M | MILITARY SYSTEMS & Technology

www.militarysystems-tech.com The Defence Suppliers Directory Magazine

QIOPTIQ

Much more than just Night Vision and Thermal Target Acquisition, Surveillance and Engagement Equipment

CUMMINS

A global power leader, approaching 100 years of diesel engine production

SCHROTH

Safety through technology

I-BODI

Leading with innovation, advancing through technology

TYRON

Military Wheel & Tyre Protection

PLUS NEWS FROM

Argon
Greenray
First Tactical
Bugeye
Polyamp
Peli
& TSS

International CBRN Symposium

8 November – 9 November 2016

Cover image courtesy of Qioptiq

ISSUE 29 | NOVEMBER | 2016



AVON MP-PAPR™

MULTI-POSITION

POWERED AIR PURIFYING RESPIRATOR

The lowest profile and most comfortable CBRN PAPR on the market.

The first flexible-bodied, modular PAPR is designed to be easily integrated with a wide range of protective equipment.

- **S-Shape crush proof hose technology**
- **Remote mask power switch option**
- **Multiple hot-swap battery options**
- **Intelligent constant flow control**

ADVANCE WITH CONFIDENCE

t: +44 (0) 1225 896 705 e: EMEAcustomerservice@avon-protection.com

www.avon-protection.com

AVON PROTECTION

M

Welcome to this edition of the Military Systems & Technology Magazine.

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.

The Defence Industry Web Portal

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

T +44 (0) 1398 351606
E sales@militarysystems-tech.com
W www.militarysystems-tech.com

CONTENTS

4 Qioptiq
Much more than just Night Vision and Thermal Target A cquisition, Surveillance and Engagement Equipment

8 Cummins
A global power leader, approaching 100 years of diesel engine production

10 SCHROTH Safety Products
Safety through technology

12 i-bodi
Leading with innovation, advancing through technology

16 Tyron
Military Wheel & Tyre Protection

21 International CBRN Symposium
8 November – 9 November 2016

22 Argon
Argon receives first Middle East CBRN PlumeSIM order

23 Greenray
A Tale of Two Oscillators

24 First Tactical
BRAND PROFILE

26 Bugeye Technologies
Manufacturer and a supplier of flight simulation equipment

28 Polyamp
RMN FAT at Polyamp

30 Peli
New! Peli 3325Z0, the Multi-Talented Torch

33 TSS
B&G Electronics: Vehicle Intercom Systems, Active Battery Monitors and more

Much more than just...

...Night Vision and Thermal Target Acquisition, Surveillance and Engagement Equipment

Qioptiq is one of the world's principal designers and manufacturers of infrared and image intensified night vision equipment. The Company's portfolio of products includes a complete range of equipment for use in the ground-based environment and for a wide range of applications.

Surveillance and Engagement Equipment Defense and Aerospace Equipment

They are designed to satisfy the most stringent requirements of international defence and security procurement authorities, and are all fully qualified for use in the most extreme environmental conditions.

Qioptiq now has a new leader, with Mr Fredrick Arp being appointed as chairman and CEO on 8 January 2010, bringing with him a vision to align the group's activities and further establish Qioptiq as a group providing innovative photonics solutions to its customers around the world.

After several years of working as an international network of companies, in 2010, the Qioptiq Group's 2,300 people across North America, Europe and Asia will begin working even more closely together under one name and one logo. Bringing together the LINOS Group and Point Source under the Qioptiq brand, the international Photonics provider will now boast a single identity worldwide.

Organised to deliver into its four main market sectors:

- **Industrial Manufacturing**
- **Medical & Life Sciences**
- **Research & Development**
- **Defence & Aerospace**

Qioptiq is your global one stop source for Photonic Solutions

Within the Defence & Aerospace Division, Qioptiq is focussed on maintaining a steady pace of development



within the Dismounted Close Combat / Soldier Modernisation market sector in order to ensure that Qioptiq products remain state of the art and provide features and capabilities called for by the User community.

The Defence & Aerospace Division provides an excellent balance of Technology, Engineering and Manufacturing capabilities that can provide world leading DCC products with both reliability and affordability.

Weapon Aiming and Target Acquisition Sights

Qioptiq provides a range of world leading night weapon aiming sights for a wide variety of platforms including individual assault weapons, light support weapons, crew-served weapons, anti-tank/anti materiel weapons and specialised sniper applications, using visible image intensifying and un-cooled thermal imaging technology.

Military Sight Surveillance and Equipment Solutions

A range of military sight surveillance equipment is also available utilising both visible image intensifying and uncooled thermal imaging technology. Binocular and Monocular eyepiece variants are available providing maximum flexibility for surveillance applications.

Military Image Intensifier Sights

Military Sight Surveillance and Equipment Solutions
Military Image Intensifier Sights

- **MERLIN SR Assault Rifle sight**
- **MERLIN MR Sharpshooter Rifle sight**
- **MERLIN LR Sniper Rifle sight**

Industrial Partnerships & International Organisations

Whilst Qioptiq is a worldwide organisation we also recognise that some nations wish to promote their own national industry capability and have a preference for encouraging local added production value for larger procurement contracts. The Qioptiq approach is to embrace this culture and form industrial partnerships where required. This open approach has lead to large contract success, with a number of potential collaborations ongoing around the world. Qioptiq is always on the lookout for opportunities to collaborate and partner with industrial players around the world in order to bring world class capability to national programmes.



Customer Services and Contract Logistic Support

Qioptiq know and understand the need for through life support of our customers equipment. Our mission is to deliver a fully integrated support service that totally satisfies our customers' needs. We have the skills, experience and commitment to meet the challenges of Customer Services – today and in the future.

About Qioptiq:

