

The Navy is on the right course

In the forefield of SMM European Security & Defence interviewed Vice Admiral Andreas Krause, Chief of the German Navy. The interview was conducted by Dieter Stockfisch.

ESD: In the past three years the Navy has been stretched to its limits in terms of personnel and materiel by the large number of deployments, running in parallel, in response to crises and conflicts. Has this situation eased, or is it still going on?

Krause: In the past we have been severely stressed with regard to personnel and materiel in respect of capacity for deployment. But, despite that, we, with the German Navy, have been in a position to fulfil the orders and tasks assigned to us, every time and any time. This is thanks not least to the high commitment of the men and women who serve in the Navy, at every level. In this context, I adopt the principle that anything which does not directly contribute to effectiveness in or for deployment, or to the defence of the Alliance and the country, is consistently to be regarded as of secondary concern. Things will definitely ease in the middle term with regard to the readiness for action, both for personnel and materiel. A precondition for the course which has been set does however entail all the planning being backed financially, and that we have our sights set jointly on our targets.

ESD: What are the causes of actual inadequate materiel and how should this state be overcome?

Krause: I am now glad to say, with regard to the situation involving submarines, that by the end of the year we will be able to use three submarines again, and perhaps actually four. U31 has in the interim successfully passed its performance trials, and is regularly going to sea. This is where the economies necessarily incurred from the

peace dividend have at last caught up with us. Because for reasons of costs we have been obliged, among other things, to do without spare parts packages on the scale required, we are faced today with the situation that we rapidly reach the limits of our capacities, especially with unforeseen events arising. Every spare part needs to be produced in an elaborate and time-intensive manner. But here too the right steps are being taken. With the second set of submarines, we have also initiated the procurement of a spare parts package for all the boats, and we have also concluded a framework maintenance and repair contract with the industry concerned. Both measures are aimed at cutting down dockyard times, and making things easier to plan. That is in any event what I am anticipating, and expecting. A particular focus of attention for me, as well as this challenge, is the issue of the Navy addressing the certification of our submarine crews as a top priority, so as to get this weapons system back in full operational readiness once again.

ESD: What shape is the Navy procurements programme taking, and which units and weapons systems need to be replaced or produced as new?

Krause: The shrinking of the fleet, which went on for years, is happily now behind us. Even if this is still in the planning, over the next ten years the Navy should be receiving every year at least one seaborne or airborne weapons system. One special project in this respect is without doubt the MKS180 multipurpose warship. This is a vessel which will be equipped with a



(Photos: German Navy)

unique range of capabilities, such as the Navy has never seen before. The MKS 180 cannot be replaced by a K130 corvette, or indeed any other seagoing combat resource. This applies, incidentally, to all the ships, boats, and aircraft of the Fleet: Every seagoing weapons platform is unique, with its specific capabilities, and it is only as a composite, in joint effect, that the Fleet is in a position, as a whole or in appropriate mixed formations, to conduct war at sea in three dimensions. This is why I always speak of the "balanced" Fleet, which we need to direct with its full range of capabilities to achieve high intensity of effect. Only then can we, with one and the same Fleet, be confident of the defence of the nation and of the Alliance and equally of responding to international crises and

resolving of conflict. It does not work the other way round. But back to the MKS 180. For the first time, and as a direct consequence of the armaments agenda, we are already pursuing new courses even with the invitation to tender. This is not only Europe-wide, but also conjectured as an iterative process. The aim is minimisation of risk. Better that the invitation to tender takes more time, but leads to a satisfactory construction contract, with realisation risks which can be overcome at the same time, rather than suddenly being confronted in the construction phase with problems which cost us not only time but money too. There can be no question, then, of the present invitation to tender process being interrupted. On the contrary, everything is going to plan, and is going to continue to do so. The executive of the BMVg is holding to the previous course. I am anticipating the launch of the first MKS 180 by the end of 2025 or the beginning of 2026.

As well as the MKS180 project, we are also working intensively on the German-Norwegian submarine cooperation undertaking, the successor to the Sea-Lynx, the extending of amphibious capabilities, and a UAV for the K130 corvette. Double-hulled tankers, and successors to the units of sea mine defence capacity, are all intended to build up the German Navy of the future.

