Published by MITTLER REPORT

Fewer Regulations For Mature Technology

Lieutenant Colonel ret. Gerhard Heiming

The extensive procurement programmes for the renewal of equipment for the armed forces all over the world are based primarily on established and therefore mature technology. The ever-increasing volume of regulations and rules must be broken through in order to make the required material available quickly. These are two findings from the International Armoured Vehicles Conference 2019 organised by IQPC, which brought together around 600 experts to exchange information at the end of January in London.

Speakers from the armed forces presented their organisations and doctrines, findings from missions as well as modernisation and procurement programmes. The industry presented approaches and proposals for solutions lectures and in an accompanying exhibition. The exhibition was also a focal point for



gramme and the inservice phase. OCCAR procures the vehicles on behalf of the user nations (not for Australia) from ARTEC, the joint venture of Rheinmetall and Kraus-Maffei Wegmann + Nexter Defence. Today, 716 GTK Boxers in 14 versions have been ordered. Germany has ordered a second batch with 131 Boxer A2 group transport vehicles and Lithuania as new customer 89

discussions arising from the more than 70 different lecture topics.

The actual conference was preceded by a focus day for maintenance, modernization and operation. In two parallel lecture series, military leaders of numerous armed forces from all over the world explained aspects of the operation of their vehicle fleets and the industry had the opportunity to present solutions for selected tasks.

The main conference was moderated by General Sir Adrian Bradshaw. High-ranking NATO commanders presented requirements for modern equipment for ground troops. The reduction of the logistical footprint and signature was also crucial for command posts at higher levels. Invisibility is the important goal, also to be achieved by dispensing with extensive technology. The troops had to be enabled to use their weapons effectively at any place at any time. The refocusing on intensive combat required the troops to be quickly equipped with adequate equipment in sufficient numbers.

Armoured Transport Vehicle GTK Boxer

A special focus was given to the GTK Boxer armoured transport vehicle for which OC-CAR, NSPA, the user nations Australia and Lithuania and the manufacturer ARTEC gave an overview of the procurement proinfantry and two driving school vehicles. The 500th Boxer has just rolled off the production line.

Australia has ordered 211 Boxer and 14 additional mission modules in five versions as part of the Land 400 modernisation programme. Of these, 25 vehicles known as Block I (12 reconnaissance vehicles and 13 multi-purpose vehicles) are to be put into operation by 2020 as immediate requirements. The remaining vehicles will then be realized as Block II with the versions reconnaissance (121), command and control (15), joint fire support (29), repair (11) and recovery (10). The reconnaissance version is equipped with a Lance turret with 30 mm cannon. For the variants without

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turret, additional mission modules are procured which are made transportable with ISO container frames. Two container frames are equipped with power supply so that mission modules can be operated stationary in operation or in training (without driving module).

The Block II vehicles differ from Block I in the integration of Spike anti-tank missiles, a mobile camouflage system, mine and ballistic protection according to Land 400 specifications, a new C4ISR command and reconnaissance system and possibly an active protection system (APS). On behalf of Australia, Rheinmetall is conducting a feasibility study to determine whether an APS such as the pre-selected Iron Fist can be integrated into the Boxer. The Block I vehicles will be retrofitted to the Block II configuration.

In Europe, negotiations for the procurement of 48 Boxers in four versions for Slovenia are in the final stage. Great Britain, one of the initiators of the Boxer program but retired in 2003 – has rejoined the program and wants to procure more than 500 vehicles. The decision will be made before the end of this year. Since the British Boxers are to be produced predominantly in Great Britain, the industry is currently bringing itself into position. On January 21, 2019, Rheinmetall and BAE Systems announced that they intended to form a joint venture to produce a substantial part of the Boxer's production and to develop further wheeled vehicle activities. Rheinmetall's UK subsidiaries Rheinmetall Defence UK and Rheinmetall MAN Military Vehicles UK will also play a role.

In Germany, there is a further demand for boxers to carry a heavy weapon for infantry operations and air defence with a number of units in the order of 90. The Netherlands has registered a demand for five vehicles and additional training equipment.