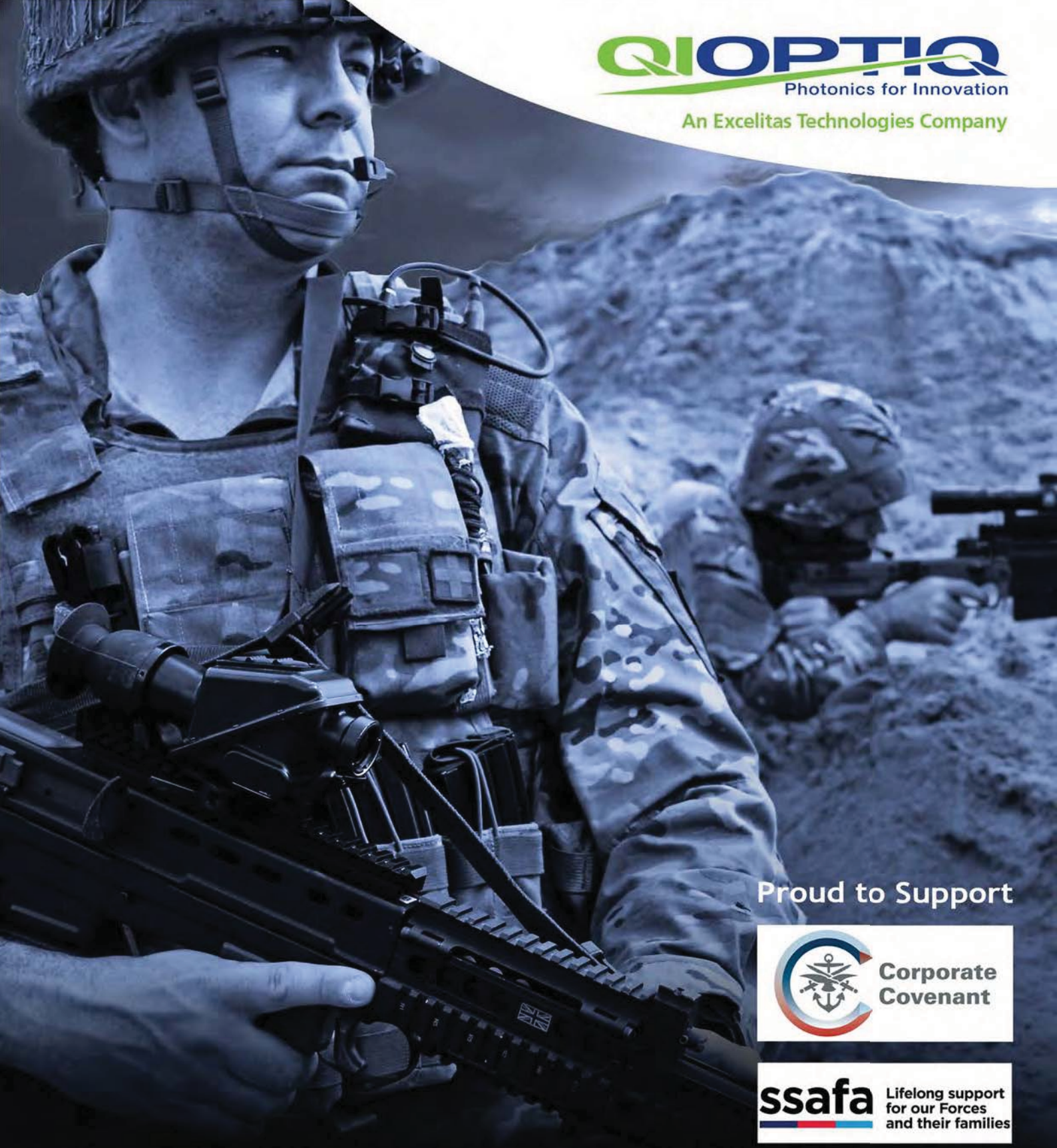
Qioptiq designs and manufactures photonic products and solutions that serve a wide range of markets and applications in the areas of Defense and Aerospace, Industrial Manufacturing, Medical and Life Sciences, as well as Research and Development.

The company is known for its high-quality standard components, products and instruments, its custom modules and assemblies, its leading-edge innovation, its precision manufacturing and its responsive global resourcing.

Through a series of acquisitions, Qioptiq has an impressive history and pedigree, and benefits from having integrated the knowledge and experience of LINOS, Point Source, Spindler & Hoyer, Gsänger, Optem, Pilkingtons, and others.

Qioptiq has a worldwide presence with locations throughout the UK, Europe, Asia and the US, employs over 2,300 people and generated revenues of approximately US$400 million in 2009.





QIOPTIQ
Photonics for Innovation
An Excelitas Technologies Company

Proud to Support

Corporate Covenant

ssafa Lifelong support for our Forces and their families

FROM CWS TO FTS - SUPPLYING THE BRITISH ARMED FORCES FOR MORE THAN FOUR DECADES

DESIGN | DELIVER | SUPPORT

Image Intensified | Thermal | Fused - Sighting Solutions

DRAGON - Uncooled Thermal Imagers



C S MULTI SR MR LR

MERLIN - Image Intensifiers



C SR MR LR

- Supplying the British Army for over four decades
- Over 100000 sights supplied to over 56 countries worldwide
- Fully ruggedized equipment utilising the latest technology

Email: **sales@uk-qioptiq.com** || For the latest information visit: **www.qioptiq.com**

TeamArmy
GOLD MEMBERSHIP

A global power leader,

approaching 100 years of diesel engine production.

Cummins is a global power leader, approaching 100 years of diesel engine production. The world's largest independent manufacturer of diesel engines and related technologies has pioneered many industry firsts since its inception in 1919. From being one of the first companies to instigate the use of diesel in commercial vehicles to running the first diesel race car, Cummins has consistently been at the forefront of technological developments in this ever-changing industry.

Military Diesel Engines

The company's product portfolio is unique in the industry, comprising of a wide range of engines and related component technologies. This gives Cummins the ability to provide tailored solutions to meet and exceed the needs of global markets and customers. Worldwide technical expertise enables Cummins to work closely with vehicle and equipment manufacturers to ensure that their products provide the best possible value and reliability to their customers, wherever they are located.

Over $700 million is invested annually in research and engineering to maintain our technology leadership across a power band extending all the way to 4,400hp (3281 kW). Cummins have manufacturing facilites in 13 countries and have over 5,700 support locations worldwide including US, UK, China, India and Brazil. Cummins has evolved into a truly global company.

Over many years, Cummins products have built a reputation for their reliability, durability and dependability in the military market.

Cummins Diesel Engines for Defence Applications

Cummins is a major supplier to defence agencies around the world including the UK Ministry of Defence (MoD) and US government. Large numbers of Cummins-powered units are currently in active service, in a wide variety of equipment ranging from logistic trucks to heavy artillery.

That's why Cummins is specified in so many military applications around the world. The B/ISBe series engines alone are in service in 30,000 items of military equipment worldwide.

Cummins diesels supply power for every type of military application worldwide: wheeled and tracked combat vehicles, logistic vehicles, naval propulsion and auxiliaries plus multi-megawatt generator sets. Cummins delivers every engine you need, wherever you need it.

Cummins Power for Military Equipment

Cummins is focused on providing the highest engine availability at the lowest possible running costs, whilst meeting the latest emissions regulations. Our strategy is driven by evaluating customer needs and market conditions in order to provide the optimum products with the appropriate technologies wherever Cummins engines operate. Equipped with a full portfolio of technology options such as Selective Catalytic Reduction (SCR), Exhaust Gas Recirculation (EGR) and Diesel Particulate Filter (DPF), Cummins can provide every technology to meet global engine emissions requirements. SCR aftertreatment has been chosen to meet the Euro 4 and Euro 5 on-highway emission standards.

For the US military market, Cummins engines comply with the latest EPA emissions regulations using Cooled Exhaust Gas Recirculation (CEGR) and can be used for applications where military fuels are not required.

Cummins Engines-Military Fuel Capability

Cummins engines are capable of operation on a wide range of military fuels, including NATO F34 & F-54, JET A-1, JP-8 and AVTUR. If high-sulphur fuels are to be used, engines can be offered either with or without the aftertreatment systems, depending on customer preference.

