

# MILITARY SYSTEMS

E T E C H N O L O G Y

## COBHAM ANTENNA SYSTEMS MICROWAVE ANTENNAS

Directional, Sector, Omni-Directional  
and Ultra Wideband Antennas

## DIGITAL RF LIMITED

Counter Terrorist and Surveillance Systems

## IVECO DEFENCE VEHICLES

International leader in Truck Manufacture

## MICROFLOWN AVISA

Development and manufacture  
of Acoustic Vector Sensors

PLUS...

BREAKING NEWS FROM...

CUMMINS  
LUTRA ASSOCIATES LTD  
TRELLEH  
FAUN TRACKWAY  
SCOTT SAFETY

Image Courtesy of Octagon Defence Systems

**OUR FOUNDATION IS OUR TECHNOLOGIES  
OUR MISSION IS EXPANDING YOUR CAPABILITIES**



Scott Safety, formerly Scott Health & Safety are world leaders in the design and development of Respiratory Protection Equipment (RPE). We have a detailed understanding of the physiological and psychological burden RPE can place on users. That is why we test in the field. And we apply what we learn there - as well as emerging research and technologies to every design to ensure capability, functionality and comfort. Irrespective of whether your requirement is for CBRN protection, Breathing Apparatus for EOD, USAR, damage control, fire-fighting or for specialist applications Scott can meet your requirements - comfortably.



## Welcome to this edition of the Military Systems & Technology newsletter.

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

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Cobham Antenna Systems  
Microwave Antennas

# DIRECTIONAL, SECTOR, OMNI-DIRECTIONAL AND ULTRA WIDEBAND ANTENNAS



Air, Ground Control Centres, Link16, Radar, COFDM, Video Surveillance, Body Worn Systems, Electronic Warfare Countermeasures, Outside Broadcast and Tactical Communications.  
The company is based at a single location in England.

## Antenna Development Projects

Development projects are undertaken on behalf of customers for specific programmes. Advanced modeling tools are used to enhance accuracy, with prototypes tested at the company's on-site anechoic test chamber. Radiation pattern data ensures that antennas meet their quoted specification and radiation pattern envelopes. Antennas are tested throughout design and manufacture.

Cobham Antenna Systems, Microwave Antennas are specialists in the design and manufacture of microwave antennas for defence, security and satellite communications.

The company's antennas are used worldwide in applications include Robotics and Vehicles, UAVs, Ground-to-



to 25GHz, with over 1500 existing designs available. Antenna types include ultra wideband, planar spiral, directional, sector and multi sector, blade-style omni or sector antennas, collinear omni-directional antennas, multi-octave bicones, hemi omnis and multi-stacked omnis.

## Existing Catalogue and Variants

Antenna frequencies range from 100MHz Most antennas have a variety of options

such as single or multi-band, colour, connector, electrical tilt and null-fill or side lobe patterns. Existing antenna designs can be customized.

## High Gain Directional and Omni Antennas for Defense Including Data Receive Stations and Man-Pack

Directional flat panels with fixed phased-array and wide band patch technology provide a slim, low profile antenna with a



discreet appearance. These antennas are rugged and sealed to withstand harsh weather conditions. Gains range from 7dBi to 32dBi. Sector beamwidth ranges from 5° to 120°. Polarisation may be circular, linear or dual. Omni antenna with up to 10dBi gain and stable azimuth patterns are used as central stations. Multi Sector antennas can be deployed for higher gain and longer range.

Robust ultra wideband omni and directional antennas are being used for ground-based and airborne systems for Counter IED and communications intercept. They are also used for multi-band cellular applications such as communication in tunnels and Distributed Antenna Systems (DAS), EW target drones and spectrum monitoring.

## Ultra Wideband Antennas for Defence and Countermeasures

## Omni Antennas for S-band, UAV, Link16, or Vehicle Mounted

Collinear omni antennas have up to 10% bandwidth and provide up to 11dBi gain, whilst multi-octave bicones provide 2dBi gain.

Circular polarisation, excellent azimuth ripple and customised elevation beam patterns, all combined to provide an accurate, reliable antenna for the most demanding of communication systems.



# COUNTER TERRORIST AND SURVEILLANCE SYSTEMS

Digital RF offers complete counter terrorist and surveillance systems, bespoke to a client's need including the latest technology, training and field support.

Its staff and supporting engineers have worked together for some 40 years in designing RF systems.