This results in a total foreseeable production volume of well over 1,500 vehicles. The NATO Support and Procurement Agency (NSPA) expects up to 2,000 vehicles for which it can provide operational support. Since 2013, NSPA has been working closely with OCCAR to provide support in technical matters, material management, financing and procurement. Currently, 474 boxers are supported by the Land Combat Vehicle Support Partnership. The user nations benefit from NSPA's expertise.

Without specific user requirements, the industry creates mission modules for further tasks. A bridge layer with a 14 m bridge (MLC 100) or 22 m bridge (MLC 50) is in prototype status. A mission module with a 155 mm howitzer is also in the experimental stage. Numerous expectations have already been fulfilled during test firing with the remote-controlled cannon. However, with a total weight of 38.6 tons, the weight of the howitzer requires changes to the suspension and other tires. ARTEC named the DSEI 2019 or the Eurosatory 2020 as possible presentation dates. cles in accordance with military requirements.

Next Generation U.S. Army Combat Vehicles

The U.S. Army will renew its fleet of combat vehicles over the next few years. To accelerate development and procurement projects, the U.S. Army established the Army Futures Command (AFC) last fall, in which eight Cross Functional Teams (CFT) coordinate the work of the project teams as a Team of Teams. One of these is the Next Generation Combat Vehicle (NGCV) CFT, which reduces or closes the gap in cross-domain capabilities for the Army. For the AFC, the CFT serve as the primary integrator for all supporting analyses, modelling, simulations and technical demonstrations. The NGCV CFT Director synchronizes the capability building process on behalf of the AFC and guickly transfers the capabili-



The Boxer has grown into one of the most successful 8x8 wheeled vehicle ranges. The bundling of user interests in one organisation for procurement (OCCAR) and one for operation (NSPA) each, which cooperate with ARTEC, in which the industrial activities are bundled, is proving to be advantageous. The clear interfaces and unambiguous responsibilities enable the rapid and low-error realization of vehities approved by the Army leadership into the Army's procurement system.

Five projects are assigned to the NGCV CFT. The aim is to quickly introduce combat vehicles that exceed the performance of the imported vehicles while reducing vehicle weight and logistic footprint. Longterm superiority for operations in future combat environments with increasing threats is one of the decisive goals.

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European Security & Defence

The following vehicles are assigned to the NGCV CFT:

Joint Light Tactical Vehicle (JLTV)

4x4 multipurpose wheeled vehicle, 50,000 pieces required, in production, fielded, manufacturer: Oshkosh.

Armored Multi-Purpose Vehicle (AMPV)

Support vehicle on track, need 3,000 units, demonstrators under test, order first lot expected 2019, to be fielded from 2021, manufacturer: BAE Systems.

Mobile Protected Firepower (MPF)

Light tracked vehicle for heavy weapons, demand 504 pieces, demonstrators in production, manufacturer selection and delivery order 2022, to be fielded from 2025, supplier: BAE Systems and General Dynamics.

Optionally Manned Fighting Vehicle (OMFV)

Infantry combat vehicle on chain, need size 4,000 pieces, competition beginning in 2019, to be fielded from 2026, supplier: BAE Systems, General Dynamics, Rheinmetall/Raytheon.

Robotic Combat Vehicle (RGV)

Remote-controlled land vehicles in three (size) variants, scope of investigation 30 pieces, concept definition until 2023

In addition, there is the incipient study activity for decision-making in 2023 on a future heavy weapon (Future Decisive Lethality, OMT/NGT). For the replacement of the Abrams main battle tank, a new platform will be sought that will ensure the decisive superiority of the effects. The prerequisite is the availability of mature technology for a leap in performance.

