

FEINDEF 2019 – Una Feria Impresionante

Jürgen Hensel

Organised by the two industrial associations TEDAE (Asociación Española de Empresas Tecnológicas de Defensa, Seguridad, Aeronáutica y Espacio) and AESMIDE (Asociación de Empresas Contratistas Con las Administraciones Públicas de España) and strongly supported by the Spanish Ministry of Defence the first-ever FEINDEF exhibition took place at Madrid's IFEMA Exhibition Centre from May 29 to 31, 2019.

Some 140 industrial exhibitors took advantage of the event, and in addition the show grounds featured dedicated exhibits of the three services of the Spanish armed forces, as well as of the Ministry of Defence and the Ministry of the Interior. From every point of view the event was very well organised and accompanied by an impressive schedule of dedicated presentations and briefings.

Among the official VIP visitors to FEINDEF were the Minister of Defence, Margarita Robles (pictured hereunder), the Secretary of State for Defence, Ángel Olivares, the Chief of Defence (JEMAD), General Fernando Alejandro Martínez, as well as the chiefs of Army, Navy and Air Force and the Director General of Materiel (DGAM), Admiral Santiago González Gómez.

There was remarkably busy traffic on the exhibition floor, and according to the organisers' estimation FEINDEF 2019 attracted the interest of more than 10,000 visitors.

Objetivos

Although mainly focussed on the Spanish defence market with foreign companies mostly represented by their Spanish subsidiaries - exceptions included Iveco, Leonardo, Lockheed Martin and Rafael - the presidents of TEDAE, Jaime de Rábao, and AESMIDE, Gerardo Sánchez Revenga, explained during a press briefing, that FEINDEF's major objectives included:



- Strengthening the role of Spain in the European security and defence environment, with Spain to play a key role in future European defence, and
- Providing a bridge to and for the Latin American defence community.

Against this background both protagonists pointed out that already this year the exhibition had attracted the interest of 48 international delegations from 32 countries in Europe, Africa, the Middle East and Latin America, thereof 15 Latin American chiefs of armed forces.

With 77 member companies TEDAE is dedicated to the representation of industries with capabilities at system level, whereas AESMIDE (65 members)

regards itself as a supporter of mainly the SMEs in Spain's defence industrial base.

FUERZA 35

The Spanish Army used FEINDEF 2019 to draw attention to their FUERZA 35 concept, which describes the land forces' materiel requirements until the year 2035 and covers a wide spectrum of equipment already in service (like the Leopard 2 E fleet), equipment under development/subject to procurement (like the DRAGÓN/Piranha 5 8x8 vehicle) and materiel requirements yet to be determined in detail. The latter includes for example an active protection

system for the Army's combat vehicles and the introduction of artificial intelligence for applications like Rafael's FIRE WEAVER system.

Remarkably enough, not all of the new programmes will be subjected to a competitive tendering process. Instead, the Army prefers to accompany and influence certain selected industrial development programmes intended to result in equipment items tailor-made in response to the requirements of the service.

EI DRAGÓN

With a volume of €2.1 billion and designated DRAGÓN, the Ministry of Defence plans to award the contract for 348 type Piranha 5 8x8 vehicles following a test campaign to commence in July this year. The tests will be executed by the Army involving five different prototypes. As it has yet to be decided what kind of armament the vehicles will be equipped with, a battle is going on between the bidders of the turret systems for the 30mm Bushmaster chain gun.

At present, there are tendencies indicating that the Cavalry might prefer a manned turret which is expected to offer better visual conditions for reconnaissance missions, whereas the Infantry's preference is believed to be for an unmanned, remote-controlled turret system.

Seven companies and consortia have indicated an interest to become the supplier of choice. Against this background, Rafael of Israel used FEINDEF to draw attention to their partnership with the Spanish companies PAP TECNOS S.A. and Tecno-bit for the Samson 30mm turret, and Navantia, EXPAL and Elbit announced their teaming arrangement for Elbit's UT-30MK2 (unmanned) and MT30 (manned) turret systems dubbed Tizona in response to the DRAGÓN requirement. Leonardo is the third foreign contender, bidding in a partnership with Escribano and Indra.



Other variants of the vehicle (final numbers yet to be decided) will include engineer and forward observer vehicles with remote-controlled weapon stations.