Digital RF is a UK Company which Designs and Manufactures all its own products in the UK including; Software, Digital FPGA processing, Modulation and Frequency converters, Power Amplifiers, Detectors, Antennas and more. Maintaining full control of design and manufacture enables



Digital RF to fully support its customers for the entire product range.

## The Company

Digital RF was established in 2003 to design and build jammers to supply into the security market with the growing use of IEDs.

The company has continued to grow, supplying into conflict areas such as Iraq and Pakistan, as well as many other countries across the globe.

Digital RF maintain a policy of keeping all key design skills within the company. The company staff and supporting staff comprise of RF design engineers, software engineers, mechanical designer, system engineers, project manager, test and assembly staff.

## The Products

### Wide-band Jammers:

#### Blackshadow

In the Company's support of counter

terrorist systems it manufactures a range of high power HF, VHF, UHF and Microwave jammers which have been designed by the company.

These include:

### VIP Protection Jammers

The Black Shadow VIP Protection Jamming system can be fitted to most vehicles for a mobile convoy protection or placed in an area of Threat or in a building.

Each Jamming Module within Black Shadow radiates multiple programmable jamming carriers that can instantaneously jam selected frequency bands.

### Portable Briefcase or Backpack Jammers

These specialist jammers incorporate the latest jamming technology in a compact integrated system is able to be equipped with a wide range of frequency jamming modules. In a compact system they contain Jammer modules, antennas, battery, power supply and optional remote control.



Both these are ideally deployed to protect VIP's, Military/Security staff or EOD teams from RCIEDs.

There are currently over 300 Black Shadow Jammers sold into Military, NATO and Civil Defence organisation over the world.

## GSM Detect, Block and Counter Measures

In today's society having tools to detector, jam and monitor mobile phone communications are essential in the prevention of terrorism. Digital RF have developed a range of products to equip security personnel with the latest technology in Mobile phone counter measures.

### Cell-Block

Preventing the use of mobile phones and communications devices in Prisons and Secure Facilities is an important part of security and crime prevention.

Digital RFs jamming technology has been deployed to detect, jam and monitor mobile phone activity in these institutions under the name Cell-block.



Utilising the Blackshadow technology a comprehensive system of jamming, frequency monitoring, ethernet control, detector activity logging and GSM network status is provided to the user.

### Network Guard

Digital RF's Cell-Monitor provides rapid notification of any rogue BTS attempting to covertly listen to mobile phones. Cell-Monitor is the essential tool to independently monitor the BTS activity around sensitive buildings / offices. By continuously scanning all available networks rogue BTS activity can be seen instantly and the position of the rogue BTS source located on a map.

### Cell-Interception

Taking both RF and Digital technology to the next level Digital RF have developed an IMSI / IMEI grabber to locate and identify target phones and enable access.

### Cell-Seeker Network Mapping System

Cell-seeker is the essential tool to independently monitor or map multiple mobile networks.

By continuously scanning all available networks and recording the GPS position an RF 'finger print' of the environment is recorded.

### Chameleon

Chameleon is a digital phone system which allows designated users to use their own mobile phone to call each other and make & receive external calls while preventing all other people in the coverage area of the jammer.

## GSM Tracking Devices

### PV900 Tracker

The Digital RF has developed a range of small battery powered modules which uses the latest GSM technology to provide a location typically to an accuracy of within 100m.

Smaller than a mobile phone the PV900 can be placed discreetly in a vehicle, in a bag or on a person. PV900 will report its position either on a timed basis, or when requested from the control centre.

The precise location is then calculated from the cell information reported by the



PV900 module. Using highly integrated efficient controllers PV900 can report for up to 300 days on one charge of the battery.

### Other Activities:

### MDS – Magnetic Detection System

MDS is a comprehensive automatic detection system for entrance security control.

Comprising of a speed ramp and barrier fitted at the entrance of a building or car park it will detect any magnetic material, such as a magnetic bomb / RCIED or Tracking device attached to the vehicle chassis.

While the vehicle travels over the system the vehicle is automatically scanned and the barrier entrance synchronized to allow or deny entry.

### Microwave Links

The company is also active in promoting the use of fixed and mobile COFDM digital radio transmission systems for transmission of video from inside to outside a building or from a street threat to a mobile control centre.





# INTERNATIONAL LEADER IN TRUCK MANUFACTURE

An International leader in truck manufacture, Iveco is one of the principal subsidiaries of the Fiat Group. The company designs, manufactures, and markets a broad range of light, medium and heavy on and off road commercial vehicles, including trucks, buses, and specialist vehicles for applications such as fire fighting, heavy duty off road use, defence and civil protection.