Amphibious Combat Vehicle For Japan

One of the most interesting innovations was the future amphibious vehicle presented by the representative of the Japanese Acquisition, Technology & Logistics Agency (ATLA). In a five-year program, a prototype has been under development since 2017 and will be subjected to initial functional tests in the second half of 2019. The decisive feature is the 2,000 kW drive motor, which, in combination with a special transmission and two water jets, enables the vehicle to achieve a high (unspecified) water speed. An indication of the high swimming speed is also provided by the powerful surge board, which stabilizes the swimming position. The system technology for high water speeds is currently the focus of development. On land, the vehicle moADS on the Stryker of the U.S. Army before the end of this year and carry out tests under operating conditions in the USA. For users, the operational reliability of the APS is of paramount importance: the system must trigger safely when a threat is detected, but only then. This places high demands on the software. Rafael reported on up to two major software updates per year.



ves on a track with six rollers. In addition to the driver and commander, the protected interior offers space for an infantry group. The main operational area will be the sea area with the Ryūkyū islands south of the Japanese main islands, in order to guarantee the safety of several thousand islands.

Active Protection

Active protective systems are the means of choice for protection against rocket-driven hollow charge projectiles. Rafael and Rheinmetall Active Protection (RAP), two renowned manufacturers of active protection systems (APS), were represented at IAV. Rafael presented the Trophy, which had already been fielded and tested in combat, and is currently being integrated into U.S. Abrams main battle tanks. German Leopard 2 main battle tanks will soon be equipped with Trophy. In 2022, the first of these should be usable for subsequent deployment at VJTF. RAP will integrate its The complexity and the high reliability, however, also demand their price. A sum of €1 million per vehicle was mentioned as the order of magnitude.

Further Development

The development of military armoured vehicles is progressing only slowly. After all, complex equipment has to be designed, tested and produced that has to function reliably in a difficult environment. Last but not least, they also have to comply with comprehensive and not always coherent specifications, regulations and rules, the scope of which is constantly increasing. The acceleration of these processes, which are currently measured in decades rather than years, is the concern of most players in the armaments community. The International Armoured Vehicles Conference contributes to this through its external view and the exchange of information at a high technical level.



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Technology

NATO Project Land Battle Decisive Munition

(df) NATO announced that Denmark, France and the Netherlands have received the first shipment of new anti-tank weapons under the multinational NATO project Land Battle Decisive Munition (LBDM). This delivery follows the signing of a Memorandum of Understanding (MoU) by Defence Ministers at the NATO Summit in July 2018. The LBDM project allows NATO nations to

acquire land munitions, including mortars,



artillery shells, rockets, and missiles, in a more cost-effective and flexible way. The fast delivery timeline demonstrates that multinational cooperation can enable allies to tackle shared requirements in a cost and time efficient way. The munitions were delivered through the NATO Support and Procurement Agency (NSPA) after only six months.

So far, 16 NATO members have joined this effort: Belgium, Denmark, Estonia, France, Germany, Italy, Latvia, Lithuania, Montenegro, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, and Spain. NATO partners Austria, Finland, and Macedonia are also participants.

www.nato.int

Ukraine Orders Bogdan 6317 Trucks

(df) Ukrainian Ministry of Defense orders "Bogdan 6317" trucks. The contract, that was signed with Bogdan Motors, foresees the significant increase of military equipment production volumes in 2019, the company announced. Bogdan 6317 will gradually replace the Ural-375, Ural-4320, ZiL-131 trucks and the military versions of KAMAZ vehicles, designed in the 1960s-70s.

"Having commissioned all-road Bogdan 6317 trucks in 2018, representatives of the defence ministry said that the military are satisfied with Bogdan vehicles' performance," Bogdan Motors stated. "This year truck supplies to the Ministry of Defense will grow significantly compared to 2018. The military are interested in expanding the vehicle fleets, procuring modern, reliable, comfortable, quick, and highquality Bogdan 6317 trucks."

Bogdan 6317 is a modern general purpose vehicle equipped with a high-capacity 9.7L V6 Weichai Power turbocharged diesel engine developing 380 hp. The truck makes up to 85 km/h carrying 11 tons of cargo. It



is capable of transporting 50 persons. Besides, the vehicle is designed to tow trailers on all categories of roads, including hardtop and dirt roads as well as in off-road conditions.

www.bogdan.ua/en/

Army Test Of A Vehicle Active Protection System

(df) In January Northrop Grumman demonstrated a complete Vehicle Active Protection System (APS) that defeated a variety of real world live fired Anti-Tank



Guided Munitions (ATGMs) during an Army-sponsored exercise. The month-long government sponsored Soft-kill Rodeo in Huntsville was developed to demonstrate and test soft-kill capability against real world threats.

