During the last decade the security framework has undergone profound changes inside and outside Spain which have had important implications for the nature and the use of military power, causing changes in capabilities, organisation and modes of action of our Armed Forces.

As a result from the role of Spain in the Euro-Atlantic framework, its geographical situation (between Europe and Africa, the Mediterranean and the Atlantic) and its own territorial management (which includes island territories and autonomous cities), which provide a special dimension to its defence, there are risks involved which cannot always be shared with our partners and allies.

The so-called Southern Arc, ranging from Afghanistan to North Africa through the Middle East, is home to four wars (Iraq, Libya, Syria and Yemen), emerging internal conflicts (Egypt) and strained relations between states (Iran - Saudi-Arabia). It is a permanent source of instability affecting European security due to its connection with terrorist attacks in European cities or mass migration flows amid dire humanitarian conditions.

Thus, the existence of weak or failed states in North Africa, the Sahel, the Gulf of Guinea and the Horn of Africa, along with the vulnerability of the maritime areas of the Mediterranean and their avenues of approach, make these areas vital to the interests and security of Spain.

Moreover, on the eastern flank of the Euro-Atlantic cooperation, Russia has violated the rules of the international system with the annexation of Crimea and the destabilisation of Ukraine. Thus, it is trying to regain its superpower status, rebuilding its former sphere of influence and strengthening the capabilities of its armed forces.

The National Security Strategy 2013 establishes Spain’s commitment to the system of collective security based on its integration in international organisations in which it participates and through its active contribution to operations abroad, carrying out actions that contribute to the development of the external action of the state and improving Spain’s international position.

Today, the establishment of strong, while flexible, collaborative relationships is essential at the multinational level. Thus, Spain firmly believes that its defence policy must be of a shared and cooperative nature, so that this collective effort must primarily be implemented through international organisations, mainly the Atlantic Alliance (NATO) and the European Union (EU), without forgetting the importance of the UN as the most important organisation for global cooperation and source of international law.

With the possible departure of the United Kingdom from the EU (Brexit) a new stage has opened that will require greater cooperation between NATO and the EU, as submitted...
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ESD SPOTLIGHT

this October in the letter sent by the defence ministers of France, Germany, Italy and Spain to their European counterparts. It is necessary to implement a package of measures to revitalise European defence, to make it stronger, realistic and credible, giving it a strategic autonomy in the operational and industrial field. This leap forward in building European security and defence will in turn mean a stronger NATO with which the EU can complement efforts to strengthen cooperation and avoid duplication whilst seeking balanced burden-sharing.

The situation in North Africa obliges Spain to promote, coordinate and support any measures undertaken by states in that region in their fight against threats such as terrorism, organised crime, illegal migration, illegal trafficking and piracy. Promoting our security starts from working with our partners and allies in this area to achieving those objectives.

All of these present and future scenarios, the required effort on the part of the armed forces, objectives and strategic lines of action, the operational use of the Joint Force and its areas of action arising from the National Defence Directive (NDD) and Defence Policy Directive (DPD) are set out in the documents issued by the Chief of Defence Staff (CDS): Concept of Employment of the Armed Forces and Military Policy Planning, strategic documents which are the baseline for the start of the planning cycle for which the necessary capabilities for the Armed Forces are determined and whose definition process and materialisation will be discussed later in this article.

At the national level, the document that has led to the convergence of efforts at the level of the general administrations of the state has been the National Security Strategy (NSS) signed by the President of the Government in 2013, which integrates all the tools in the hands of the State to ensure security, with the Armed Forces (FAS) being another actor, but with direct involvement in the National Defence Line of Action. The fundamental reference of the process at a political level (President of the Government) is the National Defence Directive (NDD), as an expression of the general lines of action and of the guidelines for the development of the Defence Policy.

Meanwhile, the Defence Minister promulgates the Defence Policy Directive (DPD). The Defence Policy sets the framework under which, holistically, the organisational, functional and employment aspects of the FAS need to deal with.

As a result of the need to contribute to a number of measures to overcome the economic crisis, an objective defined from the political level and which has affected all of the general state administration, it has been necessary to adapt the previous ministerial order regulating the planning process of the MINISDEF (37/2005) to a new order that is still in its implementation phase (60/2015).

In this new order, and based on lessons learned from previous planning cycles, the joint character of the process is delved into, in the concurrency of the different planning authorities (Chief of Defence (CHOD), Secretary of State for Defence (SEDEF) and the Assistant Secretary of State for Defence (SUBDEF)), and the support of the Army, Navy, Air Force and subordinate agencies.