PIZARRO ECV

Another "first" at FEINDEF was General Dynamics European Land Systems Santa Bárbara Sistemas' (GDELS SBS) introduction of the combat engineering variant (ECV) of the PIZARRO (programme designation: ASCOD) armoured tracked vehicle. The Engineering Combat Vehicle has been commissioned by the Spanish Ministry of Defence and complements the different variants already delivered as part of Phases I and II of the PIZARRO programme, in total 225 vehicles.

In the scope of the programme valued €786 million, the Spanish Army plans to field a total of 36 vehicles of this type, of which 25 are to be delivered in 2020 and



10 in 2021. The vehicles will be manufactured and assembled at the company's Asturias and Sevilla sites.

Airbus: Contrato Logístico

Airbus and the Spanish Air Force confirmed a logistics agreement at FEINDEF. Called Drone and Augmented Reality inspections, the technology provides maintenance, repair and overhaul (MRO) operators with an end-to-end digital solution that facilitates the performance of tasks, while guaranteeing quality and adherence to airworthiness standards.

The Drone and Augmented Reality inspections services are being jointly developed by Airbus with a military service for inspections of Airbus-built A400M heavy-lift airlifters. Its application could be further extended to cover three other Airbus military airlifters: the medium-lift CN235 and C295 transports; along with A330 MRTTs (Multi Role Tanker Transports).

El Futuro

The next FEINDEF, for which the organisers expect a significantly higher number of international exhibitors, will be held in 2021 during the Spanish Armed Forces Week, the date of which has yet to be determined.

European Debut Of Ansat

(df) Russian Helicopters Holding Company present the multi-purpose Ansat helicopter for the first time in Europe at the 53th International Paris Air Show, that started today in Le Bourget. Ansat is shown in both its medical and VIP transport variants at the static display as well as in the flight programme.

The light multi-purpose helicopter Ansat, which has one of the largest cabin in its class, is used by the Russian air medical services. This twin-engine helicopter has compact size and does not require a large landing area. It can also be used for normal passenger and VIP transport, cargo delivery and environmental monitoring. High-altitude tests of Ansat have been successfully completed, which confirmed the possibility of its use in mountainous terrain at altitudes up to 3,500 meters. The helicopter can be operated in a temperature range between -45 and +50 degrees Cel-



(Photo: Russian Helicopters)

sius. Its significant advantage is the possibility of storage out of the hangar and low cost of operation.

The medical Ansat is equipped with a certified Austrian-made medical module that meets all international air ambulance standards.

“The European premiere of Ansat is especially important for us, as it will demonstrate our competence in the field of civilian helicopter building at one of the

most prestigious air shows in the world,” said Director General of Russian Helicopters Andrey Boginsky. “The holding pays great attention to the development of this segment. We managed to increase the share of civilian helicopters in our total output from 5% in 2014 to 40% in 2018. We plan to continue moving in this direction in order to reach the figure of more than 50% in 2020.”

www.russianhelicopters.aero

Iron Dome In Paris

(df) At the Paris Air Show Rafael concentrates on its combat-proven, globally-supplied advanced solutions. Addressing various air force programmes, Rafael is showcasing its array of aerial systems ranging from electro-optical pods (Litening and Reccelite), electronic warfare (Skyshield, Liteshield), air-to-air missiles (Python-5, I-Derby), air-to-ground munition (SPICE), and communication (BNET) as a base platform for seamless, uninterrupted mission operation.

One of the most famous and interesting technologies is surely the Iron Dome, with over 2000 combat interceptions and a 90% success rate. Rafael is presenting newly-developed multi-mission capabilities, scalability



(Photo: Rafael)

and mobility, to provide both stationary and maneuvering forces with the ultimate defense solution against a wide spectrum of threats ranging from very short range mortars and rockets, to UAVs, aircraft (fixed-wing and rotary), up to threats launched from ranges of 70 km on land and at sea (C-DOME). Iron Dome's mobile variant (i-Dome) is an integrated configuration that enables all system components to be installed

on one single truck, providing protection of motorized or mechanized troops, as well as point air defense of military/industrial/administrative installations.

Rafael is also addressing various European digitization programmes, these systems support the needs of communication in the battlefield through Rafael's patented BNET, with Multi-frequency Channel Reception (MCR) capability, differentiating it from conventional MANET SDR solutions. BNET provides a high-speed broadband data, voice and video network on-the-move. It has been tried and tested by the Israeli Armed Forces in several different training scenarios.

www.rafael.co.il



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Ocean Surveillance Control And Reconnaissance Solution

(df) BIRD Aerosystems officially launched the Ocean Surveillance Control and Reconnaissance solution (OSCAR) at the Paris Air Show 2019. Combined with a secure over-the-cloud deployment and multi-sensor integration, OSCAR is a quick to deploy Maritime Domain Awareness (MDA) solution delivering real-time intelligence and threat assessments for vessels in the country's areas of interest.

