms, the innovation behind Milrem's UGV lies in the track system where all the necessary components are placed inside the track system, leaving the middle platform free for different applications. This enables using the platform for

multi-mission superstructures.

Weighing only 750 kg with a payload of 500 kg, the UGV can be used as a remote weapon station, remote observation and sensor vehicle, transport platform for the wounded and many other functions that can pass through any terrain imaginable, be it snow, sand or swamp.

The vehicle will be developed to be operated remotely or autonomously, with a maximum speed of 50 km/h. The efficient



(Graphic: Milrem)

work period is 8 hours with fully charged batteries and topped up gas tank.

<http://milrem.ee>

### Remanufacturing of British attack helicopters

(df) Visitors of DSEI will also be able to hear about the latest developments of the Apache at the Boeing presentation.

The Government of the United Kingdom has requested the remanufacture of fifty (50) United Kingdom (UK) WAH-64 Mk 1 Attack Helicopters to AH-64E Apache Guardian Helicopters with one hundred and ten (110) T-700-GE-701D Engines (100 installed and 10 spares), the refurbishment of fifty-three (53) AN/ASQ-170 Modernized Target Acquisition and Designation Sights (M-TADS) (50 installed and 3 spares), the refurbishment of fifty-three (53) AN/AAR-11 Modernized Pilot Night Vision Sensors (PNVS) (50 installed and 3 spares), the refurbishment of fifty-two (52) AN/APG-78 Fire Control Radars (FCR) (50 installed and 2 spares) with fifty-five (55) Radar Electronics Units (Longbow Component) (50 installed and 5 spares), fifty-two (52) AN/APR-48B Modernized Radar Frequency Interferometers (50 installed and 2 spares), sixty (60) AAR-57(V) 3/5 Common Missile Warning Systems (CMWS) with 5th Sensor and Improved Countermeasure Dispenser (50 installed and 10 spares), one hundred and twenty (120) Embedded Global Positioning Systems (GPS) with Inertial Navigation (100 installed and 20 spares), and three hundred (300) Apache Aviator Integrated Helmets.

Also included are AN/AVR-2B Laser Detecting Sets, AN/APR-39D(V)2 Radar Signal Detecting Sets, Integrated Helmet and Display Sight Systems (IHDSS-21), Manned-Unmanned Teaming International (MUMT-I), KOR-24A Link 16 terminals, M206 infrared countermeasure flares, M211 and M212 Advanced Infrared Countermeasure Munitions (AIRCMM) flares, Identification Friend or Foe (IFF) transponders, ammunition, communication equipment, tools and test equipment, training devices, simulators, generators, transportation, wheeled vehicles, organizational equipment, spare and repair parts, support equipment, personnel training and training equipment, U.S. Government and contractor engineering, technical, and logistics support services, and other related elements of logistics support. The estimated cost is €2.7 billion.

There are no known offset agreements proposed in connection with this potential sale.

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



(Photo: U.S. DoD)

### UAV training simulator

(df) Zen Technologies will show their UAV Training Simulator during DSEI. Zen UAV Sim is a comprehensive system developed to train external pilots, internal pilots, mission commanders, observers/special payload operators and image interpreters. The UAV Sim offers basic, mission and operational handling training for individuals as well as teams using stand-alone or integrated mode.



(Photo: Zen Technologies)

Therefore the simulator trains the operators to handle fault or emergency con-

ditions, bad weather, poor visibility and special payloads like Ground Moving Target Indication (GMTI), Synthetic Aperture Radar (SAR), Maritime Patrol Radar (MPR), Inverse Synthetic Aperture Radar (ISAR), Communication Intelligence (COMINT) and Electronic Intelligence (ELINT).

All the features of different GCS/LRS/UAV flight and payload functions are of course included.

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

### SatCom for submarines

(gwh) Indra will supply ThyssenKrupp Marine Systems (TKMS) new satellite communications systems for submarines, a product that will also be shown during DSEI.

The company has already completed the design of systems to be installed in the submarines built in Germany. These are KU-band systems based on a three-axis stabilized platform, already developed by Indra for previous export contracts with this manufacturer.

The terminal provides fast and secure communications, notably amplifying the transmission's bandwidth. In addition to increasing the ships' data transmission capacity, the time during which antennas are exposed to radar detection by ships and aircraft is reduced.

Furthermore, these terminals are equipped with the capacity for using commercial and military communications satellites, thereby broadening the coverage of communications and lowering operating costs.

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



(Photo: Indra)

### Kontron StarVX HPEC VPX Computing Node

(gwh) Kontron in the framework of embedded computing technology (ECT) introduces its next-generation StarVX high

performance embedded computing (HPEC) system based on the company's VX3058 3U VPX single board computer (SBC). This will be the highest performance VPX computing node currently available.