With regard to the determination of the industrial capacities and areas of knowledge that affect the essential interests of defence and national security, Law 24/2011, on public sector contracts in its ninth additional provision, establishes that it is the Government that will undertake the task. On this basis, the Council of Ministers approved, by means of the agreement adopted on 29 May 2015, in the following areas of technology and knowledge, applicable to the sectors of land, sea, air and space:

- a) Command and control, communications, information (C4I);
- b) Cyber defence;
- c) Surveillance and reconnaissance, intelligence and targeting (ISTAR in Spanish);
- d) Critical systems on platforms;
- e) Space systems for mission and data processing;
- f) Simulation of equipment and weapon systems, for advanced training;
- g) Navigation systems, guidance control and payload, missiles and complex munitions;
- h) Complex systems composed of other advanced weapons systems, the integration requirements of which are linked to essential interests of defence and security.

i) Traffic control and navigation aids.

This means that fundamental activities of maintenance, supply, engineering and integration that require these systems for operation throughout their useful life will be considered equally.

These areas of technology and knowledge will seek to comply with the three major strategic objectives of the Industrial Defence Policy:

1. Equip the Armed Forces with the best possible systems according to their needs.
2. Enhance industrial capacities to conform to what is required in the planning and acquisition process for the financial and material resources.

This is an excerpt; please read the full article in ESD No 6, 2016. Order your free copy here: info@mittler-report.de
3. Consolidate an industrial and technological base adapted to the new forms and market conditions. From these three goals, seven main axes are defined that will be developed transversally and will facilitate the definition of the lines of action required for each one of them, and will subsequently be evaluated annually by the indicators that are determined in order to verify the degree of compliance and effectiveness of the planning performed:

a) Feasibility and budgetary stability;

b) Orientation of the investments in industrial capabilities;

c) Intelligent management of industrial knowledge;

d) Interlocutor and institutional collaboration;

e) Quality, competitiveness and sustainability;

f) Innovation and technological training;

g) International cooperation and external support.

In addition to these areas of capability, some sectoral master plans have been promulgated (helicopters, RPAS and space systems) the objective of which is to provide a strategic vision of these systems, which serve as elements of support in decision-making and which will deal with both the present situation, as well as international needs and commitments.

The following can be referred to as examples of current programmes:

1) **Terrestrial systems:**

   a) **Pizarro** combat vehicle: Combat vehicle with treads that allow manoeuvre units to operate in cooperation with the natural formations of tanks.

   b) **Tiger** combat helicopter: Combat helicopter with the capability to undertake diverse missions, at all times, with a high rate of survival, equipped with real-time information systems and a fire power and deterrent capability greater than those of the current ones.

   c) **“Spike-LR”** anti-tank missile: Midrange anti-tank missile, and firing positions, to replace the Dragon system (marine infantry) and Milan (Army).

   d) **8x8** combat vehicle: Wheeled combat vehicle to replace the armoured wheeled vehicles (BMR) which incorporate the new technical solutions to cope with the evolving threats and that are adaptable to the new organisation based on organic multi-purpose brigades.

   e) **Pirana** combat vehicle: Amphibious wheeled combat vehicle that provides the marines of a mechanised tactical group with elements of manoeuvre and limited means of support.

2) **Naval systems:**

   a) **S-80** submarine: Submarine with an air-independent propulsion (AIP) system and the capability to launch missiles to engage land targets.

   b) **F-110** frigate: Multi-purpose escort frigate for high-intensity scenarios, with an important combat capability in all the main areas, enabling it to carry out its tasks, especially in the profiles of force protection and in the projection of naval power; as well as to be able to carry out tasks associated with the profiles of maritime safety and support to civil authorities, if so required and determined.

   c) **NH-90** helicopter: Multi-purpose average-load helicopter developed in the scope of an international programme to replace various models currently used by the Army, Air Force and the Navy.

   d) **EC-135** training helicopter: Training helicopter to complete the army fleet, which provides the pilots with the ability to operate in visual flight with and without navigation aids, as well as tactical and night flying with and without night vision goggles.

   e) **Meteor** missile: Air-to-air medium-range missile developed in the scope of an international programme to equip the combat aircraft with a capability beyond the visual range.

   f) **AB-212** Helicopter Life Extension: Life extension programme for the AB-212 helicopters, which also includes the modernisation of their capabilities, enabling their employment from a BAM Class patrol ship.

