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# Greek Defence News

**BIMONTHLY DEFENCE AND SECURITY REVIEW FOR GREECE, CYPRUS AND THE  
SOUTHERN EAST EUROPEAN REGION**

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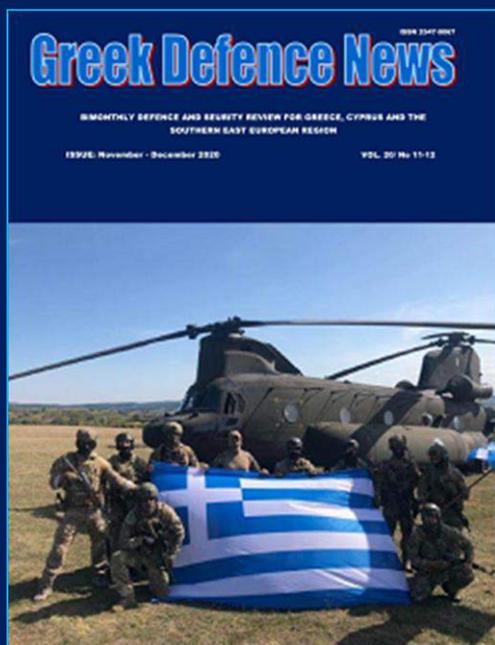
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## MINISTRY OF DEFENCE

### ➔ Greek Defence Policy



On 18 November 2020, the Minister of National Defence Nikolaos Panagiotopoulos participated in the webinar titled "Briefing Regarding the Greek Defence Policy" held by American Hellenic Institute (AHI). Main points of observations made by Mr Nikolaos Panagiotopoulos

--"The American Hellenic Institute is an organisation which contributes to the strengthening of the bonds between the USA and Greece".

--"In the Hellenic Ministry of National Defence we are working on an ambitious but organised and thoroughly calculated (especially pertaining to the financial aspect) plan for the revitalisation of our Armed Forces capabilities".

--"This effort is made because we are living in a very complex and uncertain geopolitical environment in the Eastern Mediterranean. An environment made even more complex and perhaps more sensitive as time passes".

--"We estimate that the security environment in the Eastern Mediterranean is characterised by three basic and interconnected driving forces: a) the recent hydrocarbons discovery in the sea zone between Israel, Cyprus and Egypt, b) the geopolitical antagonisms and the power imbalances, c) the increased interest for the region

demonstrated by foreign powers and major actors in the international scene".

--"Turkey's overall stance constitutes an increasing and exacerbating problem, which makes it a factor of destabilisation in the region, not just for Greece and Cyprus but also in Nagorno - Karabakh with the participation of Syrian mercenaries, probably ISIS fighters".

--"In the last two years, Turkey has adopted the doctrine of expansionist policy in the Eastern Mediterranean, initiating many unilateral actions, which is also apparent by the illegal agreement it signed with Libya".

--"It intervenes in areas out of its jurisdiction, it sends illegal immigrants through the Aegean, violating the Greek - and European - borders, in order to force the EU to pay a monetary assistance for the refugee crisis".

--"Regarding Greece, the recent provocations made by Ankara in our region, constitute a series of ten successive Navtexs for research since past July, which we consider illegal, within the Greek continental shelf. In combination with the intense mobility of the Turkish Navy, which constitutes a severe escalation with destabilising consequences for regional peace".

--"Despite our neighbouring country's effort to develop a stage of war in the region, the Hellenic Navy remains firm as a rock against any evil designs. Greece cannot be forced and it will support its rights and its boundaries, which are also the boundaries of the EU".

--"We are conducting joint exercises with Israel, Cyprus and Egypt and bilateral meetings in order to safeguard stability and prosperity in the region".

--"We are further expanding our allied relation with the USA, as demonstrated by our Strategic Dialogue and the bilateral Strategic Cooperation Agreement, which governs the American presence at the Souda Bay Naval Base, the military installations in Larissa and Volos, as well as the Alexandroupoli harbour.

--"Greece and the USA are connected by common values and principles for Freedom, Democracy, Human Rights and the respect to International Law. Greece is a proper ally and indisputable pillar of stability".

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--"Overall, we are satisfied with the stance and support demonstrated by Mr Pompeo, proving that the USA are aware of the problem caused by Turkey's stance and acknowledge Greece as a reliable partner".

--"Relations with the State Department are good and we hope that things will become even better with the new elected government".

--"NATO and any other allied force must intercept the Turkish provocative stance. NATO must process a de-escalation mechanism so that no more conflicts arise".

