EU Defence Capabilities

Since the 1990s, the creation of common capabilities has been considered an important step towards an integrated defence policy. Nonetheless, meaningful EU defence capabilities are still far from reality.

Giulia Tilenni
The European Union Global Strategy (EUGS) released in 2016 proposes to raise the EU ambition in the defence domain. The idea is that EU crisis response to external threats can be quick and effective only if the organisation strengthens its international role. The EU should be able to speak with one voice and to express a credible, common military potential. This means EU member states should provide the organisation with dedicated military instruments to rapidly deploy when a crisis erupts.

The Helsinki Headline Goals describe in detail how EU defence capabilities should look like. According to those documents, the EU should have been able to deploy self-sustained forces up to corps levels (15 brigades or 50,000-60,000 troops) and related supports within 60 days from the eruption of a crisis. Forces were expected to face five prearranged scenarios – separations of parties by force; stabilisation, reconstruction and military advice to third countries; conflict prevention; evacuation operations; assistance to humanitarian operations.

EU Capabilities to Be?
As top-down initiatives are stuck, a number of EU bottom-up joint programmes have been developed in the last decade to fill capability gaps at the European level and to stimulate governments to resume EU-level ambitions. Nevertheless, a bottom-up approach means that EU programmes are the outcome of continuous compromises among participating member states. Their planning/development lasts for long periods, thus affecting negatively the response to operational requirements. Yet they are pretty significant in Europe. In particular, there are four capability programmes that have been developed within the European Defence Agency framework by a sufficient number of members to be called “EU programmes”:

The Air-to-Air Refuelling (AAR) programme, which should optimise existing capabilities, enhance A400 AAR capabilities and increase the overall EU tanker capability by 2020. To date EU countries can field 42 tankers of 12 different types (the US have +550 tankers of four types).

The Remotely Piloted Aircraft Systems (RPAS) programme is a comprehensive programme including RPAS integration in non-segregated air space, the harmonisation of airworthiness certification for military RPAS, support to the development of a European MALE (Medium Altitude, Long Endurance) RPAS to be operational by 2025. The Remotely Piloted Aircraft Systems (RPAS) programme is expected to prepare the next generation of EU-tailored satellite communi-
EU Capabilities And The EU Political Weight
According to the 2016 EU Global Strategy (EUGS), the EU should enhance its external role and its ability to promptly respond to international crisis by 2020-2025. However, it is unlikely that this scenario will ever take place in this timeframe for at least two main reasons. First, joint programmes are supposed to fill existing capability gaps (highlighted since 2001) in the same timeframe, which is too short for accomplishing significant military programs. Second, the tools already available in theory have never been implemented in practice. On the one hand this could be explained by the economic constraints and the sub-optimal allocation of defence budget, on the other the lack of a stable and strong political willingness has a crucial role.
If the situation remained unchanged, the EU would be unable to advance its weighted weight at the international level. Even if member states decided to pledge more political capital to a stronger EU external role, the EU would remain a secondary actor due to the lack of credible military capabilities.

What’s Next
On paper, embryonic EU military capabilities might be already established in the short-term through the existing tools, such as Permanent structured cooperation and battlegroups. In order to gain some degree of strategic independence from NATO and the US, this cooperation should start from gap fillers. The aforementioned EDA programmes can be read as pushing factors in this sense. To sum up, if the EU wanted to pursue for real the “level of ambition” set by the EUGS, it should change its approach to defence cooperation in order to steer its policies towards equilibrium between best options and decision-making trends.

Author:
Giulia Tilenni is an analyst for international affairs based in Paris,
Innovation Made in Germany
(gwh) At this year’s Paris Air Show, Germany is the third largest exhibition nation after France and the USA. According to the German Aerospace Association (BDLI), Germany is at the cutting edge of aerospace technology. One out of every six new passenger aircraft produced globally is being delivered in Germany to airlines from around the world. Moreover, every new aircraft built anywhere in the world contains German technology, which highlights the technological advances of our supplier industry. Similarly, our country is home to leading manufacturers in satellite technology, military aviation, engines and helicopters. In short: thanks to innovation, Germany is one of the leading aerospace nations in the world.

Paris Air Show is a touchdown for business, industrial cooperation and networking. At this global business hot spot, 35 BDLI members will be united under the roof of the more than 2000-square metres BDLI Joint Pavilion in Hall 2C/2A. Another 18 will have individual displays.

With its strong presence, the German aerospace industry at the same time promotes the ILA Berlin Air Show, which will take place from April 25 to 29, 2018. ILA has become synonymous with Innovation and Leadership in Aerospace and will again be taking a close look at topics of major importance for the future of our globally active sector.