Being a fully autonomous and advanced multi-sensor system, OSCAR applies machine-learning algorithms on real-time data sources such as satellite and terrestrial AIS, satellite SAR/EO/IR, LRIT, coastal radars, tactical sensors and more, and uses it

to detect, analyze and prioritize suspicious vessels while providing automatic alerts to the user once these threats are identified. Once OSCAR detects potential threats, it plans an effective flight plan for the ASIO special mission aircraft which is then loaded into the MSIS mission management system to enable an effective surveillance mission. Additionally, during the mission OSCAR receives the real-time tactical sensor data of the aircraft which is then further analyzed to detect additional possible threats.

Alongside the OSCAR, BIRD also presents its patented Self Protection Radar Electro-Optic System (SPREOS) DIRCM, which combines a radar-based confirmation sensor and an active laser jammer to ensure



(Photo: BIRD Aerosystems)

optimal protection against different MANPADS threat types. The patented SPREOS performs threat confirmation to ensure zero false alarms; hence jamming will be activated only when the threat has been confirmed and analyzed.

www.birdaero.com

Future Combat Air System At Diehl Defence

(df) The Franco-German military cooperation project Future Combat Air System (FCAS) is one of the main topics at this year's Le Bourget Air Show. Diehl is also showing a possible contribution. Diehl will accompany system leader Airbus Defense and Space during the two-year joint concept phase and contribute its recogni-

zed expertise in the field of avionics (cockpit, integrated modular avionics, avionics and mission computing platforms, flight control) as well as armament, self-protection, and multispectral sensors.

Diehl is a long-established first-tier supplier in the civil and military aviation industry for avionics products, cabin management systems, smoke detection and fire fighting components and cabin lighting as well as

for guided missiles, ammunition, training and self-protection systems and other products. Visitors to the booth in Le Bourget can look at a cabin study on the SYLVIA concept cabin layout as well as exhibits on cabin management systems and avionics components. Numerous exhibits from the missiles portfolio and ground-based air defence are also on display.

www.diehl-defence.de

Highlights At ASELSAN

(df) At Paris Air Show ASELSAN has a strong footprint with their newest technologies and systems, ranging from ATAK helicopter avionics and guidance kits to anti-drone systems and handheld radios.

ASELSAN avionic systems have already become a source of confidence worldwide. For example under an agreement with Sikorsky, ASELSAN's Integrated Modular

Avionics System (IMAS) will be responsible for the management of the systems in the helicopter programme known as the Turkish General Utility Helicopter Program. At least 250 Sikorsky Black Hawk helicopter platforms will be outfitted with ASELSAN's IMASs. More than half of these platforms will be in service of pilots around the world, with avionic architectures engineered by ASELSAN.

Another highlight at the booth is the next generation Modular Avionics Touchscreen Environment (MATE), that is currently being tested on the T-625 Multirole Helicopter. The smart cockpit solution, providing 3D Sound, synthetic vision and automatic speech recognition is also considered for the Turkish Fighter Aircraft platform.

www.aselsan.com.tr



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Technology

Connected Airborne Battlespace Scenario

(df) Airbus announced a successfully completed flight demonstration of a connected airborne battlespace scenario, centred on a MRTT aircraft. The test was carried out as part of the development of Airbus' Network for the Sky (NFTS) programme. This follows on from last August's demonstration in Canada of secure mobile communications using a stratospheric balloon to simulate a HAPS (High Altitude Pseudo Satellite), such as Airbus' Zephyr UAV (Unmanned Aerial Vehicle).

NFTS combines various technologies – satellite and ground communications, air-to-ground, ground-to-air and air-to-air tactical links, 5G mobile communications and laser connections – in a resilient and interoperable mesh network. For this demonstration an MRTT aircraft had been equipped with Janus, Airbus' new tri-band (Ku-Ka-MilKa) satellite antenna, as well as the latest ver-



sion of the Proteus satellite modem, which is highly resilient against interference and jamming, and Airbus' aircraft links integration management system (ALIMS). This exercise paves the way for the development of the core capability for SMART MRTT connectivity, which will allow the MRTT to act as a high-end communication node. Network for the Sky (NFTS) sets

the foundation for the connected airborne battlespace, with the objective to offer a full operational capability by 2020.