The bilateral agreement which I signed in December last year with my Norwegian counterpart will among other things result in the procurement of two further submarines as from the middle of the next decade. As well as that, the contract for the second set of five corvettes was already signed in September 2017, before the Bundestag elections.

To round off this question, I would like to make one further point. Despite an essentially positive assessment for the years ahead, I must say that the procurement process needs to be overall faster, more flexible, and more committed to its aims. In many areas procurement is still simply taking too long.



ESD: The Baltic has once again become a geostrategic focus for NATO. What stance is the German Navy adopting to the situation, as the largest navy in the Baltic region?

Krause: If we consider the geostrategic location of Germany on its own and within NATO, the German areas of maritime interests extend from the northern flank to the Mediterranean. But they also extend into the Indopacific region. In this situation, the paramount focus is on the defence of the country and the Alliance. This defence of the country and Alliance in context is what dictates the structure and capability. For this reason, it is correct and important that the entire spectrum of possible tasks is incorporated in the development of capabilities, with concentration on high-end capabilities. We need the flexibility and stamina to be able to be deployed on anything from police actions in the crisis management context through to high-intensity, three-dimensional warfare.

This position is being constantly broadened in response to the wishes of the partner nations to intensify the cooperation, in order to master together the challenges of our times. What is clear is that no nation can achieve this alone. If we take a look at our partners in the EU, this has manifestly been recognised, and is reflected in the Permanent Structured Cooperation, PESCO for short. PESCO is strengthening military cooperation in Europe.

We, as the German Navy, can justly and rightly contend that we are already ahead of our time. The German-Norwegian cooperation in the submarine sector is also to be seen as a beacon project in line

with PESCO, even without Norway being a member of the EU. But also close-knit cooperation and integration with the Dutch Navy, and the interaction in the context of the “Baltic Commanders Conference”, are ongoing proof that the Navy is very well placed to face the future. With the building up of the future Baltic Maritime Component Command in Rostock, the strong position of the German Navy in international interaction will be emphasised still further. All in all, the Navy is on the right course to sustain its success in the future.

ESD: What are the greatest challenges facing the Navy in the years to come?

Krause: The greatest challenges lie in the realisation of planned new units, and in upholding the availability of existing vessels, at a high level. In this context, the effort must also be sustained to have the right men and women on board. To do this, it will also be necessary to achieve the inner positive attitude, the “mind-set”, of every single member of personnel, men and women, to embark on new courses as well. Thanks to the winds of change in personnel, materiel, and finances, we are at the start of the upswing, and the most comprehensive modernisation of the Navy since it was founded. This will be a campaign involving everyone. It will be a challenge for all of us. We may perhaps also have to consider taking a step back, and then making another run-up. Achieving all this will demand a lot from us, one way or another. But it will be worth it. We are in the process of creating a Navy which will be even more ready for action, and more attractive to serve in as well.

Technology

Mixed Reality in Maintenance

(gwh) At SMM in Hamburg IFS will focus on modern technologies such as mixed reality (MR). IFS has developed a concept solution for Microsoft HoloLens MR glasses that navigates service technicians through complex environments. You can have data from IFS's business software such as maintenance instructions, service history, performance analyses or temperature readings displayed in transparent glasses and projected directly over the

system in front of which you are standing. This guides them efficiently through their work and makes them more productive because they have both hands free for their activities.

The solution accesses the data that is available, for example, in the ERP or EAM systems of IFS. IFS's business software, optimized for asset, project and service management, whose latest version Applications 10 was recently released, can consistently support the typical business



(Photo: IFS)

processes of the maritime industry – from shipping, shipyards and ports to drilling rigs and offshore wind farms.

www.ifsworld.com

Rostec Introduces New Exoskeleton

(ck) Rostec presented a new exoskeleton for the new Ratnik combat suit at the International Military-Technical Forum ARMIA2018. The exoskeleton was developed by the Central Research Institute for Precision Engineering and GB Engineering. The lightweight carbon fibre exoskeleton supports the musculoskeletal system when the wearer carries

backpacks, equipment, weapons and ammunition weighing up to 50 kg during long marches and attacks. The mechanical device uses swivel joints in the form of human joints. Unlike active exoskeletons, the passive exoskeleton requires no power or electronics, which is why it is lighter: four to eight kg depending on configuration. According to Rostec, the prototype was already tested between 2017 and 2018 during military operations by Russian Special Forces.