3) **Air systems:**

   a) **Eurofighter** combat aircraft: Fighter aircraft developed in the scope of an international programme with the aim of achieving a latest-generation European plane.

   b) **A400M** transport aircraft: Transport aircraft developed in the scope of an international programme that can replace the fleets of Hercules and Transall aircraft.

   c) **NH-90** helicopter: Multi-purpose average-load helicopter developed in the scope of an international programme to replace various models currently used by the Army, Air Force and the Navy.

   d) **EC-135** training helicopter: Training helicopter to complete the army fleet, which provides the pilots with the ability to operate in visual flight with and without navigation aids, as well as tactical and night flying with and without night vision goggles.

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   f) **AB-212** Helicopter Life Extension: Life extension programme for the AB-212 helicopters, which also includes the modernisation of their capabilities, enabling their employment from a BAM Class patrol ship.

4) **C4ISRyE systems:**

   Satellite Observation and Communication System (SPAINSAT-XTAR, Secomsat and PAZ).
Defence

From a rising EDA budget to the need for cooperation in Europe

(df) The budget for the European Defence Agency (EDA) in 2017 will see the first increase since 2010. The ministers approved EDA’s general budget for 2017 at €31 million, in 2016 it was €30.5 million. At the EDA ministerial Steering Board, chaired by Federica Mogherini in her capacity as Head of the Agency, the defence ministers also tasked EDA to review the Capability Development Plan (CDP), approved the 2017 general budget and agreed to set up a working group to study the potential creation of a Cooperative Financial Mechanism.

“Ministers agreed to the review of the Capability Development Plan (CDP), to improve the capability development process by taking into account R&T and industrial aspects, and tasked the EDA to present a new set of EU priorities for military capability development for Steering Board adoption by spring 2018,” EDA stated on the outcome.

“The CDP review is a key element of the new EU Global Strategy (EUGS) which states that, in order to match the level of ambition set out in the strategy, member states will need high-end military capabilities, i.e. full-spectrum land, air, space and maritime capabilities, including strategic enablers. The CDP serves as a reference for national capability planning by informing member states about capability requirements over time, identifying areas for capability improvements and translating capability priorities into concrete collaborative programmes.”

The Steering Board also agreed, that the need for cooperation is even increasing throughout Europe.

“Experience has shown that one of the key factors that block or hinder cooperation is budget asymmetry or lack of synchronisation of budget availability,” EDA stated.

“A potential Cooperative Financial Mechanism could alleviate this challenge by supporting the launch of projects (R&T, capability development). It would potentially incentivise cooperation by tackling the problem of absence of budgetary synchronisation, but also increasing the availability of common resources/ring-fencing budgets allocated to cooperation.”

www.eda.europa.eu

SpaceDataHighway started

(df) Airbus Defence and Space (Airbus DS) starts the initial service of its SpaceDataHighway. “This represents a step change in the speed of space communications,” the company stated. Ultra-broadband laser communications and the geostationary orbit of the relay satellites combine to deliver a secure, near realtime data transfer service without any data latency.

“Thanks to the laser technology developed by Tesat Spacecom, the SpaceDataHighway can transfer high-volume data from Earth observation satellites, airborne platforms, or even from the International Space Station at a data rate of 1.8 gbps and can transmit up to 40 terabytes per day,” Airbus DS continued. The first spacecraft to use this new system will be the European Commission’s Earth observation satellites, Copernicus Sentinels, with the high data transmissions of any observation technology.

“The SpaceDataHighway is no longer science fiction. It has become reality and will revolutionise satellite communications,” said Evert Dudok, Head of the Communications, Intelligence & Security (CIS) business line at Airbus Defence and Space.

“The SpaceDataHighway will completely change the way humanitarian crises, maritime safety and the protection of the environment can be managed.”

The SpaceDataHighway programme is a result of a public-private partnership (PPP) between the European Space Agency (ESA) and Airbus Defence and Space. The German national aeronautics and space research centre (DLR) is also a key sponsor.

www.airbusdefenceandspace.com
Swiss armament programme 2016

The Swiss National Council has decided on the armament programme 2016. With the planned volume of €1.3 billion six procurement projects can be started. The largest single item is €380 million for 32 120 mm mortars, including Piranha vehicles, trucks and ammunition, as well as the entire logistics to close the gap in mortar that has existed since 2009. For this purpose, RUAG has developed the Cobra electric mortar, which is to be integrated into the Integrated Artillery Guiding and Fire Control System IntAFF between 2018 and 2022.

The largest tranche is trucks and trailers for a total of €290 million. More than 600 trucks - semi-trailers, tanker combinations, carriages, off-road and conditionally-adapted trucks - and more than 2,100 trailers - including Iveco semi-trailers - are to be replaced during 2018-2022. In addition, there are small vehicles from Daimler to be bought in this item.