--"We wish to have an open channel of communication with Turkey. I remain positive to communication and even so when the conditions allow it, because dialogue is necessary, but not under tensions and threats. As long as the "Oruc Reis" is conducting research, then no dialogue can be conducted".

--"We are protecting our rights and we are making that clear to all directions".

--"The show at Varosha in Cyprus was provocative and it violates the International Law. This is not solely a problem for Cyprus but also for the EU".

--"As December draws near, Europe is evaluating Turkey's stance and the general feeling is that it hasn't done much to prove that it is trying to bring tensions down".

--"It is time for Europe to respond resolutely, pertaining to the condemnation of this development and decide to impose sanctions on Turkey. Not solely due to its overall stance but also due to its recent provocative show-off and violation of International Law".

force of the impact left the warship cut in two, tearing off the vessel's stern.

This ship is one of the 12 HUNT type Minehunters which were built in VOSPER THORNYCROFT shipyard (Portsmouth-England). Built with Glass Reinforced Plastic (GRP), traveled first time in June of 1987 and transferred to the Hellenic Navy in February of 200. This is the 1st ship in the Hellenic Navy to bear the name Kallisto. The ship is a Mine Countermeasures Vessel (MCMV), capable of sweeping and hunting mines by mechanical, magnetic and acoustic methods by day and night. The principal mine hunting role is carried out using the Mine Hunting System Acoustic Mk 2 which comprises Sonar 193M mod1, and Disposal systems. The principal minesweeping role is carried out using the Wire sweep Mk 8, the Magnetic sweep Mk 14, and the Acoustic sweep (Towed Acoustic Generator). She is capable of 13 Knots ahead on Diesel Drive and 5 Knots on Auxiliary (hydraulic) Drive and has an endurance at least 1500 n.m. at 12 Knots.



## MINISTRY OF DEFENCE

### ➔ **MCMV «Kallisto» M-63 collided with a container ship**

Hellenic Navy's MCMV «Kallisto» M-63 gets hard damage after colliding with container ship. On Tuesday, October 27, 2020 and around 07:30 in the sea area of the Saronic Gulf, a merchant ship collided with the Mine Countermeasures Vessel «Kallisto» M63, the Hellenic Navy, said in a statement. The Navy has undertaken all the necessary actions to deal with the incident. The

## ARMAMENT PROGRAMS

### 🟡 **HELLENIC ARMY**

#### ➔ **Chaffs & Flares**

On 16 October 2020, the General Directorate for Defence Armaments and Investments- GDDIA announced the Tender 09/20 regarding the procurement of Chaffs & Flares decoys to be used for the protection against missiles of the Hellenic Army's Aviation AH-64 DHA Helicopters. Estimated Budget is in the area of 548.000€. Interested



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companies should submit complete technical and financial offers by 15 December 2020.

## HELLENIC NAVY

### **Lockheed Wins \$194M for Hellenic Navy's MH-60R Helicopters**

On 26 October 2020, Lockheed Martin Corp., Owego, New York, is awarded a \$193,980,348 contract modification (P00019) to previously awarded firm-fixed-price contract N00019-19-C-0013. This modification adds a \$180,000,000 not-to-exceed, undefinitized line item for the production and delivery of four MH-60R aircraft, and exercises a \$13,980,348 option to procure three airborne low frequency sonars in support of the government of Greece. Work will be performed in Owego, New York (49%); Stratford, Connecticut (37%); Troy, Alabama (7%); Brest, France (6%); and Portsmouth, Rhode Island (1%), and is expected to be completed in February 2025. Foreign Military Sales funds in the amount of \$43,980,348 will be obligated at time of award, none of which will expire at the end of the current fiscal year. The Naval Air Systems Command, Patuxent River, Maryland, is the contracting activity.

### **New Frigate**

While the selection of a French frigate remains the most possible option for the new frigate of the Hellenic Navy, according to the Greek and foreign media sources the Hellenic Navy has proposed the promotion of a transnational agreement for the purchase of American Multi-Mission Surface Combatant (MMSC) frigates. The contract will include the supply of four MMSC frigates as well as the upgrade of four MEKO-type frigates, intermediate solution ships and the participation of Greek shipyards.