The NFTS programme is part of Airbus' Future Air Power project and, according to the company, it is fully aligned with the development of the European Future Combat Air System (FCAS).

www.airbus.com

Deep Learning Model Automates Satellite Image Analysis

(df) Lockheed Martin announced it has developed a satellite imagery recognition system named Global Automated Target Recognition (GATR). This system uses open-source deep learning libraries to quickly identify and classify objects or targets in large areas across the world. This might save image analysts countless hours of manually categorizing and labeling items within an image. GATR runs in the cloud, using Maxar's Geospatial Big Data platform

(GBDX) to access Maxar's 100 petabyte satellite imagery library and millions of curated data labels across dozens of categories that expedite the training of deep learning algorithms.

GATR learns by itself what the identifying characteristics of an object area or target are, for example, learning how to distinguish between a cargo plane and a military transport jet. The system scales quickly to scan large areas, including entire countries. GATR uses deep learning techniques common in the commercial sector and can identify ships, airplanes, buildings, seaports, and other structures.

So far the system has shown a high accuracy rate of well over 90% on the models the company has tested so far. It only took two hours to search the entire state of Pennsylvania for fracking sites – that is 120,000 square kilometers, Lockheed Martin stated.

"There is more commercial satellite data than ever available today, and up until now, identifying objects has been a largely manual process," said Maria Demaree, vice president and general manager of Lockheed Martin Space Mission Solutions. "Artificial Intelligence models like GATR keep analysts in control while letting them focus on higher-level tasks."

"I am not an expert on what oil production sites are, and I don't have to be," added Mark Pritt, principle investigator for GATR at Lockheed Martin. "This system teaches itself the defining characteristics of an object, saving valuable time training an algorithm and ultimately letting an image analyst focus more on their mission." GATR builds on research Pritt's team pioneered during a Intelligence Advanced Research Projects Activity (IARPA) challenge, called the "Functional Map of the World."

www.lockheedmartin.com



(Screenshot: Lockheed Martin)

2in1 UAS Vector And Scorpion

(gwh) ESG and Quantum-Systems GmbH presented with Vector (span 2.8 m, < six kg) and Scorpion (span 0.85 m, < five kg) world firsts in the field of electrically operated unmanned systems for tactical deployment scenarios during the „Unmanned Systems“ forum of the DWT. Vector combines the advantages of a fixed-wing aircraft with the vertical take-off capability of a helicopter.

By simply changing the configuration, Vector becomes a Scorpion and a fixed-wing



(Artwork: ESG)

aircraft a Tri-Copter, allowing a fast and flexible response to changing mission scenarios.

The electrically operated Vertical Take-Off and Landig (eVTOL) systems can be connected to command systems with a range of at

least 15 km. The HD data link is encrypted according to the AE standard. The UAS are equipped with electro-optical/InfraRed HD cameras in cardanic suspension (800 g).

The vector can fly up to 120 minutes as a fixed-wing aircraft with vertical launch capability in the speed range 15 to 25 m/s. The vector can also be used as a fixed-wing aircraft with a vertical launch capability. Scorpion flies as a Tri-Copter up to 45 minutes in the speed range 0 to 15 m/s.

www.esg.de

www.quantum-systems.com

Drone And Augmented Reality For Inspection

(gwh) Together with the Spanish Air Force Airbus is developing procedures for the



(Photo: Airbus)

use of drones and augmented reality to intensify and accelerate maintenance work on military aircraft. The aim of this digital SmartForce Services development is to reduce maintenance inspections and increase fleet availability.

The technology is based on drones equipped with sensors and high-resolution cameras to scan the exterior of an aircraft within hours (instead of days). In addition to shortening the inspection time, the

technology will improve early detection of defects is improved. This ensures quality and airworthiness after maintenance.

This innovative digital technology will initially be tested on A400M Spanish Air Force aircraft at Air Base Zaragoza (31st Wing), with options to extend the technology to other aircraft, including the C295 and CN235.

www.airbus.com

www.ejercitodelaire.mde.es

Portable Explosives And Hazardous Materials Scanner

(gwh) As part of the EU project CHEQUERS, the Fraunhofer Institutes for Applied Solid State Physics IAF and for Photonic Microsystems IPMS are involved in the develop-

ment of a portable explosives and hazardous materials scanner. The scanner can be used to identify hazardous substances quickly without the need for contact.

