MSPO in Poland

The 23rd International Defence Industry Exhibition MSPO will take place next week from September 1 to 4 in Kielce, Poland. Over the years the MSPO has become one of the most important defence exhibition in Europe, ranked the third largest after Paris and London. Over 400 companies from 23 countries have already confirmed their presence at the trade show. The exhibition space booked for MSPO and the accompanying International Logistics Fair LOGISTYKA exceeds 25,000 sqm for the first time this years. The technology highlights of MSPO 2015 exhibition are outlined on the following pages.

The first day of MSPO will see meetings of the Secretaries of State and the Minister of National Defence, Minister of Foreign Affairs, Minister of Economy, Minister of the Treasury, Minister of Science and Higher Education and the Director of the National Centre of Research and Development with representatives of the defence industry.

With Norway being this year’s partner nation, the lead-nation exhibition featuring Norway’s armed forces in the scope of MSPO will be one of the culminating points. According to the Norwegian Ministry of Defence, the Targi Kielce’s International Defence Industry Exhibition provides an excellent opportunity to facilitate cooperation beneficial for both nations. The Norwegian exhibition will be hosted by the Minister of Defence Ine Eriksen Søreide. Deputy Minister Øystein Because will chair one of the seminars within the scope of MSPO. This seminar has the title “Poland and Norway – Strong partnership in terms of defense, industry and technology: Past, present, future.”

Not only the exhibition is of interest to the visitors. The MSPO programme encompasses almost 40 seminars and congresses. They provide an ideal opportunity to exchange experiences, to expand knowledge about the latest military technology solutions, to establish contacts and relations as well as to hold talks between the defense industry, the armed forces and public administration.

The programme of this year’s Expo includes the National Scientific Conference “Poland’s defence industry’s consolidation and the competitive European armaments market”, organised by UJK Kielce, the Institute of Political Sciences, Targi Kielce, WSH Kielce, WSZ-SW, WSEP/NM Kielce, ITWL and PLP.

Other conferences staged within the scope of MSPO address: “Combat forces and weapons in wars of the future”, organised by the National Defence University AON and Jagiellonian University, and the “3rd conference – Doing business with the army”, the conference of the Inspectorate for Armed Forces Support.

Another highlight will be the seminar on “Possibilities of perovskite utilisation in the Republic of Poland’s Armed Forces” on Tuesday hosted by Poland’s Future Defence Technology Inspectorate “Inspektorat Implementacji Innowacyjnych Technologii Obrонnych” (I3TO). More information about MSPO:

www.mspo.pl

Dorothee Frank
**Air defence system from Diehl**

(df) Diehl Defence will showcase, among others, their modern air defence system, IRIS-T SLM, that is in the final round of the Polish Narew programme. A special feature of this highly sophisticated system is the flexible software architecture that allows any national device to be added to the system. For example, Sweden will use IRIS-T SL with national radars. This flexibility is unmet by other systems and will also allow any future technologies to be added or any part exchange to be realised with low customization effort.

Another outstanding feature is the realisation of system elements in standard containers. With this container based technology IRIS-T SLM is the first deployable air defence system totally autonomous of the vehicle. The containers might be added to any suitable national vehicle, also the vehicles might be changed during the life time. Other features include vertical launch which provides comprehensive 360° protection against attacks from the air by aircraft, drones, helicopters, cruise missiles, guided weapons and rockets. The seeker is locked onto the target to be engaged during missile flight (lock-on after launch). Target data are updated during the flight via the data link.

The air defence system enables simultaneous engagement of several targets, even at very short range and with extremely short reaction times. The guided missile is fired from eight launch canisters, using its thrust vector control for superior manoeuvrability. Due to its high degree of automation it is ideally suited for continuous operation with minimum staff requirements.

[www.diehl-defence.de](http://www.diehl-defence.de)

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**T129 ATAK from TAI**

(df) This Monday Turkish Aerospace Industries (TAI) announced the completion of the first ever demonstration flights of its T129 ATAK Advanced Attack and Tactical Reconnaissance Helicopter in Poland. The helicopter will be presented on static display of TAI at MSPO.