## HELLENIC AIR FORCE

### **Upgrade of the Hellenic Air Force F-16s**

Greek Minister of Defence update the Hellenic Parliament regarding the progress of the Upgrade of the Hellenic Air Force F-16s program. Defence Minister said that the first aircraft, the flight test aircraft, joined Hellenic Aerospace Industry's facilities on 7 February 2020, where will be spent on engineering for the prototype and the registration of

the systems. The installation of the second fighter jet will take place in February 2021 will the prime contractor company Lockheed Martin expects to complete the task by Jun 30, 2027

In 2018, Hellenic Government signed a \$1.5 billion contract to upgrade 84 F-16 fighter aircraft of the Hellenic Air Force to F-16V standard, with the relevant manufacturer company Lockheed Martin contract to be about \$1 billion. Main subcontractor will be the Hellenic Aerospace Industry getting more than 70% of the total amount of \$279 million subcontracting job, while the remaining 30% is directed to the Hellenic defense industry. Lockheed Martin secured a \$996.8 million foreign military sales (FMS) contract for upgrading 84 Hellenic Air Force F-16 jets to the V-configuration, the US Department of Defense said on December 21, 2018.

### **Greece Seeks to buy F-35**

According to the local media Greece has formally requested to buy between 18 and 24 new or used Lockheed Martin F-35 stealth fighter jets in a 'Letter of Interest' sent to the Pentagon.

The decision for Greece to enter in the program of the F-35 Joint Strike Fighter will be based on a variety of factors such as the delivery program of the fighters, the repayment plan, the configuration of the aircraft and a possible combination to obtain a total of 18- 24 jets, new or used by the US Air Force, if available, is mentioned in the Letter of Expression of Interest of the Greek Ministry of National Defence. Not any official announcement made.

### **Follow on Support for the AM-39 EXOCET**

Greek Minister of Defence update the Hellenic Parliament that the Follow-on Support for the AM-39 EXOCET missile which is the Hellenic Air Force airborne version of the Exocet anti-ship missile family that it can be launched from Mirage aircraft, will be part of the part of the contract attached to procurement of Rafale aircraft.

### **Follow on Support for Helicopters AS-332C1 SUPER PUMA**

On 16 October 2020, the General Directorate for Defence Armaments and Investments- GDDIA, re-announced the Tender 06/17 - Follow on Support for Helicopters AS-332C1 SUPER PUMA. Estimated Budget is in the area of 37.767.204 €.

## Miltech Hellas in aviation industry

**MILTECH HELLAS S.A.** is one of the leading Hellenic companies in the defense sector specializing in the design and manufacture of high quality electronic products for defense applications. Established in 1997, it has been collaborating with local and foreign companies in technology upgrade and exchange programs, along with co-production of defense equipment and systems. Miltech's area of expertise includes design, development and production of leading edge technology aerospace electronics, communication and **avionic products**, thermal surveillance systems, equipment and harnesses.



Chaff & Flares System

Power Boxes

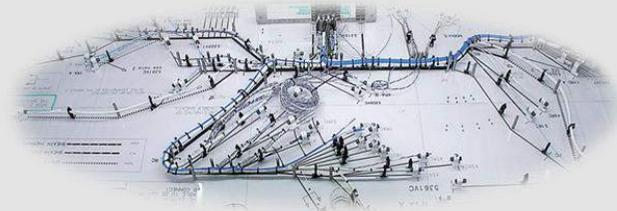
Although Miltech Hellas' capabilities cover a wide range including land and maritime applications, it has developed an outstanding expertise in air-based devices and systems. Since its foundation, it has been designing and developing numerous parts and systems for customers such as **DASSAULT, THALES, AIRBUS HELICOPTERS** and others.



Test Bench for HDD

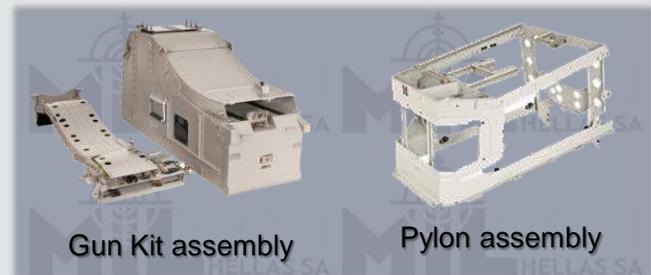
AMLCD Head Down Display

Harness Health Monitoring Tester



Electrical Harnesses

In particular, Miltech Hellas has designed and developed, among others, Avionics Aerospace Electronics, Cockpit Displays, Electrical Power Boxes, Chaff / Flare dispensers, Aero Structural Assemblies and Electrical Harnesses for Helicopters and Aircrafts. Being a flexible and customer oriented company, Miltech Hellas can provide customized solutions tailored to user needs and operational requirements. Along these lines, Miltech has developed special Purpose on-demand devices and systems for air-based Applications such as HDD-55L Head Down Display, an upgrade for the existing 5"x5" Head Down Display (HDD) of the Mirage 2000 EGM/BGM. The new HDD utilizes the latest Active Matrix Liquid Crystal Display (AMLCD) technology and it is a Form, Fit & Function (F3) replacement of the existing CRT (Cathode Ray Tube) units. No further modifications are required to either the Mirage 2000 aircraft or the associated aircraft systems. Furthermore, it developed the ATE-2000 Test Bench for HDD-55L and a Harness Health Monitoring Tester which has the ability to detect the location of any fault existing in the wire, using advanced technologies in the areas of TDR and signal processing.