(Photo: Yvec)

operations by Russian Special Forces.

www.rostec.ru/enm

Israeli Drone Dome Answers Britain's Need to Counter Drones

(ck) The UK has ordered six Drone Dome from Israel's RAFAEL under an Urgent Capability Requirement (UCR) programme, providing quick reaction counter-unmanned aircraft systems (C-UAS) capability. The first phase of the deal is worth US\$20M and will be delivered this year. The British Army is the launch customer for the Drone Dome system. The UK interest is focused on engaging small drone targets (2-22 kg) at distances 500 m or closer. The UK restricted the tender to mature systems (TRL8 or higher). The order came only eight months after RAFAEL demonstrated the Drone Dome's capability to the UK government in January 2018. Each system includes radars, electro-optical (EO) identification and signals intelligence systems and electronic jammers that disable the drone's datalink or navigation systems.

The systems will be used to protect sensitive facilities from airborne threats. A complete Drone Dome is compact and light enough to mount on an All Terrain Vehicle such as the Tomcar (known as Springer in service with the British Army).

RAFAEL's Drone Dome integrates four RPS-42 pMHR S-band multimission 90° hemispheric radars from RADA, and provides early warning and target tracks at ranges of five to three km. The MEOS electro-optical/infrared (EO/IR) surveillance sensor from Controp,



(Photo: Rafael)

and Netline's NetSense Wideband RF detection sensors provide target identification. Target engagement by 'soft kill' is performed with electronic jamming, using the C-Guard RD jammer, system integration, command, and control. Deliveries of this programme are expected to be concluded within 2018.

www.rada.com

Spike LR2 for Australian Boxers

(gwh) Australia has announced the SPIKE LR2 guided missile from Rafael Advanced Defence System as an anti-tank guided weapon (ATGW) for the Boxer combat reconnaissance vehicle (CRV) of the Australian Armed Forces (ADF). The SPIKE LR2 is supplied by Varley Rafael Australia (VRA Systems), the joint venture between Rafael and the Varley Group.

The Boxer CRV is equipped with a LANCE turret from Rheinmetall, which is prepared for spike.

In addition to the SPIKE LR2, VRA will supply a range of Rafael products for the Australi-

an market, including the TROPHY Active Protection System (APS) for armoured vehicles, the TAMIR Counter-Rocket, Artillery & Missile (CRAM) Interceptor for short-range air defence on the ground (GBAD) and the TORBUSTER Torpedo Counter-Measure (TCM) for submarines. The weapon system, used in various variants in over 20 armed forces worldwide, has been introduced in Germany as a Multi-Role Light Guided Missile System (MELLS) for infantry. The industrial partner in Germany is Eurospike, a joint venture of



(Photo: Rafael)

Diehl-Defence, Rheinmetall Electronics and Rafael Advanced Defence Systems. The integration of the system into the AIFV Puma is currently underway.

www.rafael.co.il

Australia Opens Competition for AIFV

(gwh) Australian Defence Minister Marise Payne has opened the Armored Infantry Fighting Vehicle (AIFV) competition with the public announcement of the Request for Tender.

Phase 3 of the Land 400 armaments programme – the largest investment programme of the Australian Army – will involve the procurement of up to 450 combat vehicles and 17 support tanks. The aim is to signi-

ficantly improve protection, firepower and mobility, the classic domains of land combat vehicles.

As in the case of Land 400 Phase 2, in which Rheinmetall was recently commissioned to supply 211 GTK Boxers, the Australian industry is to be involved in production.

Australia will create a new armoured division in which the new battle tanks (Land 907) and armoured vehicle launched bridges (Land 8160) will also be integrated.

Following an information event on 5 Sep-



(Photo: AUS Mod)

tember 2018, the RfT-period runs until 1 March 2019. The first vehicles for training are expected in 2020.

www.defense.gov.au

NSPA Procures Guided Precision Ammunition

(gwh) Eleven NATO states and NATO partner Finland have procured precision-guided ammunition (PGM) worth €20 million through the NATO Support and Procurement Agency (NSPA). After the first lot was delivered on 22 August, Belgium and Denmark will receive their share in the next few weeks as the last final recipients.