We are looking forward to seeing you at this year’s Paris Air Show in Hall 2C/2A – and come and visit us next year at ILA Berlin Air Show!

www.BDLI.de

Airbus at Paris Air Show
(ck) At the Paris Air Show Airbus will be showing a wide range of technologies, products and services, including their commercial and military aircraft to helicopters and space systems. For the first time Airbus will publicly showcase the A321neo and the latest member of the A350 family – the A350-1000.

Airbus Defence and Space’s exhibits will include the A400M, the C295 and the Eurofighter Typhoon. There will also be a collection of unmanned air systems including the Harfang, the DVF 2000 VT Aliaca, the DVF 2000 ER Arrano and the Quadcruiser.

Airbus will also demonstrate its satellites, highlighting recent successes such as the first all-electric satellite in the three-tonne class, EUTELSAT 172B, or PerúSAT-1, which set a new benchmark in terms of delivery time.

Airbus Helicopters will demonstrate the H130, the H135 equipped with the HeliOnix digital avionics suit, the H145M outfitted with HForce and a French Army Tiger helicopter. Airbus Helicopters will also showcase its new high-speed demonstrator for the future of vertical take-off and landing (VTOL) at the Clean Sky booth. At the Air Lab booth Airbus has the VSR700 mock-up on display to demonstrate its vision of unmanned military flights.

You will find the Airbus experts at the end of chalet Row A.

www.airbus.com

Boeing at Paris Air Show
(ck) Boeing will put a 737 MAX 9 flight test airplane on display at the Paris Air Show. The 737 MAX 9 completed its first flight in April. The 737 MAX is the fastest-selling airplane in Boeing history, accumulating more than 3,700 orders to date from 87 customers worldwide. Boeing also will bring to the show a 787-10 Dreamliner flight test airplane. The 787-10 is the newest and largest model of the 787 family.

The US Department of Defense will display several Boeing platforms: the P-8A anti-submarine and anti-surface warfare aircraft, the V-22 multirole tilt-rotor aircraft, the AH-64 Apache attack helicopter, and the CH-47 Chinook heavy-lift helicopter. Additionally, Boeing customers and partners will bring several aircraft to Le Bourget. Qatar Airways plans to present a 777-300ER, showcasing its newly designed business class interior.

Get more information at the Boeing Chalet in the chalet rows at A332.

www.Boeing.com
Antonov transports across the Andes

(ck) An Antonov airplane AN-124-100 carried 24 tonnes load in less than an hour from Chile to Argentina after bad weather closed roads in the region. The Antonov airplane transported two mining filtration units from Santiago, Chile to Mendoza, Argentina in one of its seven AN-124-100 aircraft, in 39 minutes. The cargo included two large piping units, measuring 12 metres long, four metres wide, and approximately 3.6 metres high. The AN-124-100 on-board crane system, which has a maximum lift capacity of 20 tonnes, allows for safe loading and unloading of the cargo.

"No special adjustment or external equipment was required for what was one of the shortest flights we have operated in a decade," said Martin Banns, Commercial Executive, Antonov Airlines. "We were able to lift the cargo straight off the trailers with the aircraft’s internal cranes."

The airplane was operated by Antonov Airlines. Antonov Airlines operates a fleet of seven AN-124-100 aircraft, including two modernised -150M variants, with a payload of up to 150 tonnes, together with the AN-22, with a payload of 60 tonnes, the AN-225, the largest aircraft in the world, which has a payload of 250 tonnes, and smaller AN-26 and AN-74 aircraft. Antonov Company, the design, manufacturer, operation and maintenance authority of Antonov Airlines’ fleet, recently announced it is working with Ukrainian and Western suppliers for its fleet modernisation programme.

www.antonov.com
www.antonov-airlines.com

Diehl Defence

(ck/gwh) This year, Diehl Defence will organise a joint exhibition stand with Diehl Aerosystems at the Paris Air Show. Diehl Defence is presenting system solutions for ground-based air defence and guided missiles for fighter jets and combat helicopters.

Diehl Defence combines the Diehl Group’s business activities in defence and security as an important partner of the German and international armed forces providing advanced guided missiles, ammunition and system solutions for ground-based air defence complemented by products for reconnaissance, training and protection. Moreover, high-quality infrared modules, fuzes, special batteries and packaging systems are essential key components.

The new HPEM counter UAS effector for protection against small unmanned aerial vehicles is making its debut at the Paris Air Show.

Diehl Defence will also showcase the laser-based DIRCM self-protection system (J-MUSIC) for the German Air Force’s Airbus A400M military transport aircraft.

Diehl Aerosystems is a first-tier supplier for avionics solutions and preferred partner for cabin integration in the aerospace industry. The integrated product portfolio in the field of aircraft interiors consists of interior lighting systems, air distribution systems, crew rest compartments, lavatories and refreshment rooms, floor-to-floor lining as well as galleys - also available as retrofit solutions.