The ATAK helicopter is a candidate for the Polish Kruk programme, that will lead to a €2.6 billion contract to replace the country’s attack helicopters across all three services.

The T129 ATAK advanced attack and tactical reconnaissance helicopter is a new generation tandem, two-seat, twin engine helicopter, specifically designed for attack and reconnaissance purposes. T129 ATAK incorporates a totally new system philosophy, with powerful engines (LHTEC CTS 800-4A), state-of-the-art avionics, visionics and weapon systems, a modified airframe, new drive train and tail rotor. T129 ATAK has been optimised to meet the performance requirements of challenging geographical and environmental conditions. The first batch of T129 ATAK helicopters has already been delivered to the Turkish Armed Forces and is in service supporting the missions of the Turkish Army.


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**AH-64 Apache on display**

(df) Boeing will highlight products and services capable of supporting Poland’s plans to modernise its armed forces at this year’s MSPO, including a ScanEagle unmanned aircraft system, the AH-64 Apache and CH-47 Chinook helicopters.

Especially the combat proven AH-64 Apache is in the focus of interest of the Polish Armed Forces. The helicopter includes modern technologies, f.e. Boeing added control of unmanned aircraft to the Apache helicopter’s capabilities, using “eye-in-the-sky” technology, in 2013.

The AH-64 Apache is used by the U.S. Army and a growing number of international defence forces. Till now Boeing has delivered more than 2,100 Apaches to customers around the world. U.S. Army Apache have accumulated more than 3.9 million flight hours since the first delivery in 1984.

[www.boeing.com](http://www.boeing.com)
Defence systems, weapon stations and more from Kongsberg

(df) Kongsberg will display a wide range of systems at MSPO, including a unit of the NSM-based coastal defence system in use with the Polish Navy, a unit of the NASAMS air defence system, the PROTECTOR remote weapon station, surface and submarine combat systems and tactical communications systems. The NASAMS air defence system is a candidate for the Short Range Narew programme of Poland. The proven, fielded, reliable and highly capable NASAMS system contains a BMC4I (battle management, command, control, computers, communications, and intelligence) air defence capability through the integration of sensors and launchers. It employs the Advanced Medium Range Air-to-Air Missile (AIM-120) as the primary weapon. Targets are detected and tracked by a high-resolution, 3D pencil beam radar. Several of these radars and the associated fire distribution centres (FDCs) are netted together via radio data links, creating a real-time recognised air picture. NASAMS can fire on target data provided by external sensors. Advanced emission control features of the radars minimise the risk of revealing the NASAMS unit’s own position. The FDC automatically performs track correlation, identification, jam strobe triangulation, threat evaluation and weapon assignment.

The AMRAAM missiles used within NASAMS are identical to those used on fighter aircraft, thus yielding considerable rationalisation returns for the user.

www.kongsberg.com

H145M presented by Airbus Helicopters

(df) Another interesting helicopter will be the H145M presented by Airbus at the MSPO. The H145M is equipped with a modern digital glass cockpit, night vision goggle compatibility, and Airbus Helicopters’ advanced Helionix avionics suite with a 4-axis digital autopilot. Enhancements include an upgraded transmission system and incorporation of Airbus Helicopters’ signature Fenestron shrouded tail rotor for improved anti-torque control. For armed operations, the rotorcraft carries a mission computer, two rigid multi-purpose armament pylons that are easily removable, an infrared/TV electro-optical system, and a laser range-finder/designator/pointer. With its open system architecture, this innovative weapon system contributes to full situational awareness for the crew. Equipped with an incremental modular weapon system, the H145M can handle all types of operational scenarios, from conventional to asymmetric conflicts. Ballistic and guided weapons compatible with the H145M include 7- and 12-tube rocket launchers, a 20-mm. cannon pod, 12.7-mm machine gun pod and air-to-ground missiles. Growth potential exists for laser-guided rockets.