The prerequisite for stand-off spectroscopic detection is a compact and quickly tun-

able laser source. IAF and IPMS have developed a miniaturized quantum cascade laser with external resonator that covers the entire spectral range of the QC laser chip within only 1 millisecond.

www.fraunhofer.de

Safe Autonomous Driving

(gwh) Rapid reaction to environmental influences - in particular to people and objects that get in the way - is an essential prerequisite for the safe autonomous driving of land vehicles.

The Fraunhofer Institute for Reliability and Microintegration IZM, together with partners from industry (AVL, Jabil Optics, John Deere, InnoSenT, Silicon Radar) and research (DCAITI, Fraunhofer Institute for Open Communication Systems FOKUS), is currently developing a camera radar module that will detect road traffic chan-

ges more quickly. The camera and radar data are then merged by data fusion and processed and filtered by the module; irrelevant information is not being transmitted. No status information is being transmitted, but only response instructions to the vehicle. To do this, the system takes 10 milliseconds, during which time the vehicle travels at 50 km/h less than 15 cm. During this time, the information is transmitted to the vehicle. (People react after 1.6 seconds = 22 m, common sensor systems react after 0.5 seconds = 7 m). Now the radar sensor module is being tested on the road. When



(Photo: Fraunhofer)

the project has been completed next year, series production could begin and the small grey box might make the traffic with autonomous vehicles more safe.

www.fraunhofer.de

www.izm.fraunhofer.de

Assault Rifle System IWI Carmel

(ww) Israel Weapons Industries (IWI) has developed a new assault rifle system. The IWI Carmel in caliber 5.56mm x 45 features high modularity and ergonomic operation on both sides: Both the fire selection lever and the bolt catch and magazine retaining lever can be operated with both hands. The throughloading lever can be moved to the other side of the gun. The firing sequence is 850 shots/minute.

The Carmel does not follow the Bullpup



(Photo: IWI)

but a classic assault rifle architecture. The empty weapon, which weighs only 3,300 grams and has no optics, has an adjustable gas take-off which can be regulated in three stages (normal, heavy contamination, si-

lencer). The barrel can be changed by the user and is available in four lengths: 10.5", 12", 14.5" and 16". A one-piece Mil-Std 1913 aluminium rail is located on the top of the housing. Further „Picatinny“ are available in the 3, 9 and 6 o'clock positions. The length- and height-adjustable shoulder rest can be folded to the side of the case. Thus the minimum weapon length for a 10.5" barrel is 526 mm, maximum 806 mm. The Carmel uses AR-15 type magazines.

www.iwi.net

THeMIS in Spring Storm 2019

(ww) The THeMIS Unmanned Ground Vehicle (UGV) from FN Herstal and Milrem



(Photo: Milrem)

Robotics was used for the second time during the Estonian exercise Spring Storm. THeMIS, developed by the Estonian company Milrem Robotics, was equipped with FN HERstal's deFNder remote-controlled weapon station, which was equipped with a heavy .50 machine gun. The „Man-in-the-Loop“ system was controlled via a remote control and a screen or display glasses.

This year's second mission at Spring Storm was intended to provide further insights into the use of unmanned land platforms

as combat multipliers. During the maneuver soldiers of the Kuperjanov Infantry Battalion used the THeMIS. The soldiers had to fulfill offensive and defensive orders in different situations. The missions took place in rural as well as in urban surroundings. Spring Time is the largest annual manoeuvre in Estonia. It took place this year from April 29 to May 17, 2019.

www.fnherstal.com

www.milremrobotics.com

GlobalEye For Finland

(df) Saab announced that its Gripen offer to Finland also includes two GlobalEye Airborne Early Warning and Control (AEW&C) aircraft. GlobalEye is a strategic asset, which can be in operation 24/7 for airspace and ground surveillance. Thus, the total proposal comprises 64 Gripen aircraft, of which 52 are single-seat Gripen E and 12 are dual-seat Gripen F, as well as two Globa-

lEye AEW&C aircraft. Finland has stated that it will take a procurement decision in 2021.

GlobalEye is the one of the most advanced AEW&C solution for air, sea and land surveillance in a single, multi-role solution. It offers extended detection range, endurance and the ability to perform multiple roles, including tasks such as search and rescue, border surveillance and joint mi-



(Photo: Saab)

litary operations. GlobalEye is currently on contract and in production.

www.saab.com

Unmanned Black Hawk

(gwh) Sikorsky has developed a fully-fledged fly-by-wire flight control system for the UH-60A (Black Hawk) helicopter that allows the helicopter to be used as an optional remote-controlled system.