Cummins Engines for Armoured Fighting Vehicles

These highly advanced engines provide outstanding power density for higher speeds as well as with exceptional fuel-efficiency and sustained operations. The engine quality is well recognised by leading manufacturers of both wheeled and tracked Armoured Fighting Vehicles (AFVs), as well as close relatives such as Armoured Personnel Carriers (APCs) and reconnaissance vehicles.



Cummins QSB/ISBe and QSL/ISLe engines provide ideal configurations for many of these vehicle types. With high power output and compact envelopes they provide significant installation advantages by releasing valuable internal space and aiding payload. The QSM and QSX engines are power matched for heavier AFVs. Although exceptionally strong, they are lighter and more compact than other engines in their class.

Cummins Military Diesel Engines for Cargo Carriers

For cargo carriers, tactical vehicles, bowsers and transporters, Cummins engines need very little introduction. Across the 4.5 to 15 litre range they are equipped with deep reserves of torque to outperform much larger engines, particularly when hill-climbing. Advanced electronics and turbocharging contribute to class-leading levels of fuel efficiency.

Follow us on Twitter @CumminsEurope or @CumminsEngines for all our latest news.



Safety through technology

SCHROTH Safety Products provides customized solutions for occupant protection in military ground vehicles, airplanes and helicopters of all varieties as well as motorsport and OEM automotive applications. With over 60 years' experience in occupant protection, SCHROTH is one of the recognized leaders in seatbelt and seating products for military applications.



Modern safety systems require integration across complex platforms, which often call for customized solutions. Throughout the product lifecycle, from R&D through to prototype construction right up to series production, we control all processes according to state-of-the-art technology and carry out intensive testing and crash simulations for quality assurance purposes in coordination with the customer's requirements.
SCHROTH Specializes in:

Seat Belt and Harness Systems

SCHROTH Military Harness Systems have been designed to meet or exceed the user requirements of the UK, US and European Militaries. SCHROTH Military Harness Systems are designed to be easy to use, with consistent configurations and features that provides maximum protection, rapid entry and egress, adjustability and comfort for a wide range of occupants while seated in forward, rearward or side facing seated positions.

SCHROTH has accumulated a wide range of hardware and restraint solutions for countless applications meeting world-wide standards and regulations. Regardless of your requirement, SCHROTH can most likely supply your solution.

- **Water Activated Buckles (WAB)**
- **Multi Point Harness Systems for Field Stretchers**
- **Production and Program Management capabilities for Prototypes to Mass Production**

Seating Systems for Military Ground Vehicles (Mine Blast and Static Utility Systems)

SCHROTH's lightweight utility troop seat systems offer an ITAR-Free, COTS (commercial off the shelf), low-profile, space-saving solution for a wide variety of vehicle installations. The mine blast and utility seating comes complete with an integrated ECE/FMVSS compliant lightweight 4-point harness restraint.

Performance Levels

- **Tested according to AEP 55 Vol. 2 (Level 4b)**
- **Forward crash tested at 24g (50km/h with 95% dummy)**
- **Side facing crash tested to 13.5g (32km/h with 95% dummy)**

Specifications

- **Provides 5% to 95% occupant protection with full body armor**
- **Flame resistant to DIN 75200/FMVSS 302**
- **Environmental qualification**
  - 120 hours – ASTM B 117-90 for salt spray testing
  - STANAG 2895 – cold, heat, damp heat testing

Standard Features

- **Forward-, rear- and side-facing installation (wall or frame mounted)**
- **Comfortable and durable seat surfaces (tear and flame resistant fabric, color – black)**
- **SCHROTH ABTS (All Belts to Seat) 4-point shock resistant, lightweight ECE R16 and FMVSS 209 compliant harness**
- **Seat and asm® (Anti-SubMarining) harness designed to prevent submarining**
- **Spring loaded self-folding, storable seat pan**
- **ITAR free product – designed and manufactured in Germany**

Optional Features

- **Integrated self-folding foot rest**
- **Upgradable SCHROTH 4 or 5 point RFR™ ECE/FMVSS/FIA compliant harness**
- **Additional seat cushion padding**
- **Seating fabric available in black, dark blue, olive green and tan**
- **Storage pocket under the seat**
- **Optional narrow seating width (380 mm)**

The Resettable Mine Blast Utility Troop Seat design may be adapted to many ground vehicle applications and SCHROTH can meet interface, integration, and ergonomic requirements as necessary.

Gunner Restraints / Top Cover Harnesses / Standing Positions

SCRHOTH has multiple designs to meet various vehicle applications.

SCRHOTH's Gunner Restraint Systems (GRS) have been fitted to over 160,000 vehicles for operations in Iraq, Afghanistan and other trouble spots world-wide.

SCHROTH has developed and delivered four-point restraints with integrated airbag systems for 125 German Boxer Armored Personnel Carrier (APC) vehicles.

The SCHROTH inflatable restraint system offers numerous innovative features including shoulder harnesses fitted with belt-integrated airbags.

In the event of a crash, sensors measure the resulting acceleration and trigger the gas generators that produce micro pyrotechnical charges allowing the airbags to be deployed within a fraction of a second.

Although airbags have been in commercial vehicles for years, there are very few applications of airbag technology for a production ground vehicle developed specifically for military applications.

This inflatable restraint brings state-of-the-art protection by integrating the airbag into the shoulder harness and providing protection for side-facing occupants.



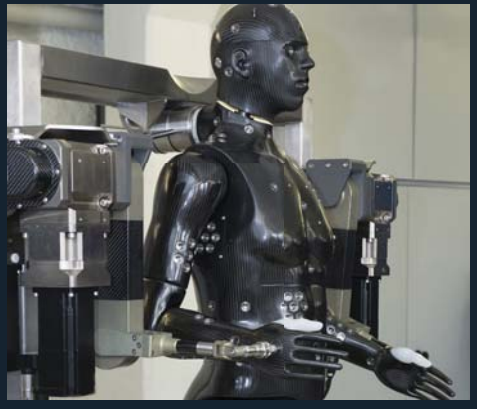
SCHROTH®
Safety through Technology



Leadi innov

i-bodi Technology is an innovative leader in project research, development and manufacture. We are specialists in developing bespoke products from customer defined specifications, with particular experience in computer controlled test platforms for CBRN protective clothing and respirator evaluation.

i-bodi Technology has developed heated and sweating, anthropometrically correct mannequins that can bend, walk and run; head-forms with soft polymer skins that fully articulate and breathe, can be heated and sweat; they can have internal cameras for fogging evaluation and can mimic speech.



ng with ation...

With over 20 years of industry experience, we specialise in providing intelligent solutions for both industry and large government organisations by developing products from initial concepts through to prototyping and manufacture.

Fogging and Respiratory Simulation System - FARSS

Fogging and Respiratory Simulation System is a computer controlled, sweating, heated head form that has been developed by i-bodi for a UK research agency to evaluate fogging and ice propagation in air crew, military and first responder respirators.