Over the next three years, shoulder-mounted multipurpose weapons worth €240 million will be procured, including the RGW 90 (Recoilless Grenade Weapon). Other projects are the Flores radar system (€85 million), 14 patrol boats from the Finnish shipyard Alutech for the „Swiss Navy“ on the large Swiss lakes (€45 million) and spare parts for the F/A-18 combat aircraft (€120 million).

www.vbs.ch

New intercommunication systems for the German PzH2000

In the scope of the PzH2000 retrofit programme of the German Army the Greek company IDE received a €4.1 million order from Krauss Maffei Wegmann (KMW) for WiSPR intercommunication systems. This follows the successful completion of the prototype PzH2000 retrofit programme, which was concluded in 2013, where WiSPR proved good communications capabilities under noise-burdened environments.

WiSPR is a state-of-the-art digital intercommunication system with very fine performance in vehicular noise reduction and de-centralised system architecture, capable of adapting to different operational requirements. The system is designed and produced by IDE with additional characteristics being reliability, ergonomy, and reduced logistics footprint.

IDE’s CEO, Dr. George Troullinos, stated: “We are very pleased by the continued international recognition of our products from quality driven users, which motivates us to further invest in leading edge technologies.” WiSPR system deliveries for this programme will be completed in May 2017.

www.intracomdefense.com

Dual tube night vision goggles

The company ACTinBlack has developed new Dual Tube Night Vision Goggles (DTNVG) for ground operations. “The DTNVG has been designed to meet the high demands of ground operation units and special forces,” the company said. “Focusing on high optical performance, and a lightweight, ergonomic design. Submergibility of 20 metre is available on demand.” ACTinBlack announced that the DTNVG has successfully transitioned from military trials to production.

www.actinblack.com

International orders for the HX

An international customer has awarded Rheinmetall a major contract for military trucks. The order encompasses 110 logistic vehicles worth a total of €134 million with delivery between January 2018 and February 2019.

The contract includes comprehensive service and logistical support for a period of five years. The vehicles on order are tractor-trailers based on the operationally proven HX81 from Rheinmetall MAN Military Vehicles (RMMV). The HX family ranges from 4x4 to 10x10 cargo trucks, tankers, heavy-duty recovery vehicles, system platforms, folding road-laying and bridge-laying systems. They are tested against STANAG for temperatures between -46°C and +49°C. About 12,000 HX have been sold with customers including the UK, Denmark and New Zealand.

www.rheinmetall.com
**First Hawkei delivered**

(df) The Australian Ministry of Defence has taken delivery of the first of ten Hawkeis from the initial production of Thales Australia. These Hawkei complete newly-designed protected 4x4 multi-purpose vehicles in the seven-ton class with an electrical architecture specifically designed for up-to-date electronic devices for communication, reconnaissance, connection and guidance.

The order includes a new radio system that increases the Swedish Armed Forces’ capabilities in training and simulation. The system provides the ability to conduct larger military manoeuvres and to interoperate with several armies from other nations. The radio system transfers data to and from each individual soldier and vehicle to a training command centre where things such as positions and status for each simulator system are summarised for evaluation. The delivery includes mobile base stations and radio systems for vehicles and soldiers.

www.saabgroup.com

**Amphibious UGV Warthog**

(df) Argo XTR and Clearpath Robotics are working together on the development of an electrically driven, modular, amphibious unmanned ground vehicle (UGV) with wheel side steering. In the case of wheel side steering, the wheels run opposite each other on both sides for steering movements of the vehicle and allow turning on the spot.

Weighing 590 kg Warthog can transport additional payloads of up to 272 kg with its steel/aluminum structure. Thanks to the 24 inches Argo tires, it produces low ground pressure with high traction. The large-volume tires are used in amphibious operation as both float and propulsion. Lithium batteries for up to eight hours of operation provide various voltages to operate devices and sensors. On land, the top speed is 18 km/h.

With these features the Warthog might be used for a variety of different scenarios like reconnaissance tasks, material handling (for example with EOD) or logistic transports.

www.argoatv.com
www.clearpathrobotics.com

**New radio systems for Sweden’s Armed Forces**

(df) Saab has received an order for multinational training from the Swedish Defence Materiel Administration (FMV). The order value is €10.5 million with deliveries taking place during 2017.