Using its Passive Infrared Cueing Sensors system, Northrop Grumman successfully generated threat warning of inbound ATGMs and provided a cue for the soft kill countermeasure system (SKCM). The Northrop Grumman SKCM system, known as the Multifunction Electro-Optical System (MEOS), successfully countered the ATGM and defeated it in real-time. The MEOS identified and countered all types of threats fired at its APS system, making this the fourth consecutive time the system has performed well in field tests to defeat threats.

"This solution is an example of leveraging significant investment in aircraft protection to rapidly provide similar capabilities to ground vehicles," said Mike Meaney, Vice President, advanced missions, Northrop Grumman. "We look forward to working with the Army to deploy an affordable endto-end Vehicle APS system that can defeat a variety of anti-tank guided munitions."

www.northropgrumman.com

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First Dutch Operational F-35

(df) On January 30 Dutch and American officials celebrated the roll out of the first operational F-35A Lightning II for the Royal Netherlands Air Force (RNLAF) at Lockheed Martin in Fort Worth, Texas. The RNLAF plans to acquire 37 F-35As.

"Receiving this F-35 at Leeuwarden Air Base later this year is going to be a huge driver for change for our Air Force and will have tremendous impact on the relevance of our Air Force as part of the coalition," said Lt. Gen. Dennis Luyt, Commander, RN-LAF. "We want to be among the best air forces of the world, and the platform of F-35 allows us to do that." Following the ceremony, the aircraft is scheduled to ferry to Luke Air Force Base, Arizona, where F-35A pilot training takes place. The aircraft is the first operational F-35 and the third Netherlands jet delivered to date. The first two Dutch F-35s were delivered in 2013 and are at Edwards AFB, California, supporting operational testing.

"With stealth technology, supersonic speed, advanced sensors, weapons capacity and increased range, the F-35 is the most advanced, survivable and connected aircraft in the world," Lockheed Martin announced. "More than a fighter jet, the F-35's ability to collect, analyze and



share data, is a powerful force multiplier that enhances all airborne, surface and ground-based assets in the battlespace enabling men and women in uniform to execute their mission and return home safely."

www.lockheedmartin.com

Gripen Offered To Finland

(df) Saab announced it has submitted a proposal for the Finnish HX fighter procurement to the Finnish defence procurement agency, the Logistics Command of the Finnish Defence Forces. The proposal comprises 64 Gripen aircraft, both single-seat Gripen E and dual-seat Gripen F, and is the formal response to the customer's Request for Quotation (RFQ) issued in April 2018. As part of the proposal, Saab offers a subs-

tantial weapon and sensor package as well as the necessary equipment and associated services needed for operating the system, including an industrial co-operation programme with the aim to build extensive



national capabilities in Finland for Security of Supply. It also includes transfer of maintenance, repair and overhaul capabilities to local industry, production of aircraft and an establishment of a Gripen sustainment and development centre in Finland.

"The outstanding capabilities of Gripen are an excellent match for the Finnish needs and requirements", says Jonas Hjelm, Senior Vice President and head of Saab business area Aeronautics. "With Gripen, Finland can renew its fighter fleet without compromising on the number of fighters owing to a truly competitive life-cycle cost. Our offer constitutes a substantial contribution to the operational capability of the Finnish Defence Forces."