With this cooperation, which was initiated in 2014, air-to-ground PGMs could be acquired at low cost. The delivery of ammunition (including Joint Direct Attack Munition Guidance [JDAM] and Paveway kits) with a total value of €200 million has been approved. The main contractors are Boeing and Raytheon. As part of this ini-

tiative, Allies will be able to draw on each other's PGM stocks when needed: in air operations or in a potential crisis. This will also help NATO and the Allies to reduce their dependence on the US for air operations.

NSPA leads this project on behalf of the participating nations: Belgium, Denmark, Greece, Great Britain, Hungary, Netherlands, Norway, Poland, Portugal, Spain and Czech Republic as well as the NATO partner Finland. After the first delivery, the second and third acquisition rounds for PGM are already underway. As NATO continues to develop this



(Photo: NSPA)

aviation cooperation, it has begun to create similar conditions for the acquisition of land and sea ammunition. This is part of NATO's efforts to increase joint investment in the critical capabilities that the Alliance needs.

www.nspa.nato.int

Rocket Launcher HIMARS for Europe

(gwh) Lockheed Martin has been contracted by the U.S. Army to supply 18 High Mobility Artillery Rocket Systems (HIMARS) to the armed forces of a European state under FMS. In Europe, Poland and Romania have negotiated the procurement of HIMARS with the US government. In 2017, the US State Department approved the delivery to Romania. Romania cleared €850 million in February

this year for the procurement of 54 HIMARS systems including supply vehicles and training rockets.

HIMARS is a rocket launcher mobile on a 6x6 wheeled vehicle (FMTV). Alternatively, six unguided missiles or one ballistic missile (ATACMS) can be fired. A special armoured cabin provides protection for the three crew members operating the system.

To date, HIMARS has been deployed in the US Armed Forces, Jordan, the United Arab



(Photo: Lockheed Martin)

Emirates and Singapore.

The Bundeswehr uses components of the HIMARS (including the launcher and GMLRS missiles) in the medium artillery missile system (MARS).

www.lockheedmartin.com

Autonomous Driving

(ck) At MEDEF's Summer Seminar (Mouvement des Entreprises de France) in Paris, German Vice Chancellor Scholz promoted a joint European armaments industry, reports the Süddeutsche Zeitung. Scholz called for Europeans to expand their defence community and defend common values and interests more confidently. What is needed is "the joint procurement of military equipment, which will lead to increased cooperation and the merging of European defence industries, including the merger of companies", Scholz said. The aim

must be to make the EU a serious player "in the global military architecture".

At the same Seminar, the French company Arqus presented the autonomous and/or remotely controlled protected vehicle (PVP) DAGGER, the company's latest achievements in R&D. Arqus' key focuses are on system architecture, mobility, support, fire functions, robotization, survivability, electronics architecture. DAGGER is part of the research and development work on the future of the land forces. The aim is to design and develop reconnaissance and logistics vehicles as well as



(Photo: Arqus)

to qualify protection against "developing battlefield threats" and to integrate "increasingly complex" communication, command and control systems.

www.arqus-defense.com

Soucy Group at Land Forces 2018 in Australia

(gwh) The Soucy Defense Division is exhibiting the Composite Rubber Track (CRT) system at the bi-annual Land Forces 2018 trade show in Adelaide, Australia. It is in the context of the LAND 400 program Soucy decided to show the capability of improving armoured platforms with the CRT-technology, as

well as the capacity of innovation and manufacturing.

The Soucy-CRT systems are used worldwide and can operate at Gross Vehicle Weights (GVW) from 6 to 45 metric tons.

With Land 400 Phase 3 Australia is looking for the next generation Armoured Fighting Vehicle. The Request For Tender (RFT) has been released by the Australian Defence Minister.