The order includes a new radio system that increases the Swedish Armed Forces’ capabilities in training and simulation. The system provides the ability to conduct larger military manoeuvres and to interoperate with several armies from other nations. The radio system transfers data to and from each individual soldier and vehicle to a training command centre where things such as positions and status for each simulator system are summarised for evaluation. The delivery includes mobile base stations and radio systems for vehicles and soldiers.

www.saabgroup.com

**Successful laser tests by MBDA**

MBDA Deutschland successfully conducted tests of a new high-energy laser effector at a military training facility on Germany’s North Sea coast, marking the next step in the progression from technology to product. In this series of trials, the system was tested under real environmental conditions for the first time.

The primary purpose was to test the beam guidance and tracking system, with a simulated engagement of airborne targets. In this exercise, the targets were preset, scanned with the laser target illuminator, and an aim point was held on the target for an extended period. The quadcopter, serving as the airborne target, performed a variety of often highly dynamic manoeuvres at a variety of ranges. The tests verified the functionality of the overall system and the performance capability of the further improved tracking system.

In spite of often adverse weather conditions, including heavy rain and storms, the system was able to successfully track all the targets involved in the trials. During night trials, the demonstrator proved capable of acquiring and tracking targets even under poor visibility conditions. In other experiments, the laser team simulated engagement of a swarming attack, which required rapid switching between targets approaching from different directions.

www.mbdasystems.com
Upgrading simulators in the US

(df) Saab has received three orders from the U.S. Army Program Executive Office of Simulation, Training and Instrumentation (PEO-STR) to provide OSAG 2.0 interoperability upgrades for the U.S. 7th ATC’s Deployable Instrumentation System – Europe (DISE) and the Combat Vehicle Tactical Engagement Simulation System (CVTESS) to meet U.S. Army and European forward deployment interoperability requirements.

These new orders, implemented as Mid-Life Service Upgrades, will enable soldiers to quickly configure training system lasers to operate using either MILES Communication Code (MCC), primarily used in U.S. training environments or the OSAG 2.0 standard, used by most nations in Europe, for training engagements in any theatre and together with multinational units. OSAG 2.0 is a software code originally developed by Saab that enables true ballistic simulation of ammunition used in anti-tank and vehicle weapons when firing with laser transmitters.

Originally delivered in 2001 for up to battalion sized training, DISE provides deployable instrumented live training capability consisting of tactical engagement simulation system lasers and detectors, exercise control (EXCON), battle tracking, data collection and rapid After Action Review (AAR) capability for live training events.

Just a day later Saab received an order for new laser simulators from the Swedish Defence Materiel Administration (FMV) with deliveries expected during 2017.

Delivery of Tetra Pager P8GR has begun

(cf) Public safety authorities and organisations (BOS) in the German state of Hesse are now able to use the Tetra pager P8GR from Airbus Defence and Space. This device for a two-way communication system is now being delivered to at least 50,000 firefighters and other rescue and relief workers in Hesse.

The P8GR meets the certification requirements of the German Federal Agency for Public Safety Digital Radio (BDBOS). It also satisfies the functionality, interoperability and safety requirements set for Germany’s BOS digital radio network in the course of its final acceptance by the Hesse Ministry of the Interior and Sports.

In contrast to existing analogue devices, the P8GR enables secure two-way communication between the control centre and the operational units. It offers all the essential Tetra features for alerting groups, subgroups and individuals. At the same time, the P8GR allows the planning and dispatching of emergency services personnel in real time.

Rheinmetall simulation contract

(df) Rheinmetall’s Simulation and Training unit has won an order to modernise and expand an existing live training facility in the Middle East-North Africa region. Under this contract Rheinmetall will supply hardware and software components for expanding and updating the country’s Mobile Combat Training Centre, with the company’s Legatus live simulation as core technology.

In addition, the order encompasses the supply of new laser engagement simulators that will enable inclusion of various combat vehicles and the latest weapon systems in the tactical training process. The Centre’s expanded capabilities will make it possible to train not just infantry units but also mechanised formations ranging in size up to reinforced company level.

This is the second contract in a row won by Rheinmetall. Recently the German Bundeswehr awarded an order to expand the exercise control cell of the German Army Combat Training Centre, or GÜZ.

The expansion will enable the German Army to conduct and evaluate training for military operations in built-up terrain in the Schnöggersburg section of the GÜZ, where an urban environment has been specially created. Rheinmetall is also supplying the German Army with 2,000 new Legatus laser transmitter units for small arms and 1,500 accompanying soldier target sets with corresponding laser sensors.

www.saabgroup.com
www.securelandcommunications.com
www.rheinmetall.de
**New Collision Warning System designed as add-on or standalone**

(df) Israel Aerospace Industries (IAI) has introduced its very new sophisticated Collision Warning System (CWS), that warns combat pilots in situations when potential collision with commercial and civilian aircraft is imminent. CWS was developed by IAI’s MALAM Division and will be on display at the I/ITSEC exhibition in Orlando, FL, November 28 to December 2, 2016 (Booth 1949).