## Vehicle Engineering is deep in our DNA

Iveco Defence Vehicles has established an outstanding reputation for the practical application of innovative automotive and protection solutions. The result is a full range of logistic, multirole, protected and armoured vehicles which together enables the military user to meet the most exacting of operational demands.

Modular Designs Provide Outstanding Mobility, Protection and Payload

Iveco DV's range of Multirole Vehicles, Tactical and Logistic Trucks, and Armoured Fighting Vehicles covers the full spectrum

of on- and off-road military requirements and represents a well thought through, comprehensive and effective response to the needs of the military customer.

Iveco DV's engineers have exploited the modular approach adopted in our commercial range to provide direct benefits to the military user. This philosophy allows the solution to be tuned as closely as possible to the identified needs of the user without time-consuming re-engineering.

The whole product range is subjected to a continuous development process under which evolving needs are fed back to our engineers, who, in turn, develop a steady stream of enhancements in terms of payload, mobility and protection.

## SUPERAV – A New Generation of Amphibious Armoured Vehicles

Iveco has developed the 25-tonnes SUPERAV 8x8 Medium Armoured Vehicles family specifically to undertake amphibious operations. All variants share

the same innovative multi-layered hull design. This approach combines advanced materials with leading edge technologies, and provides exceptional levels of vehicle and crew survivability without compromising amphibious performance. Thanks to its modularity and the ease with which it can be reconfigured, the SUPERAV 8x8 can be air-transportable, is capable of maritime operation beyond Sea State 3, and can mount weapons up to 30mm calibre.

## The Centauro 8x8 Armoured Vehicle Family

The 26 - 30 tonnes combat proven Centauro family of wheeled 8x8 armoured vehicles is designed for land operation and can be adapted to meet a wide variety of roles. Many variants are already available, and, of these, the Centauro 120mm MGS 'tank-on-wheels' is today's fastest and lightest vehicle equipped with a 120mm gun – and the only wheeled one existing. This vehicle is also available mounting a 105mm gun.

The Centauro VBM Armoured Personnel

Carrier (APC) and Armoured Infantry Fighting Vehicle (AIFV) feature a hull specifically designed to maximise crew survivability. With an inner volume of about 11m<sup>3</sup>, the AIFV is equipped with a 25/30mm two-man turret and can accommodate a driver and 8 fully equipped dismounts, while the APC offers 14 m<sup>3</sup> and can carry up to 12 dismounts.

The Centauro family is offered through CIO Iveco – Oto Melara, a joint venture with Oto Melara of Italy who are responsible for providing the turret systems.

## Multirole and Mission-Adaptable Vehicles

Iveco has focused on the development of multirole platforms which are capable of fulfilling a range of applications. Characterised by their exceptional mobility, agility and terrain accessibility, and their high levels of protection against both ballistic and mine attack, this range of vehicles is based on two platforms – the Light Multirole Vehicle (LMV) and the Medium Protected Vehicle (MPV). With a wide variety of configurations already developed, they are equally effective on peacekeeping, counter insurgency and war fighting missions.

## Light Multirole Military Vehicle

The LMV is a purpose built military vehicle which nonetheless benefits from the use of many commercial components. Rugged and highly mobile, it is based on a modular design which enables the development of a wide range of variants with differing wheelbases, roofs, crew cell configurations and protection levels. This modularity accommodates many configurations, most recently, a special forces variant. The LMV



is rapidly becoming the light protected vehicle of choice in Europe, with sales to nine armies to date.

## Medium Protected Vehicle (MPV)

The multirole approach is also seen in the MPV which Iveco has developed in partnership with KMW. To meet the demand for heavily protected utility and multipurpose vehicles able to provide high levels of ballistic, mine and IED protection, the new 4 x 4 MPV family occupies the mission space between the LMV and the Centauro 8 x 8 AFV family.

In order to produce a reliable, rugged, well protected vehicle with a class leading payload, Iveco took the decision to exploit its highly successful Trakker chassis. Innovative well informed engineering coupled with a class leading commercial chassis has delivered a well protected, adaptable vehicle with high mobility at a cost far below that of bespoke military vehicles.

## A Logistic Capability for both Protected and Unprotected Applications

One of the characteristics of current operations is that there is no front line. In recognition of this, Iveco Defence Vehicles has developed a class leading protected cab which can be fitted to Iveco's heavy duty 6x6 and 8x8 Trakker chassis. The result is a robust, highly mobile but cost effective logistic vehicle which can operate even in high threat areas.