(Graphic: Soucy)

www.soucy-group.com

Upgrade for Lithuanian RBS-70

(gwh) Lithuania has contracted Saab to modernise its RBS-70 short-range air defence systems. New missiles with greater range and altitude coverage improve effectiveness against enemy aircraft and armoured targets. BORC night vision devices extend the range of applications.

direct steering (Line of Sight). According to Saab, the biggest advantage of RBS-70 is that it cannot yet be electromagnetically disturbed worldwide. The Lithuanian RBS-70 is used in combination with Giraffe Mk-IV surveillance radar.

The improved missiles and night vision devices worth almost €10 million will be delivered to the Lithuanian Air Force from 2019.



(Photo: Saab)

www.Saab.com

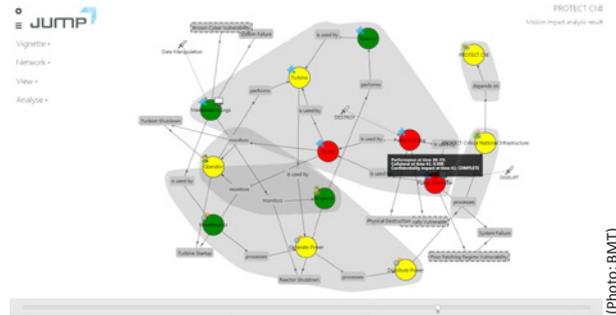
Cyber Operations Demonstrator

(ck) BMT, an international consultancy, working primarily in the defence and security environment, is leading a Science & Technology (S&T) research project to provide military commanders with a concept demonstrator of an integrated cyber and physical mission planning toolkit.

JUMP (Joint User Mission Planning) for Cyber and Electro-Magnetic Activity (CEMA) brings together all the physical knowledge a commander planning a mission needs, such as mapping, the environment, satellite imagery and 3D buildings. The de-

monstrator will also provide cyber situational awareness, for example, how systems and devices are connected to each other, what is the state of the services, are servers patched to the correct level and what vulnerabilities or threats exist.

The research project, which is being developed for the Defence Science and Technology Laboratory (DSTL), a UK MoD agency, aims to provide the Front-Line Commands and other Users with an informed visual understanding of the in-



(Photo: BMT)

tegration of cyber operations across all domains – something that is currently missing from existing mission planning tools.

www.bmt.org

Energy Efficient Semiconductor Design

(ck) Soitec, a manufacturer of semiconductor materials, and MBDA jointly acquired Dolphin Integration, a provider of semiconductor design, silicon IP and SoC (System-On-Chip) solutions for low power applications.

Headquartered in Grenoble, Dolphin Integration was founded in 1985. It currently employs 155 people, including 130 design engineers. In FY2017, the company genera-

ted revenues of €17 million. The joint venture formed by Soitec and MBDA acquires Dolphin Integration, including all employees. The ownership of the joint venture is as follows: Soitec at 60% and MBDA at 40%. Dolphin Integration is an integrated circuit design centre and exporter of integrated circuits and components (virtual, analogue and digital) for high volume manufacturing. Dolphin Integration contributes significantly to the development of microelectronic design and follows the explosive growth

trends in semiconductor design. Dolphin Integration aims to become a global player in the specialised market for service design and optimisation of very low power integrated circuits.

The company's products focus on serving the needs of dynamic consumer and industrial markets such as IoT, mobile, and automotive, as well as those of the European defence design industry.

www.soitec.com

www.mbda-systems.com

High-Throughput Connectivity for US ISR Missions

(ck) COMSAT, an operator of secure satellite communications services, has deployed its COMSAT Wideband Steaming L-Band (WiSL) solution across various U.S. government aeronautical and maritime platforms. This will enable the government to save costs by reusing existing SATCOM equipment, while quadrupling the throughput of the original Inmarsat SwiftBroadband (SB) and FleetBroadband (FB) systems. The WiSL solution utilises Inmarsat's worldwide L-band space and ground network and augments existing

SB or FB terminals, allowing return datalinks up to 2.8 Mbps. It enhances the functionality of the terminals, as it provides a high data rate communications link from a vehicle, maritime vessel or fixed-wing aircraft, fitted with an Inmarsat type-approved L-band terminal and antenna, as small as 10x10 inches and as light as 4.3 pounds, for each platform. The WiSL capability is enhanced with a COMSAT modem that injects a single channel per carrier (SCPC) signal through a high-gain antenna. WiSL is operated by COMSAT's two fully-staffed network operations centers (NOCs) located in Southbury,