Five nations are currently operating Gripen; Sweden, South Africa, Czech Republic, Hungary and Thailand. Sweden and Brazil have ordered Gripen E and Brazil has also ordered Gripen F. Additionally, the UK Empire Test Pilots School (ETPS) uses Gripen for test pilot training.

www.saab.com

Trainer For Close Air Support

(df) Elbit Systems UK completed delivery of a mobile Close Air Support (CAS) and joint fires simulator to the British Army. Built together with QuantaDyn Corporation the Joint Fires Mobile Trainer (JFMT) is now in active service with the Joint Terminal Attack Controllers (JTAC) and Fire Support Teams (FST) of the 1st Artillery Brigade. The JFMT is accredited to simulate all controls currently allowable (types 1, 2, and 3, Full Motion Video, Rotary Wing, Night/IR, Remote Observer and Laser Target Designation). The supplied fully serviced training package is contained within a 20ft trailer able to be deployed and recovered by vehicles within short time frames.

The system comprises a trainee station, an instructor/operator station (IOS) and a pilot station console. Visuals are provided within a high resolution dome configuration coupled with a Computer Generated Force (CGF) and Semi-Autonomous Force (SAF) application. The Image Generation is multi-spectral allowing use of in-service Night Vision Devices in conjunction with a range of emulated equipment, such as la-



ser designators, radios and binoculars providing trainees with a high fidelity "train as you fight" experience.

www.elbitsystems.com

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TKMS Lands In England

(hum) In a press release dated January 23, ThyssenKrupp Marine Systems confirmed that the German shipbuilding group had been short-listed in a consortium with ATLAS ELEKTRONIK UK, ATLAS ELEKTRONIK GmbH and the British shipyards Harland & Wolff (Belfast) and Ferguson Marine Engineering (Glasgow) for the design contract for five Type 31e frigates in the race for the design contract.

Dr Rolf Wirtz, CEO of thyssenkrupp Marine Systems: "We are proud to have reached the decisive design phase for the Type 31e frigates." TKMS would like to compete with MEKO A-200, which is already in service with two navies. The local added value offered in England, Scotland and Northern Ireland is expected to put the company on an equal footing with its English competitors.

The TKMS consortium will compete with BAE Systems (which will join forces with Cammell Laird and BMT) and the Babcock-led interest

group of Thales (France), Harland & Wolff, BMT and Ferguson Marine. The selection to develop the design is a further step towards the realisation of the £1.25 billion frigate programme. As such, it represents the first competition, "the first competition the United Kingdom has undertaken for generations," according to Secretary of State Stuart Andrew in the Ministry of Defence. The Royal Navy expects the competition to start in 2023, a deadline which observers doubt will be met.

The selection for the £5 million development contract is definitely a success for the German shipbuilder. Further decisions are expected later in 2019.

Medium Range Surface-to-Air Missile For The Indian Navy

(df) The Indian Navy together with Cochin Shipyard Limited (CSL) have entered agreements worth \$93 million for provision of Naval MRSAM (Medium Range Surface-to-Air Missile) systems with Israel Aerospace Industries (IAI). Under the contracts, IAI



will provide complementary systems for the air defence system (ADS). They involve

follow up orders for a range of maintenance and other services for various sub-systems of IAI's advanced MSRAM ADS.

This contract follows an interception test by the Indian Navy aboard INS Chennai, which assessed for the first time potential collaboration between ships. The interception scenario, which was executed successfully, demonstrated how the operational force of the defense system can be doubled regionally, rather than topically.

The MRSAM family is an operational air-defence system used by Israel's Navy as well as by India's naval, air and ground forces. It provides broad as well as topical defence against a range of assault air, marine and ground threats. MRSAM comprises several key state-of-the-art systems, including a digital radar, command and control, launchers, and interceptors with advanced homing seekers.

www.cochinshipyard.com www.iai.co.il

Chilean Icebreaker Project

(df) The Finnish company Surma has been chosen by ASMAR as the provider of the Electro Magnetic Compatibility and Electro Magnetic Interference (EMC/EMI) design and management of Chile's Antartica 1 Icebreaker project. Surma will assist ASMAR throughout the multiyear project managing the EMC Working Group of Antartica 1 project.

"In the current paradigm of wireless sensors and wireless information retrieval and communication systems, the right approach to on-board signal propagati-



on within a vessel is a crucial question to maximize the valuable time of researchers and the overall efficiency of the icebreaker," said Kristian Tornivaara, CEO of Surma. "We are proud to be part of the team behind Antartica 1, which will be one of the most sophisticated oceanographic ships ever built."