Leveraging the breakthrough processor performance capabilities of the advanced 8-core version Intel Xeon D-1540 (Broadwell DE), the StarVX packs server-class silicon and highly ruggedized technologies in a compact 3U blade footprint, offering ten times greater performance than currently deployed ruggedized HPEC architectures.

Ruggedized for harsh environments, the

OpenVPX-based air and conduction cooled StarVX offers extended operating temperature operation and is shock, vibration, humidity and altitude tested. It is also optimized for reduced size, weight, power and cost (SWaP-C) requirements and offers central health and power management capabilities.

Kontron will be presenting StarVX at Defence and Security Equipment International exhibition (DSEI 2015), September 15 – 18, at the ExCeL London conference center, Kontron booth # S3-285.

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

(Photo: Kontron)



### Launch of CESMO HUB V6

(df) 3SDL will be formally launching CESMO HUB V6 at DSEI and be presenting live CESMO capability demonstrations. For some years now the UK MOD's Defence Science and Technology Labs (Dstl) have been using 3SDL to develop Collaborative Electronic Support Measures Operations

(CESMO) software. Run in parallel with the evolution of STANAG 4658, CESMO HUB is already used by EW development teams in many nations for both research and standards development.

CESMO HUB V6 will be the first operational version of the software package that allows NATO and its Allies to collaborate au-

tomatically in the sharing of vital EW data in near-real-time. Connecting easily with ground, air and maritime systems using existing networks, CESMO HUB provides a simple, quick and effective way of identifying and tracking radar and communications emitters.

[www.3sdl.com](http://www.3sdl.com)

### SBS-800 SharpEye Radar

(df) Kelvin Hughes will show their SBS-800 SharpEye series radars, with two of them just been delivered for the Ichthys LNG project located 220 km off the shore of Western Australia. Those two radars will be installed on both the Floating Production Storage and Offloading (FPSO) vessel and the Central Processing Facility (CPF).

The FPSO and CPF will be communicatively linked to each other through a dedicated fibre optic connection, the SBS 800 radars provide valuable sensor data for the SAAB V3000 VTS core.

The SBS-800 radars will be providing a vital combined security surface picture and operational field situational awareness and shares the same capabilities of contem-

porary Vessel Traffic Services (VTS). With its SharpEye technology, including X-Band frequency, pulse compression and Doppler processing, it is able to filter out sea and rain clutter without filtering out the targets of interest, leaving a clear and unambiguous radar picture even in the most severe conditions.

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

### Polycon Next Generation

(df) Axnes Aviation has chosen DSEI 2015 to introduce its Polycon Next Generation (PNG) wireless intercom extension system. After 3 years in development the new digital secure radio system will enable cordless intercom capability both in cabin and at a considerable range from the Aircraft.

The initial launch is for the SAR version to replace the existing Polycon. Further developments in 2015 2016 will include versions tailored for cordless EMS, cargo operations,



(Photo:Axnes)

military and VIP requirements. Mil Spec Encryption will also be available.

The Polycon wireless system has been developed in collaboration with UK RAF, Bristow and CHC Norway. The system provides rotary and fixed-wing operators with reliable communications and increased operation-

nal awareness by providing highly robust wireless communication between internal and external crew. Because of a very ruggedized design it is capable of doing this reliably in extremely harsh operating environments.

The system eliminates communication restrictions with outside crew. It provides seamless hands-free, continuous communications by extending the ICS to outside crew.

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

### AVT introduces a GVA AIO Monitor

(df) Advanced Vision Technology (AVT) will introduce their GVA AIO Monitor at the DSEI. The VDS768P16 provides the ability to tile up to 16 analogue camera inputs. This GVA monitor provides a familiar interface required for today's defence, land, sea and air vehicles with it's multiple I/O and the features necessary to control the dedi-

cated functions of TIC, Gun sights and so. Many military applications simply require a ruggedised PC in a fixed installation. Their AIO (All In One) display monitor features an Atom GHz processor capable of running standard PC applications including touch based software and customer middleware applications. The Def Stan 00-82 covers the use of streaming digital video for distribu-

tion around modern day military vehicles. They will be demonstrating the use of this technology for the acquisition of video, the processing of and re-distribution to their GVA compatible display monitors, Def Stan 23-09. These are a multi-standard solution and have the capability to support the GigE Vision standard.