The modular design of the Trakker range

provides a choice of a wide range of wheelbases and drive trains, all of which are supportable through the Iveco dealer network. This enables Iveco to provide a highly versatile, exceptionally well protected logistic fleet to meet a wide range of demanding roles.

## Purpose Designed Military Trucks for Specific Operational Requirements

IVECO Defence Vehicles also offers a full range of battle proven, powerful and capable 4x4, 6x6 and 8x8 purpose designed military logistic vehicles to provide tactical support to any military operation in the most hostile environmental conditions. The vehicles can be fitted with a cab which allows them to be airtransportable in a C130.

The whole range can be equipped with a new generation of add on armour kit, achieving a unique combination of performance, payload and protection to support any military operation in the most hostile environmental conditions.



# DEVELOPMENT AND MANUFACTURE OF ACOUSTIC VECTOR SENSORS



Microflown AVISA is a Dutch SME which develops and manufactures Acoustic Vector Sensors.

The core capability is the Acoustic localisation of various sound sources such as Rocket, Artillery and Mortars (RAM) and Small Arms Fire (SAF) positions.

The smart series of Acoustic Multi Mission Sensors (AMMS) are ideal for e.g. compound protection, border protection as well for individual soldier use. Please consult our website for more information: [www.microflown-avisa.com](http://www.microflown-avisa.com)

## Acoustic Multi Mission Sensor – AMMS

The ground based Acoustic Multi Mission Sensor (AMMS) utilizes the worldwide unique Acoustic Vector Sensor technology allowing it to detect, classify and localise the full spectrum of acoustic battlefield signatures such as mortars,

RPGs and small arms fire. The powerful signal processor embedded in AMMS is capable of analysing and localizing the acoustic signatures and reports to the Battlefield Management System (BMS). The ground sensor's Digital Data Port interfaces with the customer specific hardware and BMS, supporting a variety of digital standards including the DAMA protocol. It also enables the user to make use of a Digital Data Port Adapter (DDPA) such as a digital antenna. The dedicated Sensor Management System (SMS) allows the full utilisation of a multi AMMS network.





system, so it cannot be located and jammed like radar.

Detection of an event by one of the ground sensors results in information being sent to the command centre, typically time stamp, classification of sound, and bearing and elevation to the source. The bulk of the processing is done at each ground sensor individually, so there are only very small packets of text data to transmit to the command centre. This data, from multiple sensors, is then collated and processed centrally, and the calculated locations are presented both in tabular form as well as in a graphical format, e.g. on a map or satellite image of the area. The points of impacts (POI) and points of origin (POO) are presented as grid coordinates. All information can be exported or printed out in hard copy for further reporting and de-briefing. With the command centre software, the ground sensors can be remotely accessed, allowing for easy and convenient configuration.

## RAM-LOC - RAM Localisation System

RAM-LOC is designed to be used as part of a C-RAM (Counter Rocket, Artillery and Mortar) system, locating enemy firing positions over a wide area.

Each RAM-LOC system typically comprises multiple remote operated ground sensors, a wireless communication system, and a command centre processor.

The sensors are mobile, fast deployable, and modular, and therefore can be configured to work in all areas and environments. Typical use would be for the protection of fixed perimeters such as border lines and forward operating bases (FOBs), or for temporary locations such as rest over nights (RONs).

RAM-LOC is also suitable for supporting weapon locating radar (WLR), reconfirming targets (as per rules of engagement) and reducing false alarms which can bring base operations to a halt for unnecessary periods of time.

As RAM-LOC works best at close range and radar is more suited for long range detection, the systems complement each other well. It also acts as an unjammable close range backup during radar affecting weather, for where line of sight is obscured by terrain dips or hills, and for low trajectory weapons where projectiles stay close to the ground and out of sight of radar. Crucially, RAM-LOC is a passive



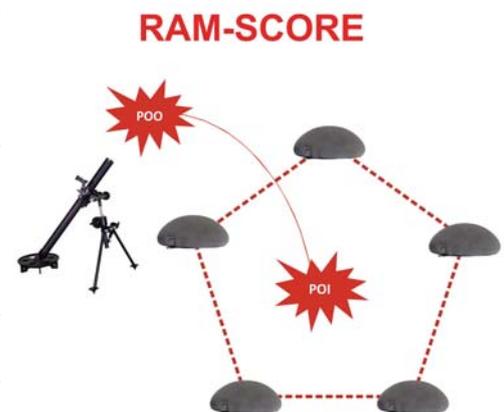
## RAM-SCORE - Training Range System

RAM-SCORE is a passive acoustic localisation system for rocket, artillery and mortar (RAM) training and proving ranges, providing fast and accurate location reports of points of impact (POI) and points of origin (POO) on the range. The system has been developed in cooperation with the Royal Netherlands Army to support shooting exercises and to ensure safety on training ranges.