www.airbushelicopters.com

Black Hawk shown by Sikorsky

(df) Sikorsky will again show their Black Hawk (UH-60M) state-of-the-art military helicopter. The UH-60M culminates more than 30 years of technological advancement, improved performance and real world experience. This advanced Black Hawk serves dependably in the most extreme conditions found on earth. With the integration of the U.S. Army’s Future Combat Systems and automated aircraft health monitoring, the UH-60M provides superior vertical lift combined with modern control systems. One of the new capabilities is the successfully demonstrated optionally piloted flight of a Black Hawk helicopter, a significant step toward providing autonomous cargo delivery functionality to the U.S. Army. For the remotely piloted Black Hawk Sikorsky introduced its Matrix Technology, a major research programme, in July 2013 to develop, test and field systems and software that will improve significantly the capability, reliability and safety of flight for autonomous, optionally piloted, and piloted vertical take-off and landing (VTOL) aircraft.

www.sikorsky.com
Systems for land, naval and air forces from LACROIX

This year the LACROIX team will once again participate as an exhibitor during MSPO exhibition, one of the most important exhibitions in the military industry with Le Bourget, IDEX, Euronaval and Eurosatory. LACROIX, worldwide sector key global player, will showcase its latest products and pyrotechnics solutions.

Self-protection solution using cutting-edge technologies include:
- **Land**: systems & munitions for land platforms (MBT, AMV, APC, LAV). Discover GALIX AOS innovation (automated obscuration system from detection to reaction) using green NT8 munition.
- **Naval**: solutions using corner reflector technology and imaging infra-red: to protect all kinds of ships (fast attack, OPVS, corvettes & frigates).
- **Advanced airborne countermeasures**: manufacturer of conventional and spectral flares, chaff, but also aerodynamic flares, in all types of calibres:
  - for combat-jets (F-16, Mirage, Rafale...): LACROIX has been designing for more than 60 years for all generations of fighter aircrafts;
  - for helicopters (Apache, Black Hawk, Sea Hawk, Mi-8, H225M Caracal, Tiger): LACROIX will display its dual and kinematic flares (LIR 112 & 211) ensuring a high level of protection against latest generation missile seekers;
  - for large transport (Hercules C130, Airbus A400M...).

Another focus will be on pyrotechnics devices for safety & defence: warning & simulation signals and pyrotechnics systems for law enforcement, among others.

Meet LACROIX’ Team at the MSPO exhibition, Hall E Stand E41, French Pavilion. www.lacroix-defense.com

**NS 935 patrol ship**

Naval Shipyard Gdynia SA is the oldest of Poland’s existing shipyard. It will be displaying several of its novelties at this year’s MSPO, among them the NS 935 patrol ship.

The design of the NS 935 features steel hulls for safe, convenient and fast shipping. It has a transom stern with a platform for stocking chase and surveillance boats. Steel fenders are welded to the ship’s sides in order to provide protection in quay mooring operations or docking alongside another vessel. A two-storey light-alloy deckhouse is located in the mid part of the ship and includes both open and enclosed command posts.

The rear-end mounted mast carries radar and navigation gear. The new patrol craft is powered by two MTU diesel engines. Electric power is provided by two generators equipped with Caterpillar diesel engines and one 35 kVA harbour generator. The engine room is fully automated.

The display will also include 722-type landing vessel as well as the SAR search and rescue vessel.

www.navship.pl

**Norwegian CV90**

A highlight presented by the MSPO partner country Norway will be the CV90. Norway is actually upgrading and reconstructing 103 CV90 type armoured vehicles in combination with a new acquisition.

In this project BAE Systems will deliver a total of 144 new CV90 in various versions: 74 infantry fighting, 21 reconnaissance, 15 command, 16 engineering, 16 multi-role and two driver training vehicles.

The multi-role vehicles can fulfil different functions, including mortar carrier and logistic roles. The upgrade gives the existing CV90 additional protection, especially against mines, a remote controlled weapon station, rubber tracks and a sophisticated information system.