Diehl Aerosystems’ worldwide customer service guarantees the full range of commercial and technical support. Diehl experts will be available at Diehl-booth B317/B257 in Hall 2C.

www.Diehl.com

ESA at the Paris Air Show

(ck) The European Space Agency (ESA) will present its programmes in an exhibition pavilion between the two full-scale models of the Ariane 1 and Ariane 5 launchers. The ESA pavilion will feature European missions and projects across all space domains, with a focus on recent achievements and upcoming endeavours. Jan Woerner, ESA Director General and all ESA directors, will give a presentation on “Space 4.0”, an era in which the space sector evolves from being the preserve of the governments of a few spacefaring nations to a new reality, with an increased number of diverse space actors around the world, from public to private, from local to global, from academia to citizens.

ESA will be highlighting projects ranging from space science and technology to future plans for human spaceflight, robotic exploration and from space transportation systems to space-based services and applications.

ESA Exhibition Pavilion near the permanent Air and Space Museum

www.esa.int
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Learn More at www.flir.com/blackhornet
Elbit will develop Panoramic Cockpit Display Units for the F-35
(ck) Elbit Systems of America was awarded a contract by Lockheed Martin Aeronautics to develop a cockpit display replacement for the F-35 aircraft. The development contract is for the Technology Refresh 3 Panoramic Cockpit Display Unit. The value of the contract has not been disclosed. The award expands Elbit’s work on the F-35, which already includes power amplifiers, structures, and sustainment work. In addition, Elbit, together with Rockwell Collins, also supplies the F-35 Helmet Mounted Display System, through their joint venture Rockwell Collins ESA Vision Systems (RCEVS). These efforts reinforce Elbit’s position as a provider of cockpit and pilot interface solutions that improve pilot situational awareness and mission effectiveness.

“Elbit Systems of America continues to demonstrate that we are a trusted and highly-capable partner for the F-35 programme,” stated Raanan Horowitz, president and CEO, Elbit Systems of America. “We are committed to ensuring the success of our customer and the pilots who depend on our equipment to accomplish their mission.”

Elbit Systems has experience in military and commercial avionics design, development and production. The company offers displays to enhance the pilot’s situation awareness and mission effectiveness. The company’s solutions include lightweight displays in various sizes with intuitive user interface and high-definition touch screens, displays that provide extensive processing and interfacing capabilities, including embedded digital mapping, high-definition head-up displays with a large field of view and large eye motion box, full night vision goggle capabilities and virtual embedded training capabilities. Visit Elbit System at Chalet 200 www.elbitsystems.com www.elbitsystems-us.com

Drone protection by ESG
(ck) ESG Group is a civil and military approved aviation organisation that designs, develops and integrates customised avionics and IT systems. They also provide independent technology and process consulting services. Military, public authorities and industry have trusted the ESG-expertise for 50 years.

ESG is not only a German engineering company producing aviation devices for the Bundeswehr but also a leading company for the development, integration and operation of security-relevant electronic and IT systems. ESG has been developing customised deployment, mission and support systems for manned and unmanned aircraft and their ground systems along with command & control and special deployment systems. ESG can assume end-to-end responsibility for the operation of UAVs and drones.

ESG will demonstrate its modular drone detection and defence system GUARDION at the Paris Air Show which consists of various sensors and effectors manufactured by Rohde & Schwarz and Diehl Defence which are networked to an integrated system with ESG’s central command & control system TARANIS. Additionally, ESG will present its part in the “Open Skies” project and the flexible and interoperable DACAS Ground Kit (Digitally Aided Close Air Support) solution for multinational missions.

Visit ESG at booth C353 in the German Pavilion in hall 2C www.esg.eu

PTC physical and digital world
(ck) PTC provides robust technology for the Internet of Things (IoT). PTC’s leading IoT and Augmented Reality platform and software solutions unite the physical and digital world, thereby giving shape to a new way of developing, operating and servicing products.

PTC will focus on digital transformation in aerospace and defence. This year’s highlights include “Experiences with Enhanced Reality” and a demo on “Integration of Systems in Lifecycle Management Processes”.

About 300 companies and government organisations in the A&D segment rely on PTC’s expertise in design, development, service and operation. At the Paris Air Show, PTC’s focus is on digital engineering, intelligent & networked operations, and on Industry 4.0 / the “Factory of the Future.” PTC will present its technology portfolio including networked Product Lifecycle Management (PLM), and in operation with the ThingWorx platform for the IoT combined with Service Lifecycle Management (SLM).