Each RAM-SCORE system comprises of at least four remotely operated ground sensor posts (no upper limit) and a main station command post. Each ground sensor contains an Acoustic Vector Sensor (AVS) which has the worldwide unique capability to directly measure the actual direction of sound sources acoustically.

Furthermore, the unique Acoustic Vector Sensor technology allows the system to be smaller and lighter with a reduced power consumption compared to sound pressure microphone based solutions. Based on its compact size, the RAM-SCORE system is fast and easily deployable for both

permanent and temporary use. The supplied battery allows one ground sensor post to operate for one month. Depending on the need smaller and lighter batteries can be offered. Alternative powering solutions such as solar panels are also available.



**Target Practicing**

# Platoon Leader experiences the Reliability and Power of Cummins



1LT Riley Emter was a Tank and Cavalry Scout Platoon Leader in Iraq and he is currently a Reconnaissance Platoon Leader in 3d Squadron, 3d Cavalry Regiment out of Fort Hood, Texas, USA. Whist Riley was deployed to the southern province of Najaf, Iraq in 2010–2011 and he used many vehicles equipped with Cummins Engines and his base was powered by Cummins Generators.

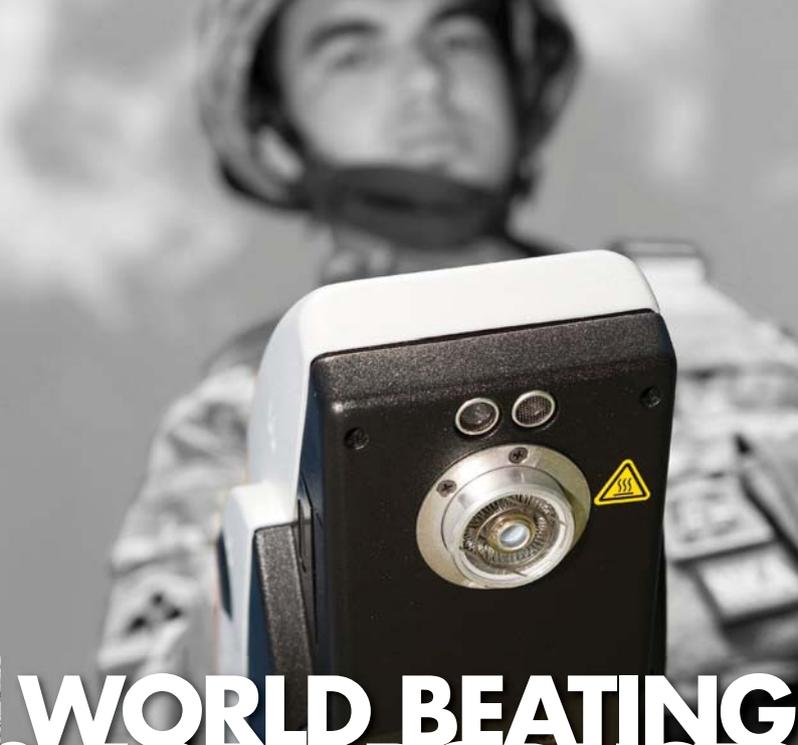
## Cummins Generators and Engines

1LT Riley recently contacted Cummins to share his experience stating 'The reliability of these engines and performance was amazing. They were enjoyed by the men of Maddog Company 3/3 ACR. My Commander, CPT David Griffith, and myself each bought a Dodge 2500 with a Cummins Engine upon redeployment back from Iraq. Thank you for providing such reliable engines and making high quality, long lasting products.'