The new CV90 fleet is subject to a complete upgrade of the proven infantry fighting vehicle incorporating lessons learned from Norwegian, Swedish and Danish CV90 operations in Afghanistan. The vehicles’ new rubber tracks are combat-proven by Norwegian forces in Afghanistan. Also, the new CV90 will be fully digitalised.

www.baesystems.com
Polish Air Force Institute of Technology

(df) The Polish Air Force Institute of Technology will showcase, among others, the diagnostic simulator for an anti-missile system in virtual technology with augmented reality elements at MSPO. The procedural - diagnostic simulator has been designed to carry-out regular service as well as in-combat training of anti-aircraft missile sets. The device is part of the project: “Development and execution of procedural – diagnostic simulator of the anti-aircraft missile sets in virtual technology (Virtual Reality – VR) with elements of augmented reality (Augmented Reality - AR)".

Another highlight will be the flare technologies which include firing-cassettes which comply with the STANAG-4687 requirements for passive air defence of manned platforms. A prototype batch of K-811H cassettes has been put to qualifying tests, including in-flight tests on a W-3 helicopter. The display will include the prototype lot of TNZ-811H flares which has also been tested including in-flight tests with the use of W-3 helicopter, the technical documentation for trial cartridges and flares as well as the effectiveness unit for passive safety system efficiency. www.itwl.pl

F-35 at Lockheed Martin

(df) Lockheed Martin will again showcase its extensive product portfolio at MSPO. A special focus will be the capabilities presented by the F-35. At Lockheed Martin’s expo stand, having made an appointment, exhibition guests will be given a chance to use the cockpit simulator. Advanced fighter jets are now the basis of each country’s tactical military potentials. With constant technological improvements and innovations, the F-16 fighter has set the standard for the NATO multi-role aircrafts over the years. Now the F-35 Lightning II is among the world’s most advanced multirole combat aircraft, it offers completely new capabilities and interoperability for the NATO armed forces and other countries’ forces. With the stealth technology and the 360 degree situational awareness system, the jet is less likely to be detected. As a result it offers a good ability to infiltrate high degree risk areas. F-35 is versatile and can realize tasks previously assigned to specialized aircrafts with ground-attack equipped, as used in electronic warfare and ISR operations. www.lockheedmartin.com

Next generation wireless system from Axnes

(df) PNG is a wireless ICS extension for use both in rotary and fixed wing aircraft that integrates with any vendors’ existing ICS, and based on AXNES software defined digital radio technology. It provides both full duplex and secure communication. The system is highly ruggedised and has robust range and noise reduction capabilities that ensure robust reliable communication under any conditions. Outside crews may also remotely access other radio resources such as Tetra, tactical or health radios, on a separate PTT. A maritime AIS-SART is incorporated within the PNG transceiver. This may be activated by the outside crew if in distress, or remotely from the aircraft. The PNG transceiver incorporates GPS and outside crew position data is transferred to the aircraft and made available to display on other aircraft systems. PNG transceivers are dual band devices, incorporating a separate VHF band radio which enables outside crew to communicate with other resources. These may be mountain rescue teams or lifeboats and ships. The PNG system consists of one base station and a number of transceivers. A control panel installed on the flight deck or in the cabin manages wireless functions, and enables easy switching between predefined configurations in multireole aircraft. PNG is a system purposely built for aircraft operations and is certified according to aviation authority requirements as airworthy equipment. All systems elements comply with NVG class B standards, and will qualify in an NVG equipped aircraft. www.axnes.com
PIAP GRYF mobile roboter