(Photo: Comsat)

CT and Santa Paula, CA. The COMSAT NOCs operate on a 24/7/365 basis and provide continuous monitoring and service to fielded systems worldwide.

www.comsat.com

MS&D – International Conference on Maritime Security and Defence

(gwh) Parallel to the trade fair, SMM is organising the tenth MS&D – International Conference on Maritime Security and Defence. During the extended to two days conference on 6 and 7 September 2018, speakers and lecturers will deal with urgent topics from the fields of cyber security, climate change and marine technology. This is an opportunity to discuss the current status and future of maritime security with high-ranking global delegations of navies and coastguards as well as experts from business, science and administration.

Innovative solutions will be presented at the leading international trade fair SMM from 4 to 7 September 2018 in Hall B8 and along the Security Route. Topics include cyber attacks, piracy, port protection, ship security and anti-terrorism measures. Sellers and suppliers from the corresponding areas present their products and new developments to high-ranking target groups and decision-makers from all over the world. In top-class panel discussions, leading industry experts present their thoughts on current and future scenarios for debate and thus provide an opportunity not only to collect knowledge, but also to discuss and



(Photo: SMM)

exchange ideas.

Topics include: Regional Maritime Security, Global Warming and Maritime Security, Coastal Operations and Port Protection, Cyber Threats, Technological Cooperation, New Technologies and Unmanned Systems.

www.smm-hamburg.com/msd

25 Autonomous Shuttle Vehicles are Safe

(ck) A Dutch quantitative study into the ease of use of the autonomous shuttle vehicles has shown that they are considered safe and reliable by passengers. The Dutch municipality of Capelle aan den IJssel deploys the autonomous vehicles to connect the Rivium business park and metro station Kralingse Zoom.

Furthermore, the study shows that reliability is the decisive factor in passengers' readiness to use any kind of autonomous public transport. The study was conduc-

ted by Jochem van der Burg, a social geography student at Utrecht University. He focused on safety and security, reliability, travel time, information services, and comfort. The aim was to establish which of these operational factors most determine ease of use and how the insights gained from the study could be used in the decision-making process of autonomous transit systems elsewhere. Overall, 90% of the respondents were positive about the ease of use of ParkShuttle. Reliability proved to be the most decisive factor: four out of five respondents said they felt the system was



(Photo: 2getthere)

reliable, mainly because of its frequency and punctuality.

www.2getthere.eu

DVD2018 to Focus on Innovation and Army Transformation

(ck) The DVD2018 conference and exhibition will bring together industry and defence in the land equipment sector on 19 and 20 September at Millbrook. The event, jointly sponsored by Defence Equipment & Support (DE&S) and the Army Headquarters, will focus on 21st Century Manoeuvre and the importance of Army innovation to its future delivery and transformation. The theme for DVD2018 is "Innovation today and tomorrow: exploiting current capabi-

lities more creatively and identifying novel solutions to enable Conceptual Force Land 2035". Particular areas of interest developed through DVD2018 engagement between Defence industry, DE&S and Army Teams, presentations and workshops include the Army Strike concept; Specialised Infantry Group; Reducing Logistic Need (RLN); DEEP operations, and Command, Control, Communications, Computers, and Intelligence (C4I) systems. More than 250 companies will exhibit at the event. Displays will include mobile vehicle demonst-



(Photo: theevent.co)

rations, equipment suppliers, spares providers and service providers.

ESD is official media partner.

www.theevent.co.uk

Industry & Trade

Patria Releases Interim Report

(ck) The Finnish defence company Patria just released its interim report for the first half of FY2018. Patria Group's result for the first half of the year was at estimated level. Net sales totalled €232.6 million (€221.8 million in 2017). Operating profit was €10.0 million (€15.4 million). The decrease is mainly due to normal fluctuations in the international business, the company claims. A large part of the new orders is linked to the Systems and Land businesses and

their maintenance and life-cycle support services.