Gun Kit assembly

Pylon assembly

Between other contracts, Miltech Hellas has ongoing Major Projects:

- RAFALE fighter Electrical Cables & Harness manufacturing, for DASSAULT Aviation (France)
- RAFALE fighter Electrical Power Boxes manufacturing, for DASSAULT Aviation (France)
- RAFALE fighter Gun Kit Assembly manufacturing, for DASSAULT Aviation (France)
- FALCON 7X Pylon Assembly manufacturing, for DASSAULT Aviation (France)

**Miltech Hellas** exhibits a long standing expertise in aviation related products. Keen on investing in innovative ideas, it is ready to undertake and successfully implement any new project, no matter how challenging it may appear. The challenge is what makes us stronger.

Interested companies should submit complete technical and financial offers by 1<sup>st</sup> December 2020.

## HELLENIC DEFENCE INDUSTRY

### → INTRACOM DEFENSE

Officers of the National Defence College of Israel visited INTRACOM DEFENSE (IDE). The Officers were accompanied by the Israel Defense & Military Attaché for Greece and Cyprus, Colonel Yossi Pinto.

The purpose of the visit of the National Defence College of Israel was to be introduced to advanced technology products and systems developed by IDE and corresponding capabilities that can be made available in field operations. Additionally, the Officers had the opportunity to be informed about IDE's versatile production facility, capable of supporting a wide range of industrial activities.

## ACTIVITIES OF FOREIGN INDUSTRIES IN GREECE RELATED TO THE HELLENIC ARMED FORCES ARMAMENTS PROGRAMS

### → DASSAULT AVIATION

On 4 November 2020, a meeting was held between the GDDIA General Director, Lieutenant General (rtd) Theodoros LAGIOS HAF and the Vice – President Business Development of the French company DASSAULT AVIATION, Mr. Jean – Claude PICCIRILLO, following his request

### → Rosoboronexport- Rostec

On 03 November 2020, a meeting was held between the GDDIA's General Director, Lieutenant General (rtd) Theodoros Lagios HAF, and the representative of the Russia's Rosoboronexport, the only state-controlled Joint-Stock Company (part of the Rostec State Corporation) Chief of Marketing Department, as well as the Director of International Cooperation and Regional Policy of Rostec, following their request.

### → Heckler & Koch

German company Heckler & Koch has recently visited Greece to present the rifles it proposes for the new rifle of the Hellenic Army. Heckler & Koch presented the HK416 5.56 × 45, the HK417 7.62 ×

51 and the HK433 5.56 × 45. The HK416 was developed by H&K on request and in collaboration with Delta Force, with the aim of replacing the M4. HK416F replaced the French rifle FAMAS. The German army recently selected the Haenel Mk556 as its new infantry rifle, but its special units, the KSK / KSM and German police units, have selected and are using the HK416 / 417.

## NATO

### → Five nations join forces to develop the Next Generation of Medium Multi-Role Helicopters



France, Germany, Greece, Italy and the United Kingdom announced the launch of a multinational project on Next-Generation Rotorcraft Capabilities on 19 November 2020. The project is dedicated to the modernization of existing rotorcraft fleets and is one of NATO's High Visibility Projects (HVP).

A significant number of medium multi role helicopter capabilities currently operated by Allies will reach the end of their life cycle in the 2035 – 2040 period and beyond, with the subsequent need for replacements.

The Next Generation Rotorcraft project aims to develop a solution for these upcoming requirements, leveraging a broad range of recent advances in technology, production methods, as well as operational concepts. Over the coming years, experts from all five nations will cover an exhaustive programme of work, starting with defining a robust Statement of Requirements and a multi-phase cooperation plan.

The Defence Ministers of the five Allies signed a Letter of Intent to develop an entirely new helicopter



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capability. The signature was added virtually from the capitals of participating nations.

“By investing our resources and channeling our development initiatives through a multinational framework, we are making sure Allies are equipped with the best available capabilities, which helps to maintain NATO’s technological edge”, stressed NATO Deputy Secretary General Mircea Geoană.

The project highlights NATO Allies’ commitment to maintain a technological edge and to pursue multinational cooperation whenever possible.