You will find PTC in the VIP Chalet #33. www.ptc.com/pas17
Guardion Anti-Drone System

(ck) Three companies ESG, Diehl Defence and Rohde & Schwarz offer solutions for detecting and defending against drones. Drones pose a security risk at public events and to high-risk infrastructures and facilities such as airports, industrial and military sites, plants, and correctional facilities. The three companies have already gathered experience in anti-drone defence during the 2015 G7 Summit in Elmau and the U.S. presidential trip to Germany in 2016. Now the companies want to provide bundled solutions in the fields of radar, radio monitoring, electromagnetic countermeasures, command and control systems and position mapping.

In light of the fact that sales are booming and anyone can use them, countering drone threats has become a primary concern. With this in mind, ESG, Diehl Defence and Rohde & Schwarz will cooperate in drone defence. The Guardion drone defence system combines the scalable solutions customized to customer requirements to detect and defend against threats posed by drones. Guardion focuses on integrating electronic detection, verification and countermeasures and connecting them to a position mapping and command and control tool.

Guardion consists of the HPEM counter UAS effectors from Diehl Defence, R&S ARDROS-NIS from Rohde & Schwarz and the TARANIS command and control and position mapping system developed by ESG. The trend toward intelligent drones also requires an effector that civil forces can use against autonomous systems, i.e. systems that are not dependent on radio signals or GPS for navigation. "Multiple intermeshed measures must be employed to ensure reliable protection against drones. The best way to meet this challenge is to integrate different, modular and scalable, cutting-edge technologies from various leading companies into a total solution," stated Christoph Weber, Head of Defence & Public Security at ESG, on behalf of the cooperation partners. Dietmar Vahl-diek, Executive Vice President Monitoring and Network Testing at Rohde & Schwarz, adds: "For many customers, it is important to receive early warning of potential threats. Detecting radio signals from remote control units therefore plays a key role. Security forces can respond even before the drone is in the air."

www.Guardion.eu

ARMS AND SECURITY
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INTERNATIONAL EXHIBITION CENTRE
Ukraine, Kyiv, Brovars’ky Ave, 15
"Livoberezha” underground station
Latest Technologies for Air Power by MTU

(ck) MTU presents a cross-section of its portfolio at the International Paris Air Show. MTU focuses on commercial aviation, technology and maintenance. Its innovative technologies, expertise and quality make MTU Aero Engines a preferred partner of the aviation industry.

The Paris Air Show portfolio includes R&D work, high-tech manufacturing and tailored aftermarket services. In addition to engines and components, the MTU booth will also allow to look at the future of digitalisation for engine development and manufacturing. A key part of the trade fair presence is the GTF holography box, an interactive communication tool for the Geared Turbofan Technology (GTF) technology and maintenance.

MTU’s masterpieces are the high-pressure compressor and the high-speed low-pressure turbine for the Geared Turbofan engine. Both components incorporate recent technologies. MTU is also bringing two world-class repair processes to Paris: V2500 vane braze repair and V2500 drum repair. These two processes exemplify how MTU draws on the expertise gained during development and production of numerous engine programs when developing new repair techniques.

MTU experts will be available in Hall 2A, C254/Chalet Row B, 73.

www.mtu.de

SPIKE LR II Precision-guided Missile

(ck) Rafael Advanced Defense Systems will unveil SPIKE LR II, a new 5th generation variant of the SPIKE family that can be fired from vehicles, helicopters, ships, and ground launchers. The new missile will be presented for the first time at the Paris Air Show.

SPIKE LR II is an advanced multipurpose missile, weighing only 12.7 kg, designed for modern warfare with almost full familiarity to the SPIKE Missile legacy and can be launched from any SPIKE Launcher. For increased lethality, SPIKE LR II includes two advanced warhead configurations: a tandem HEAT warhead configuration, increasing armor penetration capability by more than 30 percent, and a new multipurpose blast warhead, which includes controlled fusing (by the gunner) for control of the desired effect.

SPIKE LR II has a range of 5.5 km when fired from ground launchers and up to ten km when fired from a helicopter (using alternative option of RF Data link). The SPIKE LR II has a modern electro-optical seeker which includes an un-cooled IR sensor and a HD color day sensor.

SPIKE LR II was designed against new modern targets with low signature and time-sensitive characteristics. To counter this SPIKE LR II includes an embedded IMU (Inertial Measurement Unit) for missions of third party-target allocation, allowing the firing of the missile to grid target coordinates, including advanced armor and protection systems. The SPIKE LR II is one of very few missiles with an inherent CAPS capability.