As part of the flight test program, the helicopter was launched with fly-by-wire flight control in late May 2019. Subsequent flight tests are designed to extend the helicop-

ter's functionality to a fully autonomous flight (without pilots in the aircraft) by 2020.

Sikorsky's fly-by-wire retrofit kit completely replaces the mechanical flight control. The OPV (Optional Looted Vehicle) approach was developed as part of the DARPA Aircrew Laboratory In-Cockpit Automation System (ALIAS) program to fly aircraft safely, reliably and affordably in optimally



(Photo: Sikorsky)

controlled modes that allow a two, one or zero crewflight.

www.lmco.com

Belgian-Dutch Mine Detection Programme

(hum) The contract to build the 12 new mine warships for the navies of Belgium and the Netherlands was awarded on 22 May to the Belgian consortium BNR (Belgium Naval and Robotics), founded by the two French companies Naval Group and ECA. After the decision for BNR had already been made in mid-March, the award of the contract had been delayed. Antwerp's Engine Deck Repair (EDR), a company from the competing consortium "Sea Naval Solutions", had appealed to the (Belgian) Conseil d'Etat against the proceedings. After their rejection, the project was able to pass the Dutch parliament in early May. The official award of the contract took place four days before the Belgian parliamentary elections. The contract is to be signed shortly – probably after the constitution of a government. So far, a planning phase of three years has been assumed. The first unit with drone systems is to be delivered in 2024. From 2025 the ships will be delivered alternately to the Netherlands and Belgium. The last delivery is scheduled for 2030. The Belgian-Dutch programme, valued at



(Photo: BNR)

more than 2 billion euros and led by Belgium (the Netherlands is responsible for the four new frigates), envisages the completion of six MCM units (mother ships and drones) for each of the two countries. The ships, with a length of around 80 metres and a displacement of around 2,800 tonnes, will be built in Brittany by Naval Group and Piriou (through their joint venture Kership).

The INSPEKTOR 125 developed by ECA will be part of the programme, as will an innovative launch and recovery system on board the mother ships, and autonomous A18-M underwater vehicles (AUV), T18-M towed sonars and mine detection and destruction systems (MIDS) (remo-

te-controlled SEASCAN and KSTER-C vehicles (ROV)). All these drones should be able to operate autonomously from the INSPEKTOR 125 UPS. The drone system also includes unmanned aerial vehicles (UAVs).

The Belgian consortium BNR promises a turnover of €4 billion and 7000 jobs in Belgium over the next 20 years. The regional characteristics of the neighbouring country will be taken into account: in Flanders the economic return should be 50%, in Wallonia 35% and in Brussels 15%. In Zeebrugge, an industrial competence centre for mine warfare with a drone production plant is to be established, in which more than 1500 units are to be produced. Flanders Ship Repair (Zeebrugge) will be responsible for the maintenance of the ships. A concept centre for the design of unmanned vehicles is to be built in Brussels. "The cooperation plan associated with the contract already includes 39 Belgian partners, and the announcement of the contract will make it possible to conclude the last fifty agreements," says a statement by BNR on the occasion of the official award of the contract.

www.belgium-naval-and-robotics.be

Launch Of The First BARRACUDA

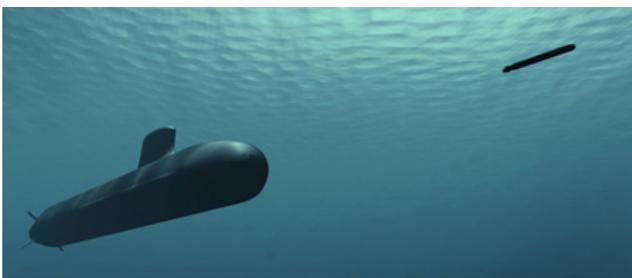
(hum) With reference to industrial sources, French daily newspapers report that the Barracuda programme will be officially launched in Cherbourg on July 12. The SUFFREN, the first nuclear-powered submarine of the new generation from the Naval Group program, will be transferred from the construction hall to a kind of boat lift/floating dock in a ceremony in the presence of the French Defence Minister Florence Parly, from where the actual launch

will take place a few weeks later. Obviously, Paris is keen to make this milestone public even before the French national holiday on July 14.

The boat is expected to be delivered to the French Navy at the end of 2020. The delivery was originally scheduled for 2017 and then for 2019. France ordered six SNA Barracuda in 2006 as one of its most important defence projects of the decade. At that time, the programme was worth €7.9 billion. According to the French media, the costs now amount to 9.1 billion euros. The delivery plan is established as follows: DUGUAY-TROUIN, TOURVILLE and DE GRASSE until the end of 2025, RUBIS 2027 and CASABIANCA 2029.