Extending the collision-warning functions of IAI’s EHUD range-independent air-combat manoeuvring instrumentation (ACMI), the CWS system can now monitor non-military platforms and warn of the proximity and risk of collision with commercial aircraft. Monitoring is performed through integration of IFF (Identification Friend/ Foe) and ADS-B (Automatic Dependent Surveillance – Broadcast). CWS then runs a specific set of algorithms especially designed for military platforms which are able to manoeuvre in high dynamic and have flexible option to avoid collision situations. With the incorporation of inputs from the three different systems (ACMI Data Link, IFF and ADS-B) and fusing them to one situational awareness picture the system multi-source capability of the CWS provide a complete solution that is „tailored“ for the military platforms.

The CWS provides a complete air situational picture with warnings visible only to the military pilot – no indications are provided to civilian aircraft. Warnings are provided in three ways – a voice warning, graphical indication on a tablet panel and symbols presented on existing cockpit displays (MPD/MFD). The CWS is embedded in existing or new EHUD/ RAIDS/FRP systems, or carried as a stand-alone pod, which requires only a single interface unit, and thus requires only minimal integration into the aircraft. The system builds the air situational picture based on the reception and interrogation of EHUD, IFF and ADS-B signals. By plotting existing and projected flight paths of all aircraft flying in the area, the system identifies potential collisions and warns the pilot in advance of such events.

CWS is either an add-on to an IAI/MLM built ACMI pod/box or a standalone system that is very small in volume and straightforward to integrate.

www.iai.co.il

**A400M proves tanker capabilities**

The A400M has shown further capabilities as a tanker by successfully demonstrating air-to-air refuelling contacts with another A400M. In two flights conducted from Seville, Spain the development aircraft performed more than 50 contacts in level flight and turns using the centreline hose and drum unit (HDU).

The A400M is, at the moment, the only tactical tanker on the market with this third refuelling point, in addition to its underwing pods, enabling refuelling of large receivers such as another A400M or C-130.

It has a basic fuel capacity of 63,500 litres, which can be increased with two extra cargo hold tanks carrying 7,200 litres each, and can refuel from the HDU at a rate of 2,000 litres (600 US gallons) per minute. The technique would allow the A400M to carry a 20 tonne payload more than 6,000nm / 11,000km non-stop from Paris, France to Kuala Lumpur, Malaysia. The standard A400M aircraft has full provisions for air-to-air refuelling (AAR) operations already installed and only requires the rapid installation of the optional air-to-air refuelling kit to become a tanker.

www.airbusgroup.com

**€1.1 billion F-16 upgrade for South Korea**

(df) The Republic of Korea Air Force (ROKAF) awarded Lockheed Martin a €1.1 billion contract to upgrade 134 F-16 aircraft, based on the advanced F-16V configuration. Among the enhancements are an Active Electronically Scanned Array (AESA) radar, a modern commercial off-the-shelf (COTS)-based avionics subsystem, a large-format, high-resolution centre pedestal display and a high-volume and high-speed data bus.

“We truly appreciate the trust and confidence the Republic of Korea has placed in us with this contract,” said Susan Ouzts, vice president of Lockheed Martin’s F-16 programme. “These upgrades are a critical piece of South Korea’s national defence and highlight Lockheed Martin’s commitment to the full lifecycle of the F-16, from production to through-life sustainment.”

The F-16 Fighting Falcon is among the most successful, combat-proven multi-role fighters with more than 4,570 F-16s delivered. The F-16 currently serves for fighter fleets of 25 nations around the world.

www.lockheedmartin.com/f16
Work on ZUMWALT continues
(df) The U.S. Navy has awarded BAE Systems a €181.9 million contract for work on the guided missile destroyers USS ZUMWALT (DDG 1000) and USS Michael Monsoor (DDG 1001) with work on the ZUM-WALT beginning next month. Under the new contract, the company’s San Diego shipyard will support the installation and completion of the ships’ combat systems and perform post-construction hull, mechanical, and electrical enhancements. The shipyard also will support the ship’s post-shakedown availabilities following the demonstration and certification of their combat systems and final sea trials. In addition to the shipyard’s work, BAE Systems’ Weapon Systems business will work on the ships’ gun systems, which will be capable of delivering ordnance against a wide variety of targets. The business also will install the ships’ Mk 57 vertical launch systems, which will provide the capability and flexibility of deploying existing and new missiles. USS ZUMWALT and Michael Monsoor are the first two ships of the Navy’s new class of surface combatants. The ships are 186 metre long, displace about 15,700 tons, and are comprised of steel hulls and composite structure deckhouses.