(df) One of the many novelties presented by the Industrial Research Institute for Automation and Measurements (Przemyslowy Instytut Automatyki i Pomiarów – PIAP) at this year’s MSPO, is PIAP GRYF. PIAP is the first and biggest producer of high quality mobile robots in Poland. PIAP GRYF is an in-field reconnaissance robot also used for remote and inaccessible places. Its manipulator with 5 degrees of freedom with a gripping device allows to lift loads of up to 15 kg. The robot’s wheels can easily be removed, which reduces the robot’s dimensions and facilitates mission capabilities wherever space is limited. With its drives, the robot can manage uneven-terrain obstacles and slopes up to 45° angle. The robot is characterised by excellent manoeuvrability, low weight for easy transport and carrying. Owing to its modular design the robot allows for quick and easy mounting of additional equipment. the PIAP GRYF mobile robot is designed to work with a whole array of accessories including pyrotechnic ejectors (e.g. RE 70M3 Plus - Chemring, Proparms Recoilless 12.5 mm and 20 mm), a shotgun (e.g. Benelli), X-ray devices (e.g. Vision-X MK5) explosive trace detectors (e.g., M0-2M) fibre optic winders and remote explosives detonation unit.

www.antierryzm.com

Identification friend-or-foe

(df) The Israel company Thermal Beacon will display among others their IFF (identification friend-or-foe) technology at MSPO at booth ZC-9b alongside their partner CENREX. The MS-OMR (Multi Spectral, Omni, Medium Range) vehicle and helmet mounted is a unique infrared emitter, which radiates in the thermal spectrum (most efficiently at 3-5 micron) and does not emit radiation in the visible or the near infrared region. It is used as an identification device in the thermal spectrum region, the so called friend-or-foe identification. Battery lifetime exceeds three hours. All of the presented products are fielded and combat proven in the Israel Defence Force and many other countries around the world, some also have a NATO stock number. Thermal Beacon (a subsidiary of Goldtec Technologies) is a private company that develops and produces high-end innovative thermal optical IFF emitters and high power visible and infrared laser illuminators and pointers. The products are patented technologies that combine high performance with compact design. Thermal Beacon specializes in packaging and ruggedizing laser systems for use in adverse environment.

www.thermalbeacon.com

Radar and backpack satellite terminals from KenBIT

(df) KenBIT will put on display at MSPO its novelties, especially the battlefield reconnaissance radars. The ELM-2105 family of tactical ground surveillance radars (ELM-2105, ELM-2105ER, ELM-2105LR) is designed to provide 360° area coverage with the use of one rotating radar. ELM-2105 radars are capable of detecting and identifying a large number of targets. They are lightweight, all-weather movement detection radars designed to detect, alert and monitor manpower and vehicles movements in the observation area. The VSAT backpack satellite terminals will also be on display. They have been primarily designed for special forces units and reconnaissance detachments. Terminals can easily fit in suitcases or backpacks, they are ranked among the smallest and lightest terminals available in the market. The company KenBIT was established by former scientific staff of Warsaw Military University of Technology, the co-authors of several research and development works (i.a. single channel subsystem, multi-channel simplex radio access, mobile composite mast as well as multifunctional handset used for PR4G radio station and ZT data exchange network).

www.kenbit.pl
**GECO mission system from Inzpire**

(df) The British defence company Inzpire Limited will be attending MSPO for the first time this year as they bring a team of experts to the show to discuss their GECO mission system, as well as their range of defence managed services. Designed by warfighters for warfighters, GECO is an intuitive and easy to use system, offering touchscreen functionality that works with a gloved hand. In its most basic configuration GECO provides an integrated GPS, digital moving map and satellite imagery that can improve the effectiveness and speed of mission planning, rehearsal, execution and de-brief for both air and ground operations. Additional capabilities, or apps, can be incorporated and run simultaneously to meet mission, platform and role specific requirements. GECO (Air) is operationally proven, and is in frontline operational use with the British Armed Forces and internationally on over 15 aircraft types. www.inzpire.com

**1st European Geoinformation Symposium and Exposition**

AFCEA Europe and the Zentrum für Geoinformationswesen der Bundeswehr (ZGeoBw) are jointly organizing the 1st European Geoinformation Symposium and Exposition at the Maritim Hotel Stauffenbergstrasse 26 in Berlin on October 20-22, 2015. The event will be held in the framework of AFCEA Europe’s famous TechNet Europe series and under the patronage of the German Ministry of Defence. As the theme “Urbanization, Migration, Disaster Relief: Key Challenges of the Future” is not limited to a military involvement alone and comprises a much broader spectrum of governmental responsibilities and international cooperation the conference will be supported by a broad spectrum of governmental and research entities as well as international organisations. Some 400 decision makers and experts from the US, nearly all European governments and subordinate agencies, from EU/NATO bodies, research institutes, disaster relief organisations and industry are expected to participate. www.afceaeurope.org