Benefits include:

- **Accurate Programmable Sweat Rates**
- **Purpose Developed Acuity Screen To Maximise Analysed Area**
- **Selectable Sweat Zones**
- **Humidified Breathing Machine**
- **Intensity And Area of Misting Analysed**
- **Highly Accurate Repeatable Testing**
- **Variable Breathing Rates**
- **Integrated Environmental Chamber**

Automated Head Form CBplus - AHFC

i-bodi Technology developed the articulated, carbon composite head form and upper torso, as part of the CBplus Mannequin Technology System on request from a Canadian Government Agency.

The headform was adapted to run as a portable stand alone system for use in smaller test chambers and temporary environmental analysis tents. It can also be used in conjunction with a Digital Breathing Machine and software, the DBM-01.

Digital Breathing Machine - DBM 01

The DBM-01 has been developed as a stand alone unit with a USB connection to a PC and for use in conjunction with head forms or mannequins to simulate live participant breathing in respirator and hard-wear evaluation studies and similar applications.

The DBM-01 is purpose built from components to allow external exposure to harsh environments and internal exposure to contaminated air supplies.
Respirator Testing Head Form V2 - RTHF V2

This respirator Testing Head Form has been designed as a test platform for simulating the realistic movements and breathing routines of combat field operatives. It has been developed to provide fully controllable and repeatable trials with the clear objective of analysing the functionality of respirators.

Any combination of movements and breathing patterns can be used, giving the user complete control of any test configuration.

...advancing through technology



Chemically Resistant Automated Mannequin and Head Form CBplus - CRAM

The CBplus Mannequin Technology System was developed by i-bodi Technology to a specification provided by Defence Research and Development Canada as part of the wider CBplus project. A light weight, chemically resistant, articulated mannequin, capable of performing test sequences comprising of any combination of ten pre-programmed moves for periods of up to six hours in chemically challenging environments.

Also included in the mannequin system was an interchangeable carbon composite torso for use in testing body clothing, headwear and respirators.

FASTMAN (Fully Articulated, Anthropometrically Correct, Sweating, Thermo-regulated, Mannequin)

FASTMAN is an anthropometrically designed carbon composite mannequin that has a heated surface and the ability to sweat. The mannequin is computer controlled and when attached to its' drive frame it can be made to run and walk at different speeds.

It can also simulate different positions including; sit, stretch, kneel and reach. The Mannequin, Drive Frame and Transport Trolley have been constructed from a range of materials chosen for their resistance to common threats both simulated and real, as well as cleaning agents.

MAKING THE WORLD A SAFER PLACE

SURPLUS AND OBSOLETE SMALL ARMS AMMUNITION DESTRUCTION

In the new global economy many Armed Forces are downsizing to reflect the budgetary constraints of their respective countries. This brings with it surplus items which, because of the reduction in the number of personnel, are put into storage until a suitable method of disposal is found. High on the priority list is ammunition of all types and nature. Small Arms Ammunition (SAA) accounts for a large percentage of any military organisation's arsenal. It also contributes significantly to the stockpile of surplus, obsolete and shelf life expired ammunition.

EOD Solutions Ltd in conjunction with CALDO engineering have developed the Transportable Ammunition Destruction System (TRADS) to destroy SAA in an environmentally responsible manner. There are two systems available, the TRADS 40 and the TRADS 20, both of which employ ceramic filtration backed up with a catalytic filter to ensure complete cleaning of the gases. Recent improvements have allowed the system to clean the gases even more efficiently to comply with EC Emissions Directive 2007 and the USA Environment Protection Agency guidelines - one of the most stringent in the world.

Both systems are constructed in ISO 20 foot container frames to allow sea and air freight delivery and vehicle transportation. The frames also allow for ease of maintenance and observation during ammunition processing. The TRADS 20 system shown here is designed to undertake medium and small-scale destruction of SAA where the ammunition is dispersed in different locations.

TRADS 20 will destroy a minimum of one and a half tonnes of ammunition per day. The system destroys all SAA and their secondary effect components except high explosive rounds and is completely enclosed to make it safe for the end user.



TRADS 20 utilises a furnace that allows small quantities of ammunition to be destroyed and then emptied into a bin for further processing such as Free from Explosives Inspection. It can then be filled again with the next batch of ammunition. Because this system is enclosed it means that the destruction process and the emptying is a continual cycle, automatic and completely safe for the operators.

EOD Solutions Ltd has recently manufactured the TRADS 20 and 40 for a client to operate in Afghanistan. The TRADS has proven itself in the most arduous of conditions over a two-year period during which time the system destroyed all types of SAA up to and including 14.5 mm ammunition.

It requires no infrastructure as electrical power and compressed air are built into the system. It can be positioned on site and can be working within 36 hours requiring only diesel fuel to begin operations. TRADS 20 is the ideal system for disposing of disbursed stockpiled SAA at an affordable cost.

www.eodsonline.com

EOD SOLUTIONS
ammunition destruction & disposal

EOD Solutions Ltd Telephone: **+44 (0) 1536 518802** Email: **info@eodsonline.com**
17 Westminster Drive | Barton Seagrave | Kettering Northants | NN15 6GE | United Kingdom

Vat No: **877-3275-82** Registered Company No: **5662513** DUNS No: **348676961**

Military Wh
Tyre Protec

Tyron has developed a range of solutions to keep wheeled vehicles moving safely in the event of a sudden tyre deflation.

Created following extensive consultation with both users and tyre fitters, Tyron's solutions have been extensively tested and proven in the harshest conditions.

The company's two product families are the Tyron All Terrain Rubber Runflat or ATR and the Tyron Multiband. In both cases these have been designed to allow for the changing of tyres without the need for specialist equipment.

Tyron has developed and patented a multipart rubber runflat, suitable for fitting to a wide range of military and security force off road vehicles.

Made out of rubber, the Tyron ATR absorbs the shocks from bumps more effectively than a hard composite solution and reduces the damage to the wheel and the tyre, so that both have the potential of being re-used when repairs have been carried out.

Using rubber also gives the passengers inside the vehicle a more comfortable ride in the case of a tyre burst, which enables them to be in better shape to carry out their task.

The patented multi part design allows the fitter to change a tyre at the side of the road without special tools.

Tyron's rubber runflats are designed with beadlock, which prevents the wheel slipping inside the tyre, this allows the vehicle to continue on its mission and get back to base. The use of rubber is far more effective than other materials.



heel & tion



Friction Shield for Prevention of Tyre Damage Friction Shield for Prevention of Tyre Damage

Tyron has developed a lubrication system to further improve the performance of the ATR. Friction Shield is a sealed lubrication system, which bursts following a sudden tyre deflation and provides the right amount of lubricant to reduce the heat generated by friction between the runflat and the inside of the tyre, to ensure that the tyre is not damaged further.

TYRON
Flat Tyre Protection



Friction Shield enables the vehicle to keep moving over longer distances and at faster speeds. Forgetting the lubricant, allowing it to dry out or become contaminated will cause a 90% reduction in the runflat performance.