Cummins Generators ran electricity for all 300 people on Riley's base; they have to be consistently reliable to provide electricity and most importantly air conditioning for all 300 soldiers' rooms in the heat of Iraq. Between the high temperatures and dust there are no better generators to deal with the elements of Iraq. In addition to the Cummins Generators a couple of Riley's vehicles were powered by a Cummins Engine. The M3A3 Bradley Fighting Vehicle and the RG-33 BAE Caiman Tactical Vehicle both have Cummins Engines in them. The reliability of these engines allows users to be able to accomplish missions and ensures the ability to return all the Soldiers back to base every



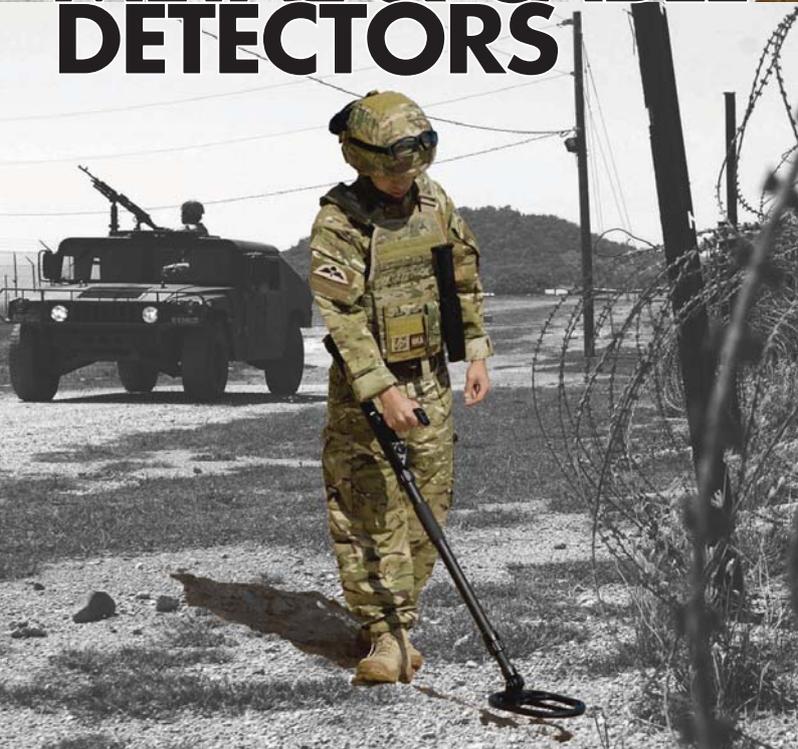
day. Riley tells us, 'There was never an occasion where a vehicle powered by a Cummins Engine had a problem. Several of the vehicles we used that didn't have a Cummins had problems dealing with the heat of Iraq. It was great knowing we could rely on the Cummins product put in our tactical vehicles.'



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# Lutra Associates Ltd to Cover the A-Z Of Defence and Security

New Consultancy Group based around experienced Defence and Security Professionals starts operations to provide advice and assistance across the defence and security arena

Lutra Associates Limited A new defence and security consultancy has started operations. Based on a partnership of experienced defence and security professionals with skill sets ranging from analysis to zoonotic diseases the consultancy brings together a number of like-minded professionals who believe they can help all sides of the defence and security continuum achieve better results. The team are all highly experienced and used to providing and delivering quality results and advice on almost any subject in defence and security.

The group will operate on a virtual basis to keep overheads to a minimum and will form appropriate teams to provide companies and governments of all sizes with the very best advice and services to enable them to provide the most cost effective services to their own customers, clients and citizens. One of the key distinguishing features of Lutra Associates is its cross discipline capabilities and experience in delivering high quality advice based on unrivalled experience and knowledge.

The group's CEO and one of its senior associates Tim Otter said "I have wanted to do something like this for some years. On a number of occasions, too frequently really, during my career in defence and security I needed broad based advice which is frequently not available in many of today's spread sheet driven defence and security companies big or small. When I turned to the industry to provide it I was faced with 'the too big or too small' syndrome: too big and too expensive or too small and too narrow. Crucially my friends and colleagues at the

top of the defence and security arena believe the same need exists.

"By bringing together people I know, trust and like who themselves know other people with similar capability we have formed a partnership that can make a difference to the outcome of any problem whether it's experience, technical or resource related. Our worldwide experience and capabilities will enable us to help all parties in dealing with the nuts and bolts of doing business in the defence and security arena. If you like, we are the A-Z of defence and security business.

"A key service will be to help small UK companies export by providing resource, expertise and proven experience but equally we can help overseas companies approach the UK market and our ability to solve difficult engineering problems is but one example of our technical expertise. If you have a problem in the defence and security A-Z we have someone who can help you find the answer. We are here to help," said Otter.