The icebreaker will have a length of 111 m, a 21-m breadth and a draft of 7.2 m, and may operate at 3 knots on one-year-old ice up to 1 m thick covered with up to 20 cm of snow, while its maximum speed on normal surface will be 15 knots. With a total crew of up to 120 people, the ship will have a cargo capacity of about 510 m3; plus 400 m3 of fuel transport, and another 400 m3 of load on pallets.

www.asmar.cl www.surma.ltd

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British Communication For The U.S. Navy

(df) BAE Systems will assist the U.S. Navy in maintaining and operating multiple electronic, communication, and computing platforms under a five-year \$79.8 million contract, the company announced. Within this programme BAE Systems will enhance the communications and connectivity of U.S. and Joint forces across the Pacific. It will provide 24/7 operations and maintenance support for afloat and ashore command, control, communications, computer, and intelligence systems.

Through this contract, BAE Systems engineers will also continue servicing the U.S. Navy's Mobile User Objective System, a narrowband military communications satellite system that offers enhanced and secure communications, including voice, video, and data for all branches of the Department of Defense and other federal agencies.

"We are maintaining ship-to-shore, shoreto-aircraft, and shore-to-shore long-range communications systems," said Mark Keeler, vice president and general manager of BAE Systems' Integrated Defense Solutions business.

www.baesystems.com

Second ZUMWALT class on duty

(hum) With the USS MICHAEL MONSOOR (DDG 1001), the second of three planned stealth destroyers of the ZUMWALT class was put into service by the U.S. Navy at the Naval Air Station North Island, California on January 26, 2019. USS LYNDON B. JOHN-SON (DDG 1002) was launched on December 9, 2018. It is expected to be launched this spring and is scheduled to enter service in 2022.

Like her sister ships, the USS MICHAEL MONSOOR was built by General Dynamics Bath Iron Works in Bath, Maine. The US naval base in San Diego, California is to become the home port. The 16,000-to ships in stealth design are not undisputed because of their cost. The programme was reduced from 32 ships originally planned (as a successor to the ARLEIGH BURKE class) to three. Moreover, the U.S. Navy has to face challenges in propulsion, armament and personnel of the ZUMWALTs.

www.gdbiw.com



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Industry & Trade

Claude Alber Vice President Collins Aerospace in Europe

(df) As part of the new organization set up following the creation of Collins Aerospace, borned on last December from the merger between Rockwell Collins and UTC Aerospace Systems, Claude Alber has now been appointed as Vice President Collins Aerospace for Europe. Claude Alber has now been named Vice President of Collins Aerospace in Europe to further increase the company's focus in the region and deliver higher value to customers.

Through his executive leadership and regional insight, Alber will create Collins Aerospace's enterprise strategy for Europe to deliver new growth and provide innovative solutions to customers. He previously was Vice President and Managing Director, Eu-

MASTHEAD

ESD Spotlight

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

Editor-in-Chief: Dr. Peter Bossdorf Managing Editor: Dorothee Frank (df) Editors: Lieutenant Colonel ret. Gerhard Heiming (gwh), Christian Kanig (ck), Captain (German Navy) ret. Hans Uwe Mergener (hum) Layout: Dorothee Frank

MITTLER REPORT

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

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

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

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rope, Middle East and Africa for Rockwell Collins.

"Alber's ability to effectively drive change, transform organizations and develop business has been proven repeatedly in his various roles," said Henry Brooks, President Customer & Account Management for Collins Aerospace. "His extensive experience across aerospace and defense businesses will be a key asset to develop Collins Aerospace in Europe, utilising and bringing together the breadth of capabilities across the enterprise."