Friction Shield ensures the right amount of clean, fresh lubricant is delivered when needed.

Complete Wheel Assembly for All Terrain Environments

Working together with Global Wheels of South Africa, Tyron is able to provide a complete wheel and tyre solution fit for the most demanding environments.

These combine the strength of the bolt together steel or aluminium wheels with the multipiece Tyron ATR to provide a very high level of road performance, which is not possible with a composite solution.

Distance and Speed Testing and Ballistic Protection

Tyron's ATR solution has been extensively tested in accordance with the internationally recognised Finabell standards for distance and speed. During all the tests the Tyron ATR far exceed the requirements.

The ATR has been ballistically tested. Five shots were fired into the side of the runflat and two into the tread area from 50m with an AK47 using 7.62mm ammunition and an M16 using 5.56mm rounds.

Special effort was made to hit the fixings with one round making a direct hit on the fixing head, which ricocheted off and another hitting the washer and was absorbed.

The other three simply passed through the rubber system. The two shots into the tread area around the fixings were absorbed and none of the shooting had any effect on the performance of the runflat system.

The same test was also carried out at only 25m with the same results. In total, 35 rounds were fired at the runflat with no structural integrity damage.

Tyron Multiband for Defence and Security

Developed by Avon Tyres in the 1970s for the Royal Ulster Constabulary, the Tyron Multiband is designed to keep the tyre firmly in place on the wheel, allowing the vehicle to be driven to a safe place to change the tyre.

The Tyron Multiband is in use on a wide range of vehicles including police and fire vehicles, ambulances, and cash-in-transit vehicles.

In all cases where Tyron Multibands are fitted, it is to ensure that the tyre stays in place in the event of a 'blow out' and ensures the driver can manoeuvre the vehicle to safety.





Guartel Technologies Ltd

The UK's premier manufacturer of metal & cable detectors for military and law enforcement operations.

Guartel Technologies Ltd is a world leading company specialising in the design and manufacture of high quality, metal, mine, wire detectors and Counter IED products.

Our products are in-service with police forces, security services, NGOs, NATO and other military forces world-wide.

We supply a range of products for use in Counter IED, EOD, Search and Demining operations.

- **COMMAND WIRE DETECTORS**
- **METAL DETECTORS**
- **CIED EQUIPMENT**
- **DEMINING EQUIPMENT**
- **CIED TRAINING**

T: +44 (0)20 7384 3001
E: info@guartel.com

ADS AeroSpace Defence Security

bsi. ISO 9001 Quality Management FM 74298






Unit 8-11 New Forest Enterprise Centre, Chapel Lane, Totton SO40 9LA, United Kingdom

www.guartel.com

CBRNUK®
GREAT BRITISH INNOVATION

YOUR PROTECTION IS OUR MISSION_

The UK industry's Chemical, Biological, Radiological and Nuclear Defence, Security and Resilience special interest group



FIVE WORLD-CLASS CAPABILITIES_

Detection, Identification and Monitoring

Information Management

Protection

Hazard Management

Medical Counter-measures

International CBRN Symposium

8 November – 9 November 2016
Location: Defence Academy of the United Kingdom, Shrivenham

The Multi-disciplinary Approach to CBRN

Overview

The Defence Academy, in collaboration with CBRN-UK, is hosting the annual International CBRN Symposium at Shrivenham on Tuesday 8 and Wednesday 9 November 2016. The event will include an all-inclusive dinner at STEAM on the evening of 8 November and an unclassified Dstl briefing on the afternoon of 9 November.

Theme

The theme this year is to demonstrate and discuss the need to consider CBRN as it affects diverse disciplines at home and abroad; military operations, security policing, and disaster and humanitarian first responders. The plan is to have 3 discreet but connected sessions, each starting with invited speakers followed by offered papers from national and international practitioners, users, industry and academia.

This symposium will consider what technologies and practices can be shared by the military, the emergency services and humanitarian aid organisations.

Displays, Demonstrations and Sponsorship

We offer companies, departments and establishments an opportunity to display their equipment or advertise their capability within the DCC Conference Hall. We have the facilities to enable demonstrations of vehicles and equipment inside or just outside the Conference Hall. Displays and demonstrations should be available throughout the event and during the Dstl CBR Annual



Review which follows the Symposium on 10 November. Attendees invited by Dstl to the Review are drawn from across a wide section of the UK and US CBRN Defence, Security and Resilience communities and this is a unique opportunity for exhibiting companies to target a wide audience of senior decision makers.

There are also unique opportunities for sponsoring this event.

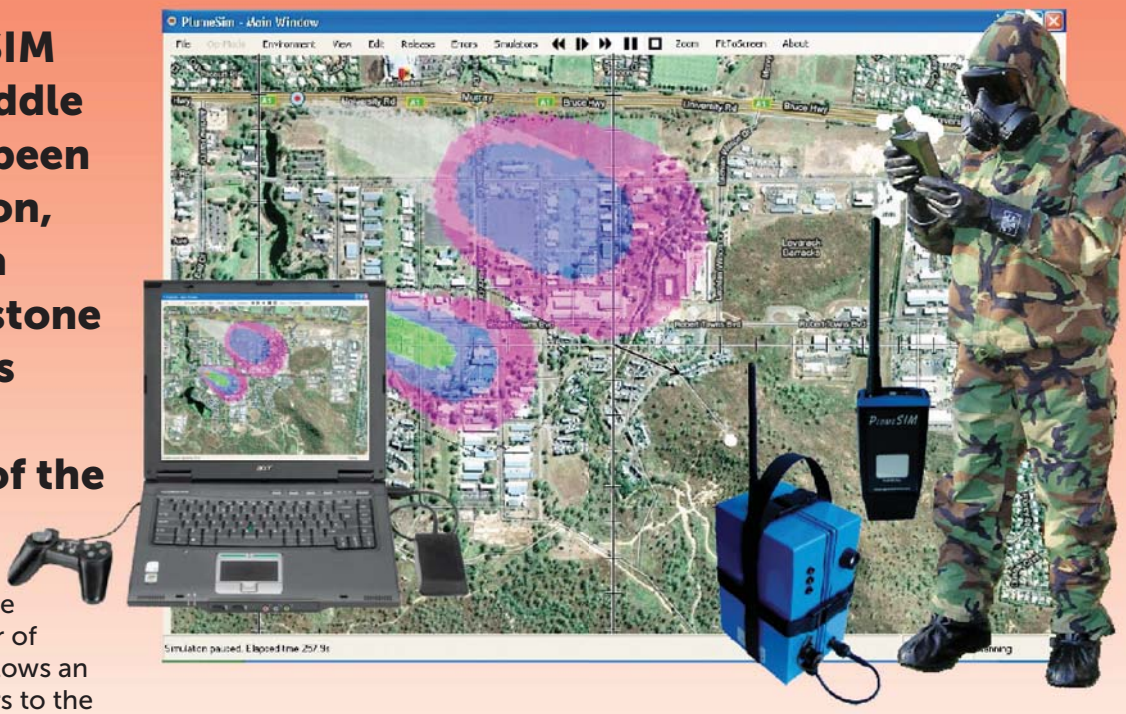
More Detail

For more detail on the event, including Registration, booking display space and sponsorship, and particularly the programme, please check our website.
https://www.cranfield.ac.uk/events/symposia/sym-cbrn

CBRNUK
GREAT BRITISH INNOVATION

Argon receives first Middle East CBRN PlumeSIM order

The first PlumeSIM order for the Middle East region has been received by Argon, and represents a significant milestone in the company's growth in this important part of the world.