You will find Rafael at the static display A8.

www.Rafael.co.il

Schiebel Camcopter

(ck) Schiebel’s Camcopter S-100 Unmanned Air System (UAS) is an operationally proven capability for military and civilian applications. The Vertical Takeoff and Landing (VTOL) UAS requires no prepared area or supporting equipment to enable launch and recovery. It operates in day and night, under adverse weather conditions, with a beyond line-of-sight capability out to 200 km, over land and sea. Its carbon fiber and titanium fuselage provides capacity for a wide range of payload/endurance combinations up to a service ceiling of 18,000 ft. In a typical configuration, the Camcopter S-100 carries a 75 lbs/34 kg payload up to 10 hours and is powered with Aviation Gasoline or JP-5 heavy fuel.

High-definition payload imagery is transmitted to the control station in real time. In addition to its standard GPS waypoint or manual navigation, the S-100 can successfully operate in environments where GPS is not available, with missions planned and controlled via a simple point-and-click graphical user interface.

The high-tech unmanned helicopter is backed by Schiebel’s customer support and training services and holds an impressive track record of supporting naval customers, with missions completed on over 30 different ships on all the world’s oceans, in every environment from the tropics to the Arctic.

Come in touch with the Camcopter and Schiebel experts in hall 4 booth B30.

www.schiebel.net
Rohde & Schwarz cutting-edge portfolio

(gwh) Rohde & Schwarz, the specialist in airborne communications, will showcase its current solutions at the international aviation and aerospace trade show in Le Bourget. The highlight will be the R&S MR6000A, the world’s only military airborne transceiver that also meets the civil aviation certification requirements of the European Aviation Safety Agency (EASA).

The R&S MR6000A from the successful R&S M3AR VHF/UHF airborne transceiver family is the world’s only airborne transceiver to meet both military and civil airborne communications standards. The development process was successfully validated and verified by Airbus and EASA, earning the EASA Statement of Technical Satisfaction. The software defined R&S MR6000A also features highly secure embedded encryption algorithms for protected military communications. Reference platforms include the European A400M transport aircraft along with rotary-wing aircraft such as the H145M light utility helicopter. More than 7,000 software defined radios from the R&S M3AR airborne transceiver family have been delivered so far.

All software defined radios from Rohde & Schwarz offer customers outstanding flexibility in operational deployment. This also applies to radios installed at military or civil air traffic control ground stations to provide secure ATC communications.

Rohde & Schwarz will showcase its portfolio at the Paris Air Show in hall 2A, German Pavilion, booth B286.

For more information, visit https://signals.rohde-schwarz.com.

We would also like to welcome you at the booth of ESG Elektroniksystem- und Logistik GmbH in hall 2C (C353), where Rohde & Schwarz, ESG and Diehl Defence will present a joint solution for the protection against dangers arising from the unauthorized use of drones. The Guardian drone defense system integrates customized, scalable solutions of the three partners in order to reliably detect and defend against drones.

For more information, visit: www.Guardion.eu.
Cirit und MAM-L Missiles
(ck) Roketsan will display in Paris amongst others three multipurpose-missiles to be launched from aerial and land vehicles. The expanded capabilities of its Cirit laser guided missile include the new thermobaric warhead added to its options multi-purpose and high explosive. Cirit has the longest range in its class. Roketsan is working on integrating the Cirit to the Tiger Helicopter. It is already being used on the T-129 ATAK and AH-1 Cobra attack helicopters. Further integrations are underway to light helicopters H135M and H145M and to the C295 Gunship Aircraft. The Cirit missile can also be integrated to land vehicles. Cirit is terminally guided with a semi-active laser seeker. Roketsan will also put its Stand-Off Missile (SOM) on display in Paris. The air-to-surface cruise missile against defended stationary and moving land/surface targets is adaptable to various missions due to its open architecture software. SOM-A and SOM-B1 defeat the targets by a high explosive blast fragmentation type warhead, while SOM-B2 and SOM-J carry a dual stage tandem penetrator and a semi-armor piercing type warhead. The Roketsan Smart Micro Munition (MAM-L) increases the efficiency of air platforms with low payload capacity, especially that of unmanned aerial vehicles (UAV). MAM-L is a variant of the laser guided L-UMTAS (Long Range Anti-Tank Missile System) also developed by Roketsan. MAM-L glides up to 8 km in the air without a rocket motor and has already been integrated to the Bayraktar and Karayel UAVs currently in use by the Turkish Armed Forces.