## About Lutra Associates Limited

A group of associates with skills in many disciplines and with knowledge of and contacts within most if not all areas of defence and security Lutra Associates provide skills, resources and capability across the A-Z of defence. The people involved have a depth of knowledge and range of experience and contacts that allow them to give practical advice, carry out studies, assist with business development and marketing and make life simpler for the hard pressed defence and security official, executive or project manager.

Capable of operating at any level in a company or corporation from board level to project manager the team is able to help small companies grow and larger companies

have a human face. With an accumulation of experience and skill that runs to several decades if not centuries the team can select the right person to help deal with the problems that companies and governments face.

With a considerable degree of experience in the export and international field the team is particularly well suited to help small and medium companies that might be less experienced or lacking in skills for dealing with the international market and working across borders. This can range from export and import activity to export control and licensing to international facilitation.

The team is equally skilled in providing and assisting in government relations and facilitating government to industry relations and assisting with setting up events that allow governments to explain their needs and companies to showcase their capability. Coupled with an experienced marketing, press, media and communications team Lutra Associates can assist in almost any aspect of government/industry relationships.

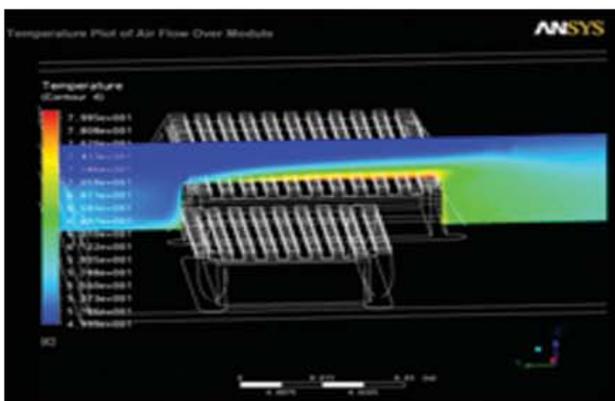
Operating as a virtual organisation Lutra keeps its costs low but provides top quality professionals to help with solving the most difficulty problems. Whether the requirement is technical or human Lutra exists to provide help and solutions to the hard pressed government officials and industry directors and managers in defence and security.



# HERMETIC & NEAR HERMETIC POWER MODULES & INTELLIGENT SUBSYSTEMS

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# U.S. Patent awarded for Trelchem® VPS Flash garment material

Ansell Protective Solutions has been awarded U.S. Patent for the Trelchem VPS Flash garment material, used for manufacturing top of the line Level A gastight chemical protective suits.

Recently the Trelchem EVO material was awarded a U.S. Patent and now also the Trelchem VPS Flash material. The Trelchem VPS Flash material combines a flame retardant aramid base fabric with abrasion resistant rubber and a multilayer chemical barrier film. All together it provides > 8 hours permeation time against a wide variety of hazardous chemicals along with flash fire protection and protection against liquefied gases, radioactive particles and biohazards.

Chemical protective suits made of the Trelchem VPS Flash material are certified to the toughest and most stringent standards in the world within the segment of Chemical Protective Clothing (CPC), such as NFPA 1991 (including the optional Flash Fire and Liquefied gas protection requirements), EN 943-2/ET, EN 943-1, EN 1073-2 (Protection against radioactive particles) and EN 14126 (Protection against Infective agents).



The Trelchem product range is based on technology experience. To be awarded two highly innovative rubber based materials U.S. Patents confirms the high standards and resulting from more than 100 years of rubber innovation level of the Trelchem materials.

## Rugged & Reliable Maritime Communications

The IMP - Ethernet Based Mobile Communications System



The IMP System is a voice solution that provides clear and reliable communications in the harshest of marine environments. With an Ethernet based backbone, IMP caters for all your current and future communications needs.

- Simple and Intuitive to use, voice operated or PTT operation
- Easily scalable for multi user & multi radio configurations
- Ingress Protection
- Options for data and wireless access
- Cost effective, easy to install and maintain



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# FAUN TRACKWAY USA Launches Light Weight Vehicle Recovery Mats

FAUN TRACKWAY USA INC, the leading manufacturer of portable roadways and runways, is enhancing its portfolio of ground mobility systems with the launch of Light Weight Vehicle Recovery Mats (LVRM).

## Light Weight Vehicle Recovery Mats (LVRM)

A lightweight woven matting that weighs just 9lb, the LVRM provides a recovery solution for vehicles of up to 10 tonnes that have become bogged down.