In addition to PlumeSIM, the contract includes a number of training simulators, and follows an earlier delivery of simulators to the same customer, the use of which successfully supported an important national CBRN exercise resulting in further investment in Argon simulators.

PlumeSIM is a modular CBRN / HazMat training system facilitating the merge or Live and Virtual training for Table Top exercises while also providing a world leading dedicated Live CBRN training capability. The systems powerful After Action Review reporting system enables high quality learning outcomes to be achieved.
PlumeSIM can also be integrated with third party Live and Virtual training systems to further enhance CBRN training capabilities for Military, First Responder and Energy organisations.
Argon has delivered PlumeSIM to a number of the world's leading CBRN training facilities including the USA, UK, Canada, Sweden, Germany and Portugal.

Argon Electronics

Argon Electronics was established in 1987 and has since become a world leader in the development and manufacture of hazardous material detector simulators, most notably in the fields of military Chemical, Biological, Radiological and Nuclear (CBRN) defence. Our simulators have applications from civil response to unconventional terrorism and accidental release, and international treaty verification, with a growing presence in the nuclear energy generation and education markets.
For further information please contact: Argon Electronics,
16 Ribocon Way,
Progress Business Park,
Luton, Bedfordshire, LU4 9UR, UK

Telephone: **+44 (0)1582 491 616**
Email: info@argonelectronics.com
www.argonelectronics.com

ARGON™ | World leaders in CBRN/ HazMat training systems

A Tale of Two Oscillators

Greenray Industries' New YH1485 OCXO and T1241 TCXO



Greenray Industries, Inc., the US-based manufacturer of high performance, quartz crystal oscillators, has announced the availability of two new products, the YH1485 OCXO (oven controlled crystal oscillator) and the T1241 TCXO (temperature compensated crystal oscillator).

Each oscillator offers design engineers a unique set of features and performance- oriented benefits to satisfy demanding, real-world applications and operating environments.

The new YH1485 OCXO is designed as a reference for radar, instrumentation and military applications that require very low phase noise (below -180dBc/Hz) and excellent short and long-term stability.

Available from 10 to 100MHz, the YH1485 features a 25.4mm square, hermetic package and supply voltage of +15 or +12Vdc. Optional reduced acceleration sensitivity – down to 3 x 10-10/g in the worst axis – is available to satisfy high shock or vibration environments and improve system performance. Electronic frequency control (EFC) is provided for precise tuning or phase locking applications.

The YH1485 environmentals are:

- Shock: per MIL-STD-202, Method 213, Condition C
- Vibration: per MIL-STD-202, Method 204, Condition A
- Storage Temperature: -55° to +85°C

Greenray's new TCXO, the T1241, delivers ultra-low g-sensitivity and reliable, superior phase noise performance for demanding applications – all with low power requirements. Specifically, the T1241, available from 50 to 100MHz, provides phase noise below -155dBc/Hz and optional reduced acceleration sensitivity to 7x10-11/g in the worst axis. With a supply voltage of +3.3 or +5Vdc, square wave CMOS output and a compact, hermetic package, the T1241 excels for mobile and airborne applications. EFC is standard.
September 1, 2016

Environmentals for the T1241 TCXO are:

- Shock: per MIL-STD-202, Method 213, Condition K
- Vibration: per MIL-STD-202, Method 214, Condition I-F
- Storage Temperature: -55° to +95°C

Greenray's focus has always been tight stability, low phase noise, low g-sensitivity oscillators – and both the T1241 and YH1485 embody this philosophy. Applications for the company's products include defense, communications, aerospace and various commercial/industrial markets, including GPS and instrumentation.

Now in their 55th year of operation, Greenray Industries' frequency control devices are designed, assembled and tested at their Mechanicsburg, Pennsylvania, USA facility. The company's Quality Management System is ISO9001:2008 and AS9100C certified, and they are ITAR compliant.

For information about Greenray Industries and their full line of high performance quartz crystal oscillators, technical resources and more, visit **www.greenrayindustries.com**. You can call Greenray at **+1 717-766-0223** or e-mail **sales@greenrayindustries.com**.



GREENRAY

First Tactical

BRAND PROFILE

Newly launched in the UK and Europe for 2016 is ground-breaking technical brand, First Tactical. Revolutionising the tactical industry, First Tactical launched in the US and Asia in July 2015 and is supplying the end consumer with high quality product for men at a competitive price.

Founded by Dan Costa in 2015, First Tactical evolved out of Dan's expertise within the tactical business. With experience since 1999, Dan originally bought the 30-year- old outdoor clothing company Royal Robbins and developed 5.11 Tactical under the parent company.

During his time fronting Royal Robbins he doubled sales and reduced costs before selling it in 2003 to Phoenix Footwear, but taking 5.11 Tactical with him. After growing the 5.11 Tactical brand to be one of the most recognised names in public safety apparel worldwide, Costa sold majority ownership in 2007. Since then Dan has launched several more performance apparel companies with his daughter Kelsie under the umbrella Innov8 Partners, including Noble Outfitters and First Tactical.

Working with real operators from the tactical fields, First Tactical strives to fully understand customer demand through a circular development process: Listen, Engineer, Field Test and Deploy.

First Tactical listens to its customers through regular product development sessions with real operators in the field. First Tactical also ensures it engineers cutting-edge product to transform common gear into incomparable tools for professionals. Through the use of field testing, First Tactical's products are put under scrutiny in the most demanding conditions to ensure they withstand a variety of environments.

A LOOK INTO THE COLLECTION

The brand offers a full suite of clothing and complimentary equipment for tactical professions across all fields. The First Tactical range encompasses boots, trousers, technical shirting, outerwear, gloves, knives, flashlights, socks, packs and bags, with more categories to follow.

The long sleeve BDU Tactix series shirt is made from industry leading stretch fabric and has a durable fit, making it both flexible and tough for tactical wear. Featuring a concealed zipper, specialised pockets and vents, this shirt functions equally as well for public service workers as it does for specialist operations. RRP. £69.95 Available in sizes S-2XL.

The 8" Side Zip Duty Boot is a hybrid of practicality and comfort. Featuring an odour and moisture resistant interior sole, tough cowhide toes and two knife pockets, they are ideal for both tactical and endurance scenarios. A torsion-flex shank provides added flexibility in the sole to encourage comfort in every movement. RRP. £89.95. Available in sizes 6-13.