Alber has been senior director for Commercial Systems, leading Rockwell Collins programmes for Airbus and other international aircraft manufacturers, and prior to that, director, Integrated Systems, European programs for Government Systems. In those roles, Alber significantly contributed to the growth of Rockwell Collins business in Europe. Before joining Rock-



Collins Aerospace)

well Collins, Alber held several systems engineer and management positions at Safran, Airbus and ASECNA (Agence pour la Sécurité de la Navigation Aérienne en Afrique). He holds a Master of Science degree from Sup Aero in Toulouse, France.

www.collinsaerospace.com

Rolls-Royce Engines Of German Origin

(gwh) Rolls-Royce - an icon of British industry - has relocated the technical home of its aircraft engines to its German subsidiary in order to counter the possible harmful effects of Brexit. The European Aviation Safety Agency (EASA) has approved an application to this effect. The rules of the new "home" will also apply to existing engines, some of which have been in service for decades.

According to Rolls-Royce, jobs will not be relocated.

In future, the German branch will be responsible for the approval and licensing

Raytheon Increases Net Sales

(df) End of January Raytheon announced net sales for the fourth quarter 2018 of \$7.4 billion, up 8.5% compared to \$6.8 billion in the fourth quarter 2017. Fourth quarter 2018 EPS from continuing operations was \$2.93 compared to \$1.35 in the fourth guarter 2017. The increase in



procedures. The engines are thus considered to be of German design for export. For exports from the EU, clear and well-known rules apply in contrast to exports from Great Britain after the Brexit.

www.ease.europa.eu

the fourth quarter 2018 EPS from continuing operations was primarily driven by operational improvements and lower taxes primarily associated with tax reform. Net sales in 2018 were \$27.1 billion, up 6.7 percent compared to \$25.3 billion in 2017.

www.raytheon.com

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IDEX

The International Defence Exhibition and Conference (IDEX) is the world's leading joint defence exhibition. IDEX and NAVDEX demonstrate the latest technology across land, sea and air sectors of defence. It is a unique platform to establish and strengthen relationships with government departments, businesses and armed forces throughout the region. In 2017, the event attracted 1,235 exhibiting companies and over 105,000 visitors.

February 17-21, 2019, Abu Dhabi, UAE

3rd European GeoInformation Symposium & Exposition

The two-day conference organised by AFCEA Europe on S.M.A.R.T. GeoInfo-Support – Now and Tomorrow will be held under the patronage of Dr. Peter Tauber, Parliamentary Undersecretary of State of the German Ministry of Defence and with the significant participation of the Bundeswehr GeoInformation Service (BGIS).

February 26-27, 2019, Berlin, Germany

GPEC digital 2019

Leading in public security the GPEC specialised exhibition & conference regularly creates the industry forum for the top exhibitors and

thousands of visitors from all over the world. Now the specialised edition GPEC digital 2019 fully concentrates on the dominating topic of our time: Digitisation. GPEC digital 2019 is not open to the public – it is only accessible for visitors from national and international security authorities presenting a service ID card.

March 13-14, 2019, Berlin, Germany

SOFINS 2019

Unique in Europe, SOFINS offers an unequaled opportunity for manufacturers to meet and discuss their solutions with special forces. Meetings, R&D workshops, and dynamic tests of equipment allow special forces to try out the new technologies being developed by manufacturers to meet the demands of special operations.

April 2-4, 2019, Bordeaux, France

LAAD Defence & Security 2019

The event brings together Brazilian and international companies specialized in supplying equipment, services and technology to the Armed Forces, Police and Special Forces, Security Services, Law Enforcement, Homeland Security, security managers from large corporations and critical infrastructure, consultants and government agencies. Several official delegations from all over the world are expected at this years event.

April 2-5, 2019, Rio de Janeiro, Brazil

IDEF'19 - 14th International Defence Industry Fair

The show authorities allocate meeting offices to meet the delegations and participants from national/international defence industry institutions during IDEF, establishing important commercial connections with them. Scheduled meetings and signature ceremonies are realised during the fairs between the defence industry authorities and exhibitors from all around the world.

April 30 - May 3, 2019, Istanbul, Turkey



GPEC digital 2019

3rd European GeoInformation

Symposium & Exposition











DEFENCE & SECURITY

2019