In the first half of 2018, Patria signed contracts with the Finnish MoD on the mid-life upgrade of the Hamina class fast attack craft, with Estonia on repair and maintenance of Estonia's Patria armoured vehicles, with Kongsberg on the supply of integrated command post shelters, and with Finland on bridge-laying equipment. Patria's outlook for the rest of the year is "optimistic" since Patria's

domestic customer, the Finnish Defence Forces, has significant projects (HX, SQ 2020) in progress.

General development and changes in the security environment have also increased defence budgets and readiness requirements. These are likely to have a positive effect for Patria's sales and profitability in the long run but not having an impact during 2018. The net sales are nonetheless estimated to improve from the last year.

www.patria.fi

MASTHEAD

ESD Spotlight

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

Editor-in-Chief: Dr. Peter Bossdorf

Managing Editor: Dorothee Frank (df)

Editors: Stephen Barnard (sb), Wilhelm Bocklet (wb), Gerhard Heiming (gwh)

Layout: Dorothee Frank



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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email to: esd.spotlight@mittler-report.de

I/ITSEC 2018

I/ITSEC is universally recognized as one of the world's largest and most important simulation training event. Combining a half million net square foot exhibition space with a robust conference agenda, I/ITSEC plays a vital and unique role in the world of modeling, simulation, and synthetic environments. I/ITSEC's dynamic, cutting-edge approach succeeds in bringing together top level military officials, key academic and research organizations, diverse government agencies, and corporate representatives from around the world. In 2018, I/ITSEC will focus heavily on the challenges of big data analytics, AI, and development of distributed training environments, all under the theme of "Launching Innovation in Learning". For 2018 approximately 450 exhibitors are expected in the exhibit hall, and more than 16,000 attendees. In the past few years, I/ITSEC has witnessed a dramatic increase in attendance by top level U/S. military representatives, who recognize the vital role training in artificial environments can play in a fluid, dynamic

national security environment. In fact, few eras in the history of military and national security affairs have witnessed more fundamental change than the one we are now experiencing. It is no exaggeration to state that we are at the dawn of a revolution so profound that the battlespace will be unrecognizable in a few short decades. The advent of multiple disruptive technologies, occurring more or less simultaneously, will fundamentally reshape the operational environment—compressing the decision matrix and thereby demanding commensurate sweeping changes in how we prepare and train. As we spend more, we should spend smarter – on robust but agile and adaptive capabilities to obtain and then maintain dominance over what have emerged as two very capable, agile, peer competitors.

I/ITSEC 2018 is indispensable to meeting the the training challenges of this new world of national defense. In Orlando from November 26-30 the future of training will be shown.

www.iitsec2018.org

Meet the ESD and ESD Spotlight teams at this selection of upcoming events:

4th International Symposium on Development of CBRN

The 4th International Symposium on Development of CBRN will once again provide a professional platform for encounters and exchange of the international CBRN protection community. International experts will inform representatives from the fields of politics, administration, industry, academia, civilian and military organisations about latest developments in security policy and provide an up-to-date risk assessment with a view to chemical, biological, radiological and nuclear risks and the challenges they represent for military and civilian systems when it comes to hazard prevention.

September 3-5, Berlin, Germany



DARPA's 60th Anniversary Symposium

D60 is a three-day Symposium hosted by DARPA in honor of its 60th anniversary. The Symposium will highlight DARPA's innovative approach to creating breakthrough technologies and capabilities from the Agency's past, present, and future. DARPA's mission requires a constant stream of novel ideas and contributions from innovators looking beyond what is possible now. D60 will provide attendees the opportunity to engage with up-and-coming innovators, scientists and technologists, as they continue to provide these contributions.

September 5-7, Washington, USA



MS&D – International Conference on Maritime Security and Defence

In its 10th year of existence, MS&D – the international conference on maritime security and defence – will attract more attention than ever. During the extended two-day conference, speakers and lecturers will address pressing topics – including cybersecurity, climate change and naval technology. Be part of it and seize the opportunity to get together with high ranking global delegations.

September 6-7, Hamburg, Germany



SAHA EXPO

The exhibition which is organised by Turkey's largest Defense and Aerospace Clustering Association, SAHA ISTANBUL, aims to bring together the national and international leading manufacturers that produce special products and systems for the defense industry, civil aviation and space industry. The exhibition, where advanced technological developments in these sectors will be exhibited, will also be a meeting place for representatives of public and private institutions and procurement delegations from domestic and foreign countries.