Through a composition of durable textile strips and reinforced epoxy transverse rods, the matting provides even wheel load distribution to military and civilian vehicles with pneumatic tyres.

Suitable for use in very soft muddy or snowy conditions as well as loose, granular sand, the LVRM can be quickly rolled out laid by hand to minimize the time a force is out of action.

The non-slip material is resistant to both chemical and biological degradation and can

be easily cleaned and repackaged for future use. Offering 15 sq ft of ground covering as standard, there is also the option of ordering bespoke sizes to suit forces' specific needs.

Michael Holdcraft, vice president of business development at FAUN TRACKWAY USA, said: "There's been much interest from expeditionary forces with small vehicle

fleets for a robust, lightweight recovery solution, which is what we've delivered with the LVRM.

"The new system neatly complements our existing product catalogue, delivering multi-terrain capabilities at a much lower weight. We're confident it will prove popular with a range of military organisations."





Octagon are pleased to announce the **BDS1** (Ballistic Defence System) is now fully certified. Wiltshire Ballistic Services Ltd carried out tests on Octagon's ballistic block to determine its ability to defeat 7.62x51 mm P80 AP (armour piercing) rounds to EN1 522/1523 threat level and to determine the V50 of the blocks against .50 calibre FSP's (fragment simulating projectiles) to STANAG 2920. Results can now be found on the Octagon Defence website go to:

<http://www.octagondefence.com/page10.html>

#### **Live fire ranges and shoot-houses**

Due to the binding process used in manufacture, the finished blocks keep their elasticity and so remove the sting of live fire without crumbling - improving their longevity. This makes them extremely suitable for live ranges. Most live ranges require a product over 12" thick of binder rubber to encapsulate live fire and fixing a substantial defence wall of this nature can be challenging. The BDS 1's modular design means no messy, hazardous adhesives, allowing specific target areas to be easily removed and renewed. We also offer adhesive free ricochet matting.

Finally, to ensure the most professional and effective outcomes are achieved, Octagon offers range design and consultancy where required and an end of life recycle service.

We look forward to your enquiry.



Engineered Ballistic Impact Reduction  
using the latest in polymer technology

# A New era in CBRN Respiratory Protection

A New era in CBRN Respiratory Protection additional radio and voice amp options.

Based on the successful design of Scott Safety's General Service Respirator (GSR) for the military, currently used by the Ministry of Defence (MOD), Scott Safety's First Responder Respirator (FRR) is the next generation of respiratory protection for the global civil responder community.

## First Responder Respirator (FRR)

Providing protection against chemical, biological, radiological and nuclear threats, the FRR uses revolutionary technology to deliver lower user burden, improved systems integration and ease of operation. It is compatible with conventional round filters with a Din 40 thread, Powered Air Purifying Respirators (PAPR), Self Contained Breathing Apparatus (SCBA) and compressed air airline breathing systems.

This ability to switch between supplied air and filters is vital for environments where the threat is unknown or extreme (IDLH Immediately Dangerous to Life and Health). The only safe approach when working in these environments is supplied air when the user is restricted by the amount of air he or she can carry. Being able to safely switch between modes allows users to tailor their protection to their immediate needs without having to retire to a safe zone and change equipment.

The capability to function as a combination respirator, a Scott Modular Respiratory Protection System (MRPS) is facilitated by the use of modular side fittings and different exhalation structures, including auto switchable. This modular construction allows the user to easily clean and maintain each element of the mask, as well as attach

A number of features have been introduced to improve wearer comfort and protection which is particularly important when the respirator is worn for extended periods of time. In addition to high protection factor twin primary face seal and harness systems with proven performance during weapons firing, the FRR features an advanced "mask within a mask" design. The ability to customize combinations of different size outer and inner masks facilitates virtually 100% population fit with maximum comfort. The inner mask module houses a unique secondary filter system that provides both extremely high protection against biological and nuclear particulate and a means to automatically remove sweat from the mask. A high efficiency hydration system delivers

in excess of 0.5 lpm from either canteen or backpack systems. The flexible hard coated lens provides a wide field of view and impact protection in excess of EN166, Class 1 requirements and corrective vision system can even accommodate progressive (varifocal) lenses.

Customers can also purchase a number of additional products to further enhance the FRR's capability include: carriage systems, radio and speech amplification interfaces, lens outserts for added impact, flash, sunlight and IR (laser) protection, advanced fit testing hardware and training packages.

For more information about Scott Safety and its range of products please visit [www.scottsafety.com](http://www.scottsafety.com).



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