**Rugged protective boxes from Leafield Cases**

(df) From UK Leafield Cases, a designer, manufacturer and supplier of rugged, protective, plastic waterproof cases will be present at MSPO. Formerly known as Linpac Environmental, the Company has many years’ of experience in the production of custom cases and packaging. Among others the company will showcase their Aegis cases, which are engineered to meet exact or challenging requirements. These cases are rotationally moulded from high impact, UV stabilised, and feature SMP material for long life durability. They have substantial, controlled wall thickness with reinforced corners and edges with up to 20% greater material thickness for increased strength and impact resistance for even challenging transportation. www.leafieldcases.com
Advanced defence systems from Rafael

The Israeli company Rafael Advanced Defense Systems will be displaying among others at MSPO:

STUNNER – Advanced multi-mission interceptor against a variety of asymmetric short-range tactical ballistic missiles, inexpensive large calibre rockets, cruise missiles and unmanned aerial systems.

IRON DOME - Combat-proven active defence system against short range artillery rockets with more than 1,500 combat interceptions.

MIC4AD – Modular, integrated C4I air & missile defense system.

I-DERBY ER – Innovative active radar air-to-air missile, providing aircraft with outstanding and effective performance in short range up to long BVR intercepts. The missile incorporates the innovative I-Derby software-defined RF seeker, combined with ranges of up to 100 km.

TYPHOON MLS-ER&NLOS - Complete naval missile system that includes Spike-ER&NLOS missiles, launchers, an electro optical director and a fire control system.

Vehicle observation system from ATM

(Atm) ATM ComputerSysteme GmbH (ATM) from Constance (Germany) will present the Vehicle Observation System (VOS) for enhanced perception of dangers and improved command capability at MSPO. Not only when facing asymmetric threats, the protection of soldiers and vehicles is often a matter of seconds. Camera systems help the driver, provide support when operating the weapon station and also increase situational awareness. Because these cameras have mostly been stand-alone solutions there have been problems with the timely processing of the relevant information. The Vehicle Observation System from ATM now links all camera systems via a central computer interface, creating a cross-system view concept that enables different camera images to be accessed from every vehicle workstation with a display. Either an analogue or a digitised image is shown on the display depending on the role. The VOS has a modular design and is suitable for logistic and combat vehicles alike. Additional sensors and systems can be integrated with the system.

Navigation systems and retrofits

(df) Honeywell will be displaying a variety of products including the TALIN navigation system, the F-124 engine which powers the M346 trainer aircraft, as well as variety of retrofits, modifications and upgrades (RMUs) for aircraft such as the F-16. TALIN is a highly accurate, shock-stabilised position and pointing inertial navigation system designed for use on a wide range of military and commercial surface platforms with or without the use of GPS. Utilising the same Honeywell Ring Laser Gyroscope (RLG) and Quartz Accelerometer (QA) technologies proven in both commercial and military navigation applications, TALIN fits especially into GPS-denied environments. The performance is demonstrated on a daily basis by more than 15,000 systems fielded on more than 60 military platforms worldwide.

Next generation welder

(df) An interesting novelty shown at MSPO is the first portable, battery-run welder equipped with a computer and software designed to facilitate the welder’s work, regardless the conditions. The welder will be presented by GOWELD MIL BROCO at the Warsaw’s Schron Defence’s expo booth. The welder can connect to the vehicle by way of a NATO slave plug or conventional battery clamps. The welder provides high-quality welds in locations without regular power supply. Schron Group was founded in 2012, it was established by a former soldier of special military units.

www.schron.com.pl