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

### Electric hub-drive for DARPA

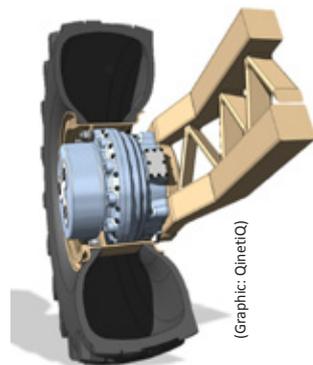
(df) Visitors of DSEI might learn about the electric hub-drive, that QinetiQ is to develop to improve survivability and mobility of future military ground vehicles for the US Defense Advanced Research Projects Agency (DARPA). The contract, worth €1.3 million with an option for a further €2.4 million, is part of DARPA's Ground X-Vehicle Technologies (GXV-T) programme. Under this programme, participants will

investigate technologies that could help to significantly improve capability in the next generation of vehicles.

QinetiQ's hub-drive seeks to improve mobility through enhanced power, torque, integral braking and high efficiency, in a unit that can be contained within a 20" wheel rim. It aims to increase survivability by removing drive shafts and gearboxes, which can become lethal in the event of an IED detonation beneath the vehicle. The ab-

sence of these components could also reduce weight and open up future design possibilities, such as fully independent suspension with increased travel.

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



(Graphic: QinetiQ)

### Launch of two new braking systems

(df) Caparo Vehicle Technologies will be releasing two brand new braking systems,

Heavy Duty and Warrior, at the DSEI. These high performance upgrade kits have been specifically engineered to provide superior braking to off-road and armoured vehicles in the most demanding of conditions.

The Heavy Duty and Warrior upgrade kits provide massive stopping power in specialist applications such as personal protection, high performance, fast pursuit and other vehicles. Both have been 100% engineered and manufactured in the United Kingdom by the company behind the Land

Rover Defender original equipment calipers.

Verified for high GVW platforms, these upgrades offer high stiffness for improved pedal feel, and braking effort while also being quality assured by the rigorous standards applied to the automotive industry. The Heavy Duty Upgrade Kit has been created for vehicles up to 4 t, while the Warrior Upgrade Kit can accommodate far heavier platforms and is currently verified up to 6 t.

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



(Photo: Caparo)

## Connected Intelligence

Today's modern battlefield is a highly complex, dynamic, confusing and fast paced environment. Effective utilisation of intelligence, surveillance and reconnaissance (ISR) data is therefore critical to modern military operations. The ability to disseminate intelligence assessments in a timely and efficient manner therefore has a direct impact on asset utilisation which improves decision making leading to reduced operational risk thus delivering mission success. Traditional intelligence collection and exploitation has tended to be broadly stovepiped into its single intelligence discipline domains of imagery intelligence (IMINT), signals intelligence (SIGINT) and human intelligence (HUMINT). New technology and changes in cultural behaviours have led to other intelligence domains such as open source intelligence (OSINT) growing in importance.

Intelligence assessments must therefore take advantage of the unique insights that these individual disciplines can provide in the form of all-source intelligence products where all sources of information are brought together to provide a more considered and meaningful analytical assessment.

Increased access to information by non-military organisations including press agencies and subversive groups has further reduced the timelines available to commanders to make decisions. Developments and actions on the battlefield may no longer be confined to the operational area, and so commanders have to react increasingly quickly to avoid third parties increasing the complexity of the environment through their actions and commentary.

All of these issues mean that the modern intelligence community in support of military commanders must adapt and take advantage of modern technology through enhanced collaboration amongst intelligence organisations to bring enhanced analyst efficiency which maximises intelli-

gence effect leading to mission success.

To undertake all-source analysis, access to multiple sources of intelligence must be provided within a shared and collaborative environment. Having access to fellow intelligence experts as part of a broader team, possibly not even co-located, provides enhanced efficiency and improved analytical output. Typical sources for consideration in an all-source context are aspects of all the traditional disciplines of IMINT, SIGINT, HUMINT and an ever growing reliance on OSINT.

To achieve mission success through effective utilisation of intelligence collection and exploitation the first key factor is the need to establish a computer network between all users that need access to the information to assist in their decision making. Once a network has been established data management is another critical factor. The ability to directly ingest data from a variety of sources including imaging sensors such as UTC's DB-110 imagery reconnaissance pod, full motion video sensors, SIGINT, HUMINT and OSINT is vital.

Once the data has been collected and stored on the network in a tool such as UTC's SCi-IRL, the ability to discover what information is available across the network gives analysts enhanced data awareness thus allowing them to improve their ability to access data to formulate their intelligence assessments.

The pace of development in technology is always increasing and many analysis tools are almost becoming commodity items, either in terms of their development where the latest functionality can be added with "app" like ease, or, the number and selection of these tools is made to meet the current operational need. The days where a single tool was used and would remain in use, almost unchanged for years, is no longer appropriate. The down side to this new reality is that all the new generation of systems must be flexible and interoperable

in terms of information exchange. The reality of commercial technology needs to be embraced but kept secure.