The submarines of the Barracuda class, which are to replace the six boats of the Rubis class put into service between 1983 and 1993, are 99 meters long with a displacement of 4,650 tons. They will be equipped with four 533 mm torpedo tubes (to accommodate the new heavy F21 torpedoes, Exocet SM39 anti-ship missiles and MdCN (Missile de Croisière Naval) cruise missiles). Their missions include submarine defence, ship combat, support for land-based operations, reconnaissance and special operations. SAPHIR will be the first of the RUBIS class to retire by the end of the year. With a conventionally powered variant of the BARRACUDA, Naval Group in Australia was able to bring in the construction of 12 submarines against international competition.

www.naval-group.com



(Artwork: Naval Group)

Industry & Trade

Poseidon Unites Naval Group and Fincantieri

(hum) In October 2018, the two CEOs Giuseppe Bono (Fincantieri) and Hervé Guillou (Naval Group) founded the joint venture EURONAVAL. Much time has passed since then. On 14 June, a cooperation agreement was signed, known as „Poseidon“ (the powerful and quarrelsome sea god who was not afraid of conflicts with Zeus, the father of the gods).

Fincantieri and Naval Group are on their way to a 50/50 joint venture, which should be completed by the end of the year. Perhaps it is the difficult ownership structure behind both companies and their subsidiaries that makes the merger difficult. The Naval Group is owned 35% by Thales and 62.5% by the French government. Fin-

cantieri, the largest shipbuilder in Europe, holds 50% of the shares in Chantiers de l'Atlantique (formerly STX France), but Paris is irritated about this and has therefore applied for an EU antitrust review - much to Rome's regret. But maybe it is only the competition between the two that continues to exist in spite of the joint efforts, which, despite the rapprochement, has lost none of its sharpness.

We now have the facts on the table: Last Friday, on board the frigate FREDERICO MARTINENGO in La Spezia, a cooperation agreement was signed in which the operational conditions for setting up a 50/50 joint venture were laid down. It is a jointly developed and marketed frigate of the FREMM class (Frigate Multi Mission), which more than any other project symbolizes twenty years of cooperation between the two nations in this field. In order to increase efficiency, the main task of the joint venture will be to combine purchasing, research and development and the export of surface vessels. Initially, according to reports, there will be no mutual exchange of shares.

On the basis of this agreement, the company will have its headquarters in Genoa and a subsidiary, a development centre in Ollioules in the Var region of southern France. The management of the Joint Venture, which is governed by a shareholders' agreement, provides for a Board of Directors of 6 members, 3 of whom are appointed by each company (Giuseppe Bono and Hervé Guillou have already



(Photo: Fincantieri)

been appointed). For the first term of three years, Fincantieri appoints the Chairman (Giuseppe Bono) and the Chief Operational Officer, while Naval Group appoints the Chief Executive Officer and the Chief Financial Officer. Naval Group has appointed Claude Centofanti as CEO.

Competition in the industry is intensifying and Chinese competition in particular is overwhelming. On the other side of the Rhine, a very cautious approach is being taken, in line with Emmanuel Macron's call for stronger EU emphasis on China. In the June 17 issue, Le Monde prominently featured the competitive pressure: „Last year, the Chinese CSSC (China State Shipbuilding Corporation) became the world's largest military shipbuilding company (turnover €10 billion) (ahead of the previous leader, US General Dynamics with €7 billion), while next year a Russian company is expected to be the second largest. In this respect, the joint venture is the first of its kind in cross-border military shipbuilding and symbolizes the desire of both countries to remain competitive when it comes to naval shipbuilding.

MASTHEAD

ESD Spotlight

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Esa Rautalinko President and CEO of Patria

(gwh) Esa Rautalinko will become President and CEO of Patria Group on July 1, 2019. He succeeds CFO Ville Jaakonsalo, who, following the resignation of CEO Olli Isotalo in January 2019, assumed the duties of acting President and CEO.

Rautalinko is currently CEO of the Örum Group and since November 2018 also Chairman of the Board of Directors of Patria. In addition, he is and has been active in top industrial applications and in associations.