The mid-sized durable flashlight is heavy duty to withstand nightly field use, clipping easily to pockets or kit. RRP. £39.95

For more information on First Tactical and to purchase product, please visit www.firsttactical.co.uk







FIRST TACTICAL™


FIRST
TACTICAL
IMPROVED GEAR.
LOWER PRICES.
firsttactical.co.uk

Bugeye Technologies

Bugeye Technologies is an ISO 9001:2008-Certified manufacturer and a supplier of flight simulation equipment that supports large and small simulation companies in the U.S. and around the globe. In January 2016, Bugeye Technologies relocated to Union, Missouri and doubled its staff and facility size.



We Offer Flight Simulation Components for Tactical and Mission-Specific Training

Bugeye Technologies produces realistic, serviceable and affordable products for the flight simulation industry. Our products are accurate replications of real aircraft hardware, with functionality that's virtually indistinguishable. We sell our simulation products at affordable prices, and customize them to meet your specific simulation program.

We offer a complete line of high-quality replicated flight grips, targeting controllers, control sticks, cyclic collective and throttle mechanisms, avionics and light-panels for many popular fixed wing and rotor craft.

How We Can Help Your Program: Various Levels of Fidelity

Bugeye Technologies is able to modify and customize our products to meet your program's needs, all while assuring that your program receives a fully serviceable and affordable package. We realize that that each program requires a specific level of fidelity. Some programs might

Bugeye Technologies
1442 Hoelzer Court
Pacific, MO 63069
Phone (01) 636 257 3530

be limited by budget, others simply don't require high-fidelity products.

That's why we've categorized our simulation products into three levels of fidelity:

The FC0500 series includes low-cost desktop-based flight control products. This series is intended for demonstration and development applications where a high-quality replicated flight grip is desired for system control inputs, but flight control inputs aren't as critical and can be more "game-like." And to meet unique cost objective, we are able to reduce certain functionality on flight grips (e.g. omitted switches) if necessary.

The FC1000 series includes mid-fidelity products designed for desktop and "task" cockpit applications. These products are intended for programs that require high-quality replicated flight grips with precise and highly repeatable flight control movements.

The FC2000 series includes mid-to high-fidelity devices for use in aircraft-specific simulations. These devices accurately replicate the ergonomics, dimensions and motions of real aircraft controls. We also offer attach points that replicate actual cockpits (for most applications).

Bugeye Technologies' provides a choice of FC0500, FC1000 and FC2000 series products so that your program receives the most value for its specific training needs.

Multipurpose Reconfigurable Cockpits (MRC)

Bugeye Technologies manufactures a low-cost multipurpose reconfigurable cockpit that is compatible with all of Bugeye's FC1000 series flight control products. This cockpit is designed for rapid reconfiguration by changing out flight controls to support multiple aircraft types.

The cockpit's low overall height facilitates ingress and egress. The side consoles are available in multiple lengths and equipped with full-length DZUS rails at standard aircraft spacing to accept our FC1000 controls and other standard aircraft panels. The MRC F-35 version includes a more ergonomically correct cockpit with a sliding throttle console to prevent damage to the throttle.

Bugeye Technologies produced low-cost Simulated Ejection Seats (SES) for the standard MRC, available in several layback options. The seat fits perfectly in the MRC and comes complete with dual-density seat pad, optional Ox rings and electrically controlled height adjustment with 6 inches of range (3 inches up and down from the neutral position). The seat is rated for loads up to 600 pounds.

A 30-inch high-quality touchscreen beneath the standard glare shield provides a large working area to present



complex aircraft instrument panels. The rugged and reliable touchscreen uses surface acoustic wave technology suitable intended for use with gloved hands with minimal parallax.

The MRC represents a great value in a mid-fidelity Simulation Grade cockpit.

This universal product ships with castors and leveling adjustments accessible from the top. It can be rolled into existing dome environments or coupled with existing visual display systems. The cockpit is also designed to work with Bugeye's OTW1000-3W Out-The-Window visual display stand. This unique stand can hold three commercial flat-panel displays.

Custom Light Panels and Cockpit Furnishings

Bugeye Technologies designs and manufactures a complete line of Simulation Grade light-panels designed to support our customer's requirements for high-fidelity fixed wing and rotor craft cockpit products. Since all Bugeye products are developed in-house, we can accommodate requirements from the simplest to the most complex — both for large orders or one-off designs.



RMN FAT at POLYAMP

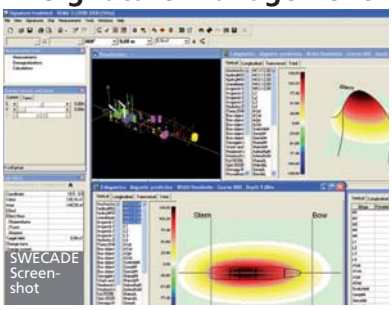
STOCKHOLM, October 13th 2016 – Polyamp AB, System Division / HQ, located at Tingsvägen 19 in Sollentuna outside Stockholm has successfully performed a Factory Acceptance Test (FAT) to the Royal Malaysian Navy for delivery of 2 Advanced Degaussing System controllers. The FAT was honoured by presence of the Malaysian Ambassadors to Sweden, Mme Puan Roslina.



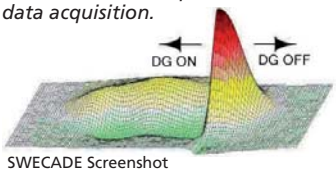
After successfully deliverance of two Advance Degaussing Systems for the Royal Malaysian Navy LCS Programme earlier this year it was time for Factory Acceptance Test for two other system deliveries. The Malaysian delegation of key personnel of the Programme inspected Polyamp's Advanced Degaussing Systems factory in Atvidaberg some 200 km South of Stockholm, the facilities consist of several unique workstations for Degaussing production as well as offices, test facilities, showrooms and a training centre.

In a recent statement, Eric Östlund, CEO of Polyamp, states, "Our goal is to make all our Customers satisfied. Our unique ADG System design and seamless production process in our factory as well as the high effectivity which our organisation works with, has definitely increased our market shares in a sector driven by the customers modernisation demands and strategic visions as well as to economic constraints. This despite that the customer always demands "best value for money" - and that's exactly what we deliver with our first class ADG – systems. Just take a look at our reference list – it speaks for itself! "

World Class Signature Management



SWECADE© is an underwater signature management software package for magnetic, electric and pressure.
SWECADE© has been used at all RSwN fixed and transportable magnetic ranges since 1995. SWECADE© runs on any standard PC's with WinX.
The SWECADE© software can be operated for training and study or as an analytic tool that can read sensor values from a file or use a ADC-board input for direct sensor data acquisition.