UTC's SCi Toolset provides a wealth of capabilities that allow analysts to excerpt maximum efficiency in their ability to store, access, exploit and disseminate intelligence information and assessments to maximise intelligence effect to reduce operation risk leading to mission success.

The Toolset uses proven technologies based on NATO and open standards underpinning its operation ensuring that interoperability is achieved. Ease of operation and quick and efficient data sharing are at the heart of the system. In addition, the expansion to include other source capabilities including electronic warfare and open source data handling can be incorporated into the connected intelligence enterprise based upon user need.

Sharing of the results of the analytical process is also at the heart of our approach and this can be achieved within a secure, effective and dynamic enterprise that allows commanders to be informed quickly, efficiently and in a timely manner thus facilitating mission success.

The current reality is that intelligence analysts are faced with disparate and unconnected intelligence.

There is therefore a need to recognise that this is the reality and that the analyst needs the tools to be able to discover what exists but avoiding data deluge at the same time. The analyst must also be able to share intelligence within a secure and controlled environment whilst countering hostile threats.

By enhancing multi-source analysis efficiency, intelligence analysts are therefore able to deliver improved intelligence effect thus leading to mission success.

**Author:** Colin Moore, Business Development Manager ISR and Space Systems at UTC Aerospace Systems.

<http://utcaerospacesystems.com>

## DSEI to showcase land, sea and air capabilities

The defence of sovereign rights is a major challenge for a significant number of nations as regional tensions flare up and new threats appear. The need for military and security forces around the world to procure the platforms, systems and equipment that meet operational and budgetary imperatives is highlighted by the continued growth of Defence & Security Equipment International (DSEI), which takes place at ExCeL London from September 15-18, 2015.

Reflecting DSEI's status as a premier forum for international co-operation and thought leadership, senior military commanders will be sharing their views on how doctrine and capabilities must be shaped to meet the demands of an uncertain future. The British Army will have a prominent presence at the show.

LtGen Mark Poffley, Commander Force Development and Capability of the British Forces, said: "Recent events have highlighted the need for an integrated and persistent security response across a wide spectrum of operations. The British Army is reconfiguring to meet the challenges of the contemporary security environment. An important part of this adjustment is establishing a close relationship with its industrial partners, seeking out innovative and relevant solutions as part of the Defence Growth Partnership and exploiting mutually beneficial agendas to defeat those who threaten our security."

The land systems display at DSEI 2015 will be of record size, with some 700 prime contractors and small and medium-sized enterprises representing the majority of nations with defence and security industries. Exhibiting companies, who will be sited in the expanded Land Zone and around the exhibition halls, include BAE Systems, Denel, General Dynamics Land Systems, Iveco, Jankel, Lockheed Martin, Nexter, Oshkosh, Patria, Raytheon, Streit and Supacat.

DSEI 2015 will also feature its strongest aerospace offering, with exhibitors including Airbus Defence and Space, Boeing, BAE Systems, General Dynamics, L3, MBDA, Rafael, Rolls-Royce, SAAB and Thales. Platforms expected to be displayed include Apache, Chinook, Merlin, Sea King and Wildcat helicopters. Unmanned systems will also be prominent, with a broad spectrum of exhibitors including: Boeing Insitu, Northrop Grumman – who will feature the Global Hawk – iRobot and QinetiQ.

The ability to host visiting warships adjacent to the exhibition halls is a major contributor to DSEI's unique role as an integrated showcase of defence and security capabilities. DSEI 2013 played host to an impressive flotilla of visiting warships and waterborne demonstrations, as well as showcasing a wide spectrum of technology and equipment providers. A similar display of maritime power and innovation is being developed for DSEI 2015.



Security has become firmly established as the fourth pillar of DSEI. The 2015 event will see focus on critical areas of security, such as biometrics, cyber warfare, CBRN and counter terrorism.

There will also be a Security and Special Forces zone with briefings by leading experts and capability demonstrations. Major suppliers who will be exhibiting include BAE Systems Applied Intelligence, CISCO, Cobham, Fujitsu, Lockheed Martin and Smiths Detection.

Rear Admiral Simon Williams, Chairman of DSEI organisers, Clarion Defence and Security, said: "The threats to world order today are diverse and range from high tech cyber-attack to that posed by the 'lone wolf'. There has never been a greater need for an integrated approach to the acquisition and deployment of defence and security assets in the land, air and maritime environments - and to the rationale that guides them. DSEI 2015 will provide a platform that meets all these imperatives."

[www.dsei.co.uk](http://www.dsei.co.uk)

**DSEI**  
15 - 18 September 2015  
The World Leading  
Defence & Security Event  
ExCeL, London

# WELCOME TO DSEI 2015

• LAND + NAVAL + AIR + SECURITY + UNMANNED + MEDICAL