The MAM-L comes with a high explosive fragmentation warhead against soft targets or a tandem high energy anti-tank warhead against heavy armored targets. Visit Roketsan at booth G321 in Hall 1.

www.roketsan.com

General Atomics and Spezialtechnik
(gwh) General Atomics Aeronautical Systems (GA-ASI) will exhibit in the US International Pavilion in Hall 3, booth B-132. GA-ASI is part of the global network of market-leaders in the high-technology sector which also includes Spezialtechnik Dresden GmbH. The aviation business unit of Spezialtechnik supports GA-ASI to market products in European countries. Spezialtechnik will be displaying a full-scale model of the Advanced Cockpit Ground Control Station. The cockpit gives the pilot full control on the UAS, providing communication, information on flight status, live pictures and other sensor data. Moreover, Spezialtechnik will be ready to discuss its MALE UAS MQ-9B SkyGuardian, whose design allows operation in European air space and expanding mission sets, including all-weather imagery, maritime and electronic surveillance, airborne communications networks, and NATO-intelligence integration.

www.ga-asi.com _ www.spezialtechnik.de

Connecting at the Speed of Flight
(ck) Today’s aircraft are more connected than ever before to make flight more efficient and safe. Pilots and ground crews require more information at faster speeds to manage increasingly complex aircraft systems. TE Connectivity (TE) has developed technologies with reliable performance in harsh environments to make air travel faster and more efficient. TE designs components for sophisticated avionics packaged in smaller, lighter configurations to control and manage communications, on-board computers and multiple subsystems throughout the platform. TE is developing avionics architecture to collect and distribute information throughout the aircraft within a standardized modular format. TE component interconnects and designs provide reduced size and weight solutions while meeting increasing demands for higher bandwidth and high-speed connectivity. This includes electrical wiring interconnection systems (EWIS), high-speed board level and I/O connectors and backshells, high-speed cable and cable assemblies, switching / solid state and board level relays, sensors, lightweight composite enclosures, antennas and repair products.

The Mini Modular Rack Principle (MiniMRP) distributed avionics system increased design flexibility in existing architectures in a smaller, lighter package. The MiniMRP provides standardized modules that can be easily deployed through an aircraft. TE’s interconnect, relays, fiber optic and sensor solutions have helped the aerospace industry to increase performance by saving space, reducing weight, increasing bandwidth, and managing power. You will find TE Connectivity in hall 2B, booth 32.

www.te.com
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corpmkg@iai.co.il

SEE US AT PARIS AIR SHOW 2017 Chalet A206, Israel Area
**Textron Systems**  
(ck) Textron Systems will exhibit its unmanned aircraft systems (UAS), smart weapons, and its command-and-control products at the Paris Air Show.  

In the area of UAS, Textron Systems will display its tactical unmanned aircraft system (TUAS). Building upon a family of TUAS with more than one million flight hours, the latest Textron Systems’ TUAS offers extended capabilities. Textron Systems will also display its Aerosonde Small Unmanned Aircraft System (SUAS), which offers multi-mission performance in military land-and-sea based applications. The Aerosonde is equipped for real-time, full-motion video and communications relay within a single flight, and offers space and power to integrate additional capabilities. Aerosonde SUAS conducts more than 6,500 flight hours each month for customers around the world. Due to its success, Textron Systems developed a hybrid-quadrotor variant known as the Aerosonde HQ, which will also be on display in Paris. This configuration combines the vertical takeoff and landing (VTOL) capabilities of a multi-rotor platform with the efficiency and speed of the Aerosonde SUAS fixed-wing aircraft. The Aerosonde HQ features an eight-hour endurance and 10,000-foot service ceiling. The system incorporates the Lycoming EL-005 heavy fuel engine. In the area of smart weapons, Textron Systems will exhibit its G-CLAW and Fury small Precision Guided Munitions (PGM). The lightweight G-CLAW precision guided weapon system offers flexible delivery options from various aircraft systems and multi-mission employment options for land and sea targets. The Fury PGM delivers strike capability against either static or moving targets. This small, lightweight glide weapon is designed for carriage on multiple platforms, including tactical and Medium Altitude Long Endurance (MALE) UAS. Both GCLAW and Fury weapons employ an inertial navigation system/GPS navigation combined with semi-active laser terminal guidance and are accurate to 1-meter circular error probable (CEP). Textron-showcasing takes place at the static display A4.  

**3D-Audio / Active Noise Reduction**  
(ck) At this year’s Paris Air Show, the Danish company Terma displays the 3D Audio and Active Noise Reduction solution in collaboration with BAE Systems. The 3D-Audio and Active Noise Reduction is integrated with BAE Systems Striker II Helmet-Mounted Display. Visitors can experience the Striker II Helmet-Mounted Display up close. 3D Audio/Active Noise Reduction enhances situational awareness and survivability while reducing stress and fatigue for the pilot. Terma is the designer of the renowned ALQ-213 Electronic Warfare Management System which for more than 25 years has constituted the heart of almost all Terma EW solutions and has been sold to customers across the globe. The system is fielded on +2.500 aircraft. Leading F-16 countries operate the system across their fleets of aircraft. On the display is the pylon-based Missile Warning System solution, the ALQ-213 EW Management System for F-35 and others types of aircraft. Installation is done on pylons or pods rather than on the aircraft structure, which reduces aircraft down time considerably and enhanced protection is provided without loss of weapon stations. On display are also Terma aircraft self-protection solutions in a virtual reality set-up. This includes aircraft survivability equipment fielded on F-16’s, light attack aircraft, CH-47 Chinook and AH-64 Apache helicopters. Visit Terma at Booth E-16 in Hall 3.  