September 13-15, Istanbul, Turkey



DVD2018

The theme for DVD2018 is Innovation today and tomorrow:

exploiting current capabilities more creatively and identifying novel solutions to enable Conceptual Force Land 2035. The event will showcase the equipment and technology that can support a British Army that is fit to meet future challenges. DVD2018 will focus on 21st Century Manoeuvre and the importance of Army innovation to its future delivery and transformation.

September 19-20, Millbrook, UK



SOBRA 2018

SOBRA 2018, the 7th International Fair of Defence, Security, Protection and Rescue, will present equipment, know-how and the most important institutions that provide defence preparedness, citizen security as well as protection and rescue in natural and other disasters. It will offer professional exhibitions and conferences, with advice for visitors, dynamic presentations, as well as educational and social events in which among others the Ministry of Defence of the Republic of Slovenia, the Slovenian Armed Forces, the Police will participate.

September 20-23, Gornja Radgona, Slovenia

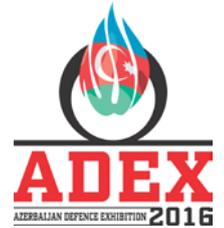


SOBRA

ADEX

Azerbaijan International Defence Exhibition, ADEX, is the largest event in the region, the aim of which is to present a wide range of military products while promoting the innovative development of the Azerbaijani military-industrial complex. The exhibition is also a platform for cooperation between foreign arms-producing companies and the Azerbaijani military departments and defence industry enterprises.

September 25-27, Baku, Azerbaijan

**it-sa**

As one of the leading international trade fairs for IT security, it-sa welcomed 630 exhibitors in 2017, making it the top fair worldwide in terms of exhibitor numbers. It showcases an extensive range of IT security products and solutions including physical IT security, services, research and consulting. At it-sa and the accompanying Congress@it-sa, decision-makers and IT security experts find comprehensive information on the latest issues in IT security.

October 9-11, Nuremberg, Germany

**FUTURE FORCES FORUM**

International exhibition and expert events on the latest trends and technologies in defence and security. All events are focused on the presentation of needs of armed and security forces, state-of-the-art technologies, R&D programmes, and business opportunities, with interactions between all participants due to the interconnected topics. Government, international organisations, industry, R&D institutions meet at one place. NATO and the European Defence Agency are involved in shaping the programme.

October 17 - 19, Prague, Czech Republic

**TechNet Europe 2018**

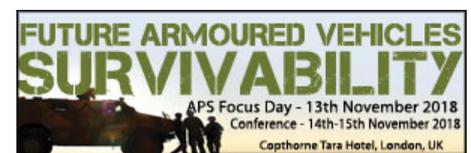
The two-day conference organised by AFCEA Europe in cooperation with the AFCEA Rome and Naples chapters, will be held under the patronage of the Ministry of Defence, Italy. Representatives from some of the highest levels of the European and NATO institutional, academic and industrial world will discuss the current situation, challenges and the various prospects of Maritime Situational Awareness.

November 6-7, Sorrento, Italy

**FUTURE ARMoured VEHICLES SURVIVABILITY**

As the only event purely dedicated to the area of vehicle protection, Future Armoured Vehicles Survivability 2018 will deliver a strong focus on the relationship between current requirements, emerging technologies and how these might be leveraged to enhance force protection. Building on 2017's focus day, SMi will host an exclusive pre-conference Active Protection Systems focus day, dedicated to this important capability.

November 13-15, London, UK

**NIDV-Symposium – 30th edition**

During the NIDV-Symposium and exhibition, more than 130 companies show their potential. The top political level of the Ministries of Defence, Economic Affairs, Foreign Affairs and Security & Justice are invited. A special programme for the military attachés accredited in the Netherlands is offered. Sister organizations of the NIDV from abroad are also invited. And last but not least, representatives of the armed forces, the police, the fire brigade, the ambulance dispatch center, the coast guard and other public security organizations are present.

November 15, Rotterdam, The Netherlands