New technology at maritime simulator technology facility
(df) The Royal Australian Navy (RAN) is expanding its maritime simulator facility at HMAS Watson, Sydney, with the addition of new Kongsberg ship-handling and navigation simulators and the integration of a new visual display system for its existing bridge simulator. Under this contract Kongsberg will deliver a new stand-alone full mission ship’s bridge simulator, and a part mission bridge simulator based on its established K-Sim Polaris simulator platform. Both systems will have the same functionality as the RAN’s existing bridge simulators. The K-Sim Polaris simulator platform has been developed over 20 years and been constantly developed. In parallel to the delivery of new bridge simulators, Kongsberg will also adapt the existing full mission bridge simulator – which is being relocated within the HMAS Watson facility – using new visual display technology like LED screens.

Upgrade of the COLLINS class
(df) Thales has signed a design and pre-production contract to upgrade Australia’s COLLINS class submarine sonar systems. In this programme the COLLINS’ legacy cylindrical array will be replaced with a Modular Cylindrical Array (MCA) based on submarine technology developed by Thales teams in the UK. The existing flank array will be replaced by the latest generation flank array from Thales teams in France. The COLLINS class project was established by the Royal Australian Navy (RAN) in 1982 with delivery of the six boats between 1996 and 2003. This new upgrade will enhance their capability for a better detection of evolving underwater threats as well as enhanced on-board processing.

Merlin Mk4 makes its maiden flight
Leonardo-Finmeccanica announced the first AgustaWestland AW101 Merlin Mk4 successfully completed its maiden flight at its Yeovil facility in southwest England. Leonardo is upgrading 25 Royal Navy Merlin Mk3/3A aircraft to Merlin Mk4/4A standard as part of the Merlin Life Sustainment Programme (MLSP) contract. The MLSP contract is valued at €389 million and was awarded in January 2014 by the UK Ministry of Defence. Deliveries of aircraft will start in 2017 and continue through to 2020 with the work being performed at Leonardo’s Yeovil facility. The AW101 Merlin Mk4/4A aircraft includes automatic main rotor blade folding and tail fold. The aircraft are also fitted with the same cockpit as the Royal Navy’s Merlin Mk2 aircraft, giving the Merlin fleet a common cockpit featuring five 10” x 8” integrated display units, two touch screen units for controlling the aircraft’s systems and mission equipment, as well as two cursor control devices for cursor control of the tactical displays.
Industry & Trade

EOS presents industrial 3D printing for serial production

(cf) The company EOS, a pioneer in the field of industrial 3D-Printing, presented at formnext 2016 in Frankfurt, Germany, its latest portfolio of Additive Manufacturing (AM) and software solutions for the polymer and metal segment. EOS showcased industrial 3D printing solutions which companies can integrate as element in their existing and future manufacturing methods. For additive manufacturing often the technical term “3D-Printing” is used. For a construction with additive manufacturing the printer needs 3D-geometry model data. With this data the printer starts the construction process for which layer of powdered material, for example iron, is applied on a platform. After that a laser fuses the powder, and the platform is lowered. The process repeats itself until the part is completed. At the end the loose powder has to be removed. This distinguishes additive manufacturing from conventional methods like milling a work piece from a solid block. Additive Manufacturing builds up components layer by layer using materials which are available in fine powder. The company said that the industry is now at the next big stage of development: integrating AM in existing and future production environments, with the aim of further optimising the flow of parts and in serial production. The combination of additive and subtractive manufacturing steps plays a key role.

Raytheon expands missile systems

(df) Raytheon Company plans to expand its Southern Arizona operations by adding nearly 2,000 jobs at the Missile Systems business headquarters over a five year period. According to the company it plans to hire workers at all skill levels with an emphasis on engineering and other higher-wage, technical positions. Job creation, facilities expansion and operational output is expected to result in billions of dollars of economic impact for Arizona over ten years.