**Cobham to Exhibit at Paris Airshow**  
(ck) Cobham will introduce a “Virtual Refueling” simulator which can simulate accurate real-time hose and drogue behavior within a computer-generated aerial refueling scenario. Cobham will also demonstrate its Physiological Event Detection technology, a life support system to predict and prevent hypoxia-like symptoms before they occur. Rare but dangerous physiological events continue to impact aircraft fighter pilots. Cobham developed a solution to protect the pilot from physiological events by integrating a technology into it. Cobham’s new RT-7000 tactical radio is a panel-mounted radio that satisfies all voice and data communication needs. A system provider for intercoms and integrated audio panels, the radio combines multiple audio and radio control functions in a single panel. Visit Cobham at booth E156 in hall 2B.
ESD SPOTLIGHT

Thales with Defence-, Aerospace- and Space-Zone

(gwh) This year’s exhibition pavilion will focus on Thales’ ability to help its customers to think smarter and act faster – mastering ever greater complexity along the way of critical decisions.

Dedicated digital Defence, Space and Aerospace Experience Areas are at the centre of the pavilion. Visiting delegations and invited partners will receive initial briefings and unique demonstrations of Thales capabilities around the world.

Several zones will underline Thales ability to design and deliver extraordinary high technology solutions. The Defence zone will showcase Force Command & Coordination, Force Readiness, Force & Country Protection as well as Power Projection & Unmanned solutions. As an example, the Ground

USA Partnership Pavilion

(ck) For many years, Kallman Worldwide, Inc. has been organizing the US presence at the Paris Air Show. Most of the 350 US-companies in Paris will exhibit alongside with the new USA Partnership Pavilion. In addition, many US civil and military aircraft will be displayed during the show. “No person, no company, no country succeeds in isolation. Now more than ever, success in international trade comes from partnership and teamwork,” CEO Tom Kallman said. “Now into our third decade at the Paris Air Show, the new USA Partnership Pavilion builds on that foundation to help position U.S. companies to advance our nation’s leadership in the global economy. Many of our American exhibitors – from publicly traded stalwarts to small- and medium-sized enterprises (SME’s) – already have significant sales and partnership opportunities in the global marketplace. In the years to come, many more will.”

The US Aerospace Industries Association (AIA) is a sponsor of the USA Partnership Pavilion with 36 AIA member companies on board as exhibitors. AIA is also an advocate for the long-term, large-scale benefits of bilateral, multi-national business development. “The American aerospace-and defense industry is proud to work with partner and allied nations to advance the cause of global security and economic prosperity,” said AIA President and CEO, David Melcher. Melcher added, “Venues like the USA Partnership Pavilion also provide us the opportunity to highlight the fact that small- and medium-sized companies in the supply chain represent 56 percent of the value of all U.S. aerospace and defense exports. They are our industry’s and our country’s essential exporters.”

You will find the USA Partnership Pavilion in Hall 3.

www.kallman.com

Antonov An-132D Cargo Airplane

(ck) The aviation company Antonov, a subsidiary of the Ukrainian state-owned company UkroboronProm, will show the newest An-132D. The aircraft was developed in cooperation with world-leading aerospace companies. There will be demonstration flights of An-132D during the Air Show as well as presentations of other Antonov programs.

The An-132 is designed for short distance and medium-range routes. It is capable of performing a wide range of tasks on transportation. Different cargo cabin configurations are available. The aircraft will have a cruising speed of 500 km/h and a maximum cruise altitude up to 9,000 m with a maximum payload up to 9.2 tons.

An-132D was created in record time. The program was launched in May 2015 and the aircraft hit the sky this year. It has no Russian components and is the result of an international cooperation with partners like Honeywell, Pratt & Whitney Canada, Liebherr-Aerospace Toulouse SAS, Dowty Propellers.