SWECADE Screenshot

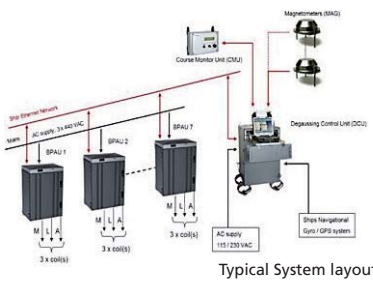


San Antonio class

Degaussing Systems



Polyamp implement a modular design philosophy and offer several types of ADG equipment for all types of vessels. A good example of a project where Polyamp designed and delivered the ADG is the USN Carrier CVN 77 and the RSwN Visby class.

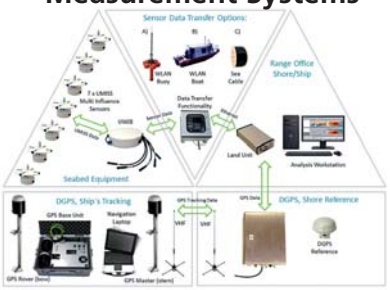


Typical System layout

An Advanced Degaussing Systems (ADG) with a full 3-dimensional coil arrangement supplied by distributed Bipolar Amplifier Units (BPAU) is required to meet modern performance requirement(s).

A computerized Degaussing Control Unit (DCU) controls the amplifiers with input from Magnetometer and Navigational data for worldwide operation.

Underwater Signature Measurement Systems



Typical System layout

UMISS© MkII is base for a family of Multi Influence Sensor System solutions designed to measure Underwater signatures. The Sea Module is equipped with Magnetic, Electric, Pressure, Acoustic and other sensors. Underwater signatures measured are used for fixed and mobile ranging and harbor protection as well as self ranging systems such as POLYSERA©.



Minimal UMISS System MKII

Proven System



Typical centralized ADG System



Polyamp ADG on the RSwN Gotland class



Polyamp ADG on the RSwN Visby class



Polyamp ADG on the RDN Absalon class

POLYAMP

POLYAMP AB • Box 925 • 191 29 Sollentuna, SWEDEN
Tel: +46 8 594 693 00 • Fax +46 8 594 693 05
E-mail: info@polyamp.se • http://systems.polyamp.com

OUR FOUNDATION IS OUR TECHNOLOGIES, OUR MISSION IS EXPANDING YOUR CAPABILITIES.



Scott 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. We apply what we learn there – as well as emerging research and technologies to every design to ensure superior capability, functionality and comfort. Irrespective of whether your requirement is for CBRN protection, Breathing Apparatus for EOD, USAR, Damage Control, Law Enforcement, Fire Fighting or for specialist applications Scott can meet your requirements- Comfortably

SCOTT SAFETY

For more information visit: **ScottSafety.com/EMEA**

Follow us on Twitter **@ScottSafetyEMEA**

New! Peli 3325Z0, the Multi-Talented Torch:

Compact, lightweight, with Back Switch and ATEX Zone 0 Certified





One small switch-spark can cause an explosion in a dangerous area. On its continued task to develop torches for hazardous areas, Peli Products, the global leader in the design and manufacture of advanced lighting systems, has introduced the new ATEX safety-certified 3325Z0 LED torch.

"For years, our lighting products have been a standard in the safety-approved light market," said Stephan Corti, President of Peli Products' Commercial and Government division. "By continuing to develop best-in-class, innovative products, we are providing the features that matter most to end users at an unbeatable value."



Ideal for Oil & Gas, Fire & Rescue and other hazmat Industries, the new Peli 3325Z0 combines three important features that makes it a multi-talented torch: compact, ATEX Zone 0 certified and with a button back switch for one hand activation. It uses 3 AA alkaline batteries, produces 155 lumens of powerful light, weighs only 173 gr (including batteries) and is 15.4 cm long. Being certified to ATEX Zone 0 (Cat. 1) means that it can be used in the most hazardous work environments.

The back mounted switch makes the 3325Z0 a perfect match for any helmet mounted applications. The photoluminescent ("glow in the dark") shroud ensures you'll be able to locate your light even in the darkest of conditions. For added reliability, an IPX7 ingress protection level will protect the 3325Z0 in the most severe weather conditions.

All these features plus Peli's Lifetime Guarantee* make the 3325Z0 a great companion for your work.

For more information: **www.peli.com**

PELI™

BECAUSE LIFE IS HEAVY ENOUGH.

INTRODUCING PELI™ AIR. UP TO 40% LIGHTER.



With new airline-friendly form factors, Peli Air will lighten the load of those dedicated professionals who travel for work. Now more than ever, when they need to protect their equipment and tools they will reach for Peli Air, engineered by Peli, the pioneers of protective cases. Simply, because Life is heavy enough.

NOTHING PROTECTS LIKE PELI. GUARANTEED FOR LIFE*.

*where applicable by law

See the new line of cases at www.peli.com/air

PELI™ AIR

B&G Electronics: Vehicle Intercom Systems, Active Battery Monitors and more

As of July 1, 2016, TSS International BV in The Netherlands were appointed official European distributor for B&G Electronics.





The collaboration between Columbia -based B&G Electronics and TSS International ensures that B&G acquire a reliable and respected partner within Europe, and provides TSS International with a new product in their quest to expand their already high-quality selection for the armoured and civilian vehicle market.

TSS has high expectations for this expansion in its 'Armour Mobility' product portfolio. The enthusiastic customer response to the collaboration and the first results received from a test institute on behalf of EMC/CE certification are promising.

B&G has already sold 40,000 intercoms on the global market and, with TSS International, the company now has their long-sought-after partner for the European market.

Both companies are distinguished in advanced technology and user-friendly products, and consistently pursue their shared business philosophy to achieve the highest possible customer satisfaction.

By storing a small stock of selected products on TSS premises, both parties are confident that the European vehicle manufacturers and converters can be successfully serviced with this new high-quality addition to the market.

A brief overview of the features for vehicles that B&G offers:

- **The PW Series, a vehicle intercom for inside-outside communication, is available in 50, 100 and 200 watts.**
- **The PW Series is standard-equipped with integrated sirens that have multiple tone options.**
- **The PW Series also has an optional, practical hand-held microphone with easy control of all functions.**
- **The VC Series, for internal communication in vehicles with two or more compartments, for example limousines or prisoner transport vehicles.**
- **The BM, a monitor that provides insight into the voltage level/status of the two batteries in a vehicle equipped with many electronics.**

For more information on these and other TSS products, please contact our sales team via s**ales@tssh.com**, or by phone: **+31 180 618 922**.

PROVIDING SPECIALIST SOLUTIONS FOR THE ARMED FORCES WORLDWIDE



- **Leading manufacturer for lifting devices** offering standard and specialist solutions
- **First-rate lashing systems** for the transport of military equipment on **land, sea and air**, according to European, International and special military standards
- **Resilient non-skid snow and traction chains**, specially designed for harsh military applications to guarantee maximum traction on snow, ice and off road

INNOVATION QUALITY KNOW HOW



RUD® www.rud.co.uk
01227 276611



RUD Chains Ltd, Units 10-14, John Wilson Business Park, Thanet Way, Whitstable, Kent, CT5 3QT
Contact Alan Walton - alan.walton@rud.co.uk