Gripen Design and Development Network in Brazil

(df) Saab and Embraer have inaugurated the Gripen Design and Development Network (GDDN) in Gavião Peixoto, São Paulo, Brazil. The GDDN will be the hub for the Gripen NG technology development in Brazil for Saab and Embraer together with the Brazilian partner industries and institutions, AEL Sistemas, Atech, Akaer and the Brazilian Air Force, through its research department DCTA. The GDDN includes the development environment and simulators required to undertake the fighter development work. In addition it is connected to Saab in Sweden and the industrial partners in Brazil, securing both technology transfer and efficient development. The GDDN facility is located at Embraer premises in Gavião Peixoto, where also the Gripen Flight Test Center and the Gripen Final Assembly will be based.

Meanwhile the AM construction is growing in serial production. It gives Original Equipment Manufacturers (OEMs) in the most varied sectors of industry the opportunity to create a distinctive profile for themselves based on new customer benefits, cost-saving potential and the ability to meet sustainability goals. EOS was founded in 1998. The company is leading in high-end additive manufacturing solutions. As a leader of of Direct Metal Laser Sintering (DMLS) technology, EOS also provides a unique polymer AM portfolio. For industrial 3D Printing, EOS offers a modular solution portfolio including systems, software, materials, technical and consulting services.

“These rewarding, high technology jobs will support Raytheon’s growth and bring even more top talent to this region,” said Dr. Taylor W. Lawrence, Raytheon Missile Systems president.

www.raytheon.com

www.saabgroup.com

www.embraer.com.br
Cooperation for the future Spanish F110 frigate

(df) Indra has reached a collaboration agreement to include the Polytechnic University of Madrid (UPM) in the industrial plan for the PROTEC programme launched to develop and integrate the sensors for the Spanish Navy’s future F110 frigate. The deal was formalized through the signature of a partnership agreement with the UPM Rogelio Segovia Foundation for the Development of Telecommunications (Fundespot) and the Indra-UPM Research Chair at the university’s Faculty of Telecommunications Engineering. Work will commence this year and last until 2019. The first areas of collaboration that have been identified are related to the analysis, design and development of elements for the identification friend or foe (IFF) system, the X-band radar for the surveillance of surface and low-flying aerial targets, and the radar electronic support measures (RESM) system. Indra will start working with the UPM Radiation, Microwave and Radar groups, with which it has collaborated in other projects in the past. Other areas of collaboration under the auspices of the agreement will be determined in later stages of the PROTEC F110 programme. “The agreement enables Indra to forge ahead with the industrial plan associated with the PROTEC F110 programme in which it is acting as the driving organization for reinforcing the business fabric and developing research centres at Spanish universities,” the company stated. www.indracompany.com

SA’s Defence industry “Among the best in the world”

(sb) Global interest in the South African defence industry is growing and there is “broad agreement that South Africa’s defence industry is among the best in the world and in the forefront of the development of innovative products,” the Minister of Defence and Military Veterans, Nosiviwe Mapisa-Nqakula told European Security & Defence magazine at the opening of the African Aerospace and Defence Exhibition 2016 in Pretoria. Minister Mapisa-Nqakula said the five day show was a platform for the industry to market their products and brands and gain access to the international purchasing and supply chains. “It is pleasing to note the upsurge of international interest in our defence industries. This augurs well for our economy,” she said.

During the opening of the show that drew nearly 450 exhibitors from 34 countries the Minister announced that the National Defence Industry Council has just published a draft transformation charter intended to bring more small and medium enterprises into the defence sector. The Government expects all departments, agencies and state-owned companies such as Denel to contribute to the deepening of industrialisation and the formation of partnerships that can support the growth of SMEs. “We want to go beyond this and create black industrialists within the sector and call upon existing companies to widen black ownership and participation in the defence industry,” she said.

Referring to the deployment of the Rooivalk attack helicopter in support of South African forces that participate in peacekeeping missions, Minister Mapisa-Nqakula said “we cannot rest on our laurels. We are already engaged in the process of upgrading this platform.” South Africa is prepared to engage with partner nations and “in line with the global trend of collaborative defence programmes” to consider the upgrading and co-production of the Rooivalk.

Minister Mapisa-Nqakula welcomed the strong presence of defence exhibitors from other African countries at AAD, a show which “continues to cement its place among global aerospace and defence exhibitions.”

For the first time the Africa pavilion at AAD hosted companies from countries such as Nigeria, Uganda, Namibia and the Sudan, and the Minister was joined at the opening ceremony by the Premier of Gauteng, David Makhura, the Mayor of Tshwane, Solly Msimanga, Secretary of Defence Dr Sam Gulube and the Chief of the SANDF, General Solly Shoke, as well as foreign defence ministers and senior representatives from 71 countries.

AAD 2016 was hosted at the Air Force Base Waterkloof, with three days of trade exhibitions attended by defence decision-makers from across the world. www.aadexpo.co.za

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