You can talk to Antonov experts in Hall 6, booth A54.

www.ukroboronprom.com.ua
**In-Flight Tuning**

(gwh) ZF Luftfahrttechnik GmbH (ZFL) has a history of more than 100 years based on its roots in the aviation industry by the production of gearboxes for airships. From this unique starting point, ZFL has extended its portfolio to high performance helicopter gearbox solutions, innovative rotor actuation technology, fix wing gearbox applications and a wide range of test stand types. At the Paris Air Show ZFL is displaying the In-Flight Tuning (IFT) technology – one of its innovative rotor control systems. With the IFT technology using ZF’s electrical Smart Pitch Rods (SPR), an already flight tested system is available for automated, continuous In-Flight Tuning of the helicopter main rotor. Due to the need of less cost intensive tracking flights and minimized vibration levels DMC/DOC can be reduced. Moreover, the availability of the helicopter can be enhanced due to autonomous reconfiguration after blade damage. The IFT System can be retrofitted to many rotorcrafts as a self-contained unit. You will find the experts of ZFL in hall 2c booth 372.

www.zf.com/luftfahrt

**LM-100J Super Hercules to debut**

(ck) A new civilian version of the Lockheed Martin Super Hercules will debut in Paris. Based on the military C-130J Super Hercules, the LM-100J is a prop-driven commercial multipurpose airfreighter. On 25 May it had its maiden flight. The LM-100J is based on the current C-130J with military features removed. It can operate from short, unprepared airfields in austere locations that are unsuitable for jet aircraft and have no proper ground equipment. The LM-100J has four Rolls-Royce AE2100D3 engines punching 3,410 kW each with full-authority digital engine controllers and an automatic engine thrust control system that allows the aircraft to fly safely if one engine is out of service. The cargo deck allows to load and unload quickly. The LM-100J is capable of a variety of jobs, including fire fighting, search and rescue missions, humanitarian airlifts, cargo transport, and oil and gas exploration.

Visit Lockheed Martin at Chalet 324 Static Display C2.

www.lockheedmartin.com/lm100j

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**2nd European GeoInformation Symposium and Exposition**

20 - 22 June 2017, Berlin, Germany

“Big Data - Key for Future GeoInformation Services”

The **2nd European GeoInformation Symposium** of AFCEA Europe and the Bundeswehr Geoinformation Service, held under the Patronage of the Ministry of Defence, Germany, will focus on how huge and constantly growing amounts of related data and datasets can be handled simultaneously, efficiently and effectively to provide guidance for future-oriented decision making.

**Session Topics:**
- Requirements and Architectures
- Strategies and Methods
- Analytics of Environmental and Geospatial Data
- GeoInformation Services

**Registration, exhibit and sponsorship opportunities:**

http://news.afcea.org/GEO17
Further Exhibitions

30th International Helicopter Forum in Bückeburg

(ck) On July 5 and 6, the helicopter community will meet in Bückeburg. The Helicopter Centre has invited to the 30th International Helicopter Forum. The presentation program by and for acknowledged experts from the manufacturers, military and police aviation as well as HEMS and other civilian operators is at the core of the two-day event. Session topics will be “New Developments in Rotary Aviation” and “Future Technologies” with a focus on new engines. The German Armed Forces will need to replace their CH-53 and an entire session will deal with the “Future Heavy Lift Programme”. Other sessions on “Mission and Procedures” as well as on “Training and Simulation” complete the Forum’s presentation program. In the industrial display numerous companies will present their newest products and services. Currently, a static display is being planned with a CH-47 Chinook and a Sikorsky MH-60. It is a forum tradition to hold the reception on the evening of the first day in the Helicopter Museum. There is better event or location to talk about current developments and new trends in the helicopter industry, to network, and to “talk about helicopters under helicopters” in the Helicopter Museum.


DSEI Pre-Show

Defence and Security Equipment International (DSEI), the defence and security event, will take place at ExCeL, London on 12 – 15 September 2017. DSEI brings together the defence and security sector across five zones: Air, Land, Naval, Security and Joint, where attendees can source equipment and systems, develop international relationships, and generate business opportunities. The prominent global orientated event will host more than 1,600 exhibitors and attract 34,000 visitors from all over the world, including military and government officials, academia and members of industry. The 2017 DSEI will be the biggest DSEI to date. It has increased the range of exhibitors and its conferences and seminars. The DSEI Conferences and Seminar Programme will see over 300 speaker-led discussions. Recent political milestones combined with a competitive defence & security market provides a platform for debate. Audiences can discuss urgent topics challenging the sector. Visitors can register at: www.DSEI.co.uk/Register17

XIV INTERNATIONAL SPECIALIZED EXHIBITION ARMS AND SECURITY '2017

October 10-13, 2017
Kyiv, Ukraine

Is held according to decree of the Cabinet of Ministers of Ukraine.

The exhibition “Arms and Security” is a unique tool for the deepening of military and military-technical cooperation with foreign partners, to strengthen domestic economic potential and for the union of all Ukrainian citizens, regardless of gender, nationality or religion, around the idea of building a new strong and prosperous Ukraine.

AUSA CONFERENCE

October 3-5, 2017
Washington, USA

Held every October, the AUSA Annual Meeting & Exposition is the largest land power exposition and professional development forum in North America. This event consists of informative and relevant presentations, panel discussions on pertinent military and national security subjects, workshops and important AUSA business meetings.

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