NCT Europe

This year will see the 8th edition of the amazing CBRNe, C-IED, and EOD event, NCT Europe 2019 in Vienna, Austria from June 25 - 27. The collaboration with the Austrian Ministry of Defense guarantees the presence of regional and international stakeholders: from the highest-level decision-makers to civil and military first responders. Whilst passing through the NCT industry exhibition showcasing of novel technologies, take part in the latest discussions on the newest ways to combat ever-evolving CBRNe threats.

June 25 - 27, Vienna, Austria



International Armored Vehicles USA

On June 25 - 27 International Armored Vehicles heads to Austin Texas, the new home of the U.S. Army Futures Command. IAVs USA will provide one of the first opportunities for the leading decision makers on the NGCV programmes, international US allies, platform user groups and key industry stakeholders to collectively discuss the best way forward for the NGCV portfolio in a meaningful way.

June 25- 27, Austin, USA



31st International Helicopter Forum

On July 3 - 4 the helicopter community will gather in Bückeburg, Germany. The Helicopter Centre has invited to the 31st International Helicopter Forum to talk about "New Challenges for Vertical Flight." Session topics will be "Helicopter Operations" and "Technology meets Capability" with a focus on equipment. Representatives from Bell, Sikorsky and Boeing will give insights into their programmes for "Future Vertical Lift." Other sessions on "Rotary UAS and Manned-Unmanned Teaming" as well as on "Training and Education" complete the Forum's presentation programme.

July 3 - 4, Bückeburg, Germany



Close Combat Symposium 2019

This year the aim of the symposium is to consider trends and developments in small arms, dismounted weapon systems, ammunition, sensors, optics, and protective clothing and equipment. The revised theme of 21st Century Infantry also seeks to examine additional opportunities for capability enhancements in the near-term, some of which will require new development.

July 9 - 11, Shrivenham, UK



MSPO

For 27 years, the September-held International Defence Industry Exhibition has been the presentation platform for companies from all corners of the world which proudly showcase their greatest achievements. Yet the expo is much more than a comprehensive presentation of military gear and equipment. The expo abounds with business meetings. This years MSPO is held under the banner of the United States as the expo Lead nation.

September 3 - 6, Kielce, Poland



DSEI

This years DSEI will connect governments, national armed forces, industry thought leaders and the global defence & security supply chain. With a range of valuable opportunities for networking, a platform for business, access to relevant content & live-action demonstrations, the DSEI community can innovate, share knowledge, discover & experience the latest capabilities across the Aerospace, Land, Naval, Security & Joint domains.

September 10 - 13, London, UK



The 13th CBRNe Protection Symposium

The 13th CBRNe Protection symposium is under the motto science for safety & security. The scientific programme consists of keynote lectures with distinguished speakers and three parallel oral sessions throughout the symposium as well as poster presentation. The CBRNe protection equipment exhibition will be arranged in connection with the symposium.

September 24 - 26, Malmö, Sweden



Arms and Security

The XVI international specialised exhibition "Arms and Security – 2019" will be held in Kyiv, Ukraine from October 8 - 11, 2019. The exhibition will have two main parts: weapons and equipment for army and law enforcement, and arms for civilians.

October 8 - 11, Kyiv, Ukraine



BIDEC

Following the hugely successful inaugural edition of BIDEC in 2017, BIDEC will return on October 28 - 30, 2019 at Bahrain International Exhibition & Convention Centre. BIDEC is fully supported by the Bahrain Defence Force, and presents a unique opportunity for exhibitors to showcase the latest technology, equipment and hardware across land, sea and air.

October 28 - 30, Sanabis, Bahrain



DEFENSE & SECURITY 2019

This biennial event will be held on November 18 - 21. The show is fully supported by the Thai Ministry of Defence. The theme for the show is "The Power of Partnership" and it will be aligned with ADMM Retreat as noted. The MOD plans to host ADMM Retreat in conjunction with D&S2019. Part of the Ministers schedule will be attending the opening ceremony and will also participate in the show.

November 18 - 21, Bangkok, Thailand



DSEI Japan

DSEI Japan is set to be the first fully integrated defence event to be held in Japan, marking the first time a "DSEI"-branded event has been held outside of London. DSEI Japan will bring the global defence and security sector together with the entire Japanese defence community to innovate, partner and share knowledge, bringing together companies from across the industry on an unrivalled scale.

November 18 - 20, Chiba, Japan



Expodefensa

Expodefensa is an international exhibition and the point of reference for Latin America where all the Security and Defense players, from public and private sectors, can find solutions for ensuring peace and security in the air, on land and at sea.

December 2 - 4, Bogota, Colombia