## EDA

### ➔ **Ministers presented with new opportunities for joint military capabilities to overcome fragmented European defence landscape**

The first ever overview of the European defence landscape, the Coordinated Annual Review on Defence (CARD) report, identifies significant avenues for European defence cooperation with 55 new opportunities for countries to develop defence capabilities together. It recommends six next generation high impact capabilities as focus areas for joint European development efforts. The review also finds that the European defence landscape is characterised by high levels of fragmentation and low investment in cooperation.

The European Defence Agency (EDA) presented EDA Ministers of Defence today with the first CARD report developed in close coordination with the European External Action Service (EEAS) and the EU Military Staff (EUMS) over the past 12 months.

Head of the Agency, High Representative/Vice-President, Josep Borrell said: “For the first time, we have a unique overview of all 26 EDA Member States’ national defence planning and capability development efforts. This is the result of an in-depth dialogue with national defence planners at EU level. It provides Member States with areas in which there is great potential for European defence cooperation, providing Member States forces with modern equipment and improving their interoperability, including in CSDP missions and operations”.

Based on Member States’ own planning and dialogues with national defence planners, the report identifies clear opportunities for multinational cooperation and has identified 55 opportunities

across all military domains: Land (17); Air (14); Maritime (12); Cyberspace (3); Space (4) and Joint and Enabler (5). The report concludes many have the potential to deliver a significant impact on the European capability landscape, provide operational benefits and support EU’s strategic autonomy. It also recommends an additional 56 related collaborative opportunities for Research & Technology (R&T). Member States approved the recommendations of the CARD cycle during today’s EDA Ministerial Steering Board.

The report identifies six next generation capabilities as focus areas for Member States to concentrate capability efforts on as they have a high potential of boosting the EU’s and its Member States’ operational performance in the short and medium term, while also ensuring industrial know-how. These areas are considered to have good potential to be addressed through cooperation, based on Member States’ own considerations, and would allow for broad participation of nations at system and subsystem level. The six focus areas are:

**Main Battle Tank (MBT)** – CARD recommends the joint development and acquisition of a next generation MBT in the long term (entry into service mid-2030s), and joint modernisation and upgrades of existing capabilities in the short-term. If Member States cooperate in upgrading or collaborate when introducing new ones, a 30% reduction of types and variants can be obtained by the mid-2030s. 11 countries expressed an interest in cooperation going forward.

**European Patrol Class Surface Ship** - CARD recommends replacing coastal and offshore patrol vessels within the next decade and developing an EU-wide approach for modular naval platforms. Opportunities for cooperation in joint off-the-shelf procurement, common logistics for similar vessels, common future functional requirements were found, with 7 Member States expressing an interest in cooperation.

**Soldier Systems** - CARD recommends modernising soldier systems through joint procurement of existing systems in the short term, including harmonising requirements, developing a user group for Joint Virtual Training & Exercises utilising common IT tools. In the long-term, it recommends developing commonly shared architecture by the mid-2020s for all subsystems using cutting-edge technology. 10 countries expressed an interest in cooperation going forward.

**Counter UAS/ Anti Access/Area Denial** - CARD recommends developing a European capability to counter unmanned aerial systems (UAS) to improve force protection, as well as contributing to establish

a European standard for Anti Access/Area Denial (A2/AD). CARD concludes that European capability approaches towards A2/AD are clearly at a crossroads, whereby the capability is either developed in a collaborative manner or the capability will not be developed for European forces.

Defence in Space - CARD recommends developing a European approach to defence in space to improve access to space services and protection of assets in space. As an emerging operational domain, more collaboration would contribute to a greater involvement of Ministries of Defence and recognition of military requirements in wider space programmes conducted at EU level.

Enhanced Military Mobility - CARD recommends more active participation of all Member States in military mobility programmes, notably air and sea lift transportation, logistic facilities and increased resilience of related IT systems and processes under hybrid warfare conditions, by the mid-2020s.

The report finds that the European defence landscape is characterised by fragmentation, incoherence, and by defence cooperation spending falling well below agreed collective benchmarks. This includes military capability development, R&T efforts, defence industry support and operational aspects. It concludes that continuous efforts will be needed over a long period in defence spending, planning and cooperation to overcome costly fragmentation and benefit from synergies and enhanced military interoperability. Additionally, the CARD analysis finds that: high diversity of types of military equipment and different levels of modernisation and interoperability drives the fragmentation and lack of coherence of the European landscape. This has a negative impact on the ability of Member States forces to operate together efficiently.

commitment to CSDP missions and operations is very low, with strong disparities between Member States in terms of engagement frameworks and overall operational effort.

CARD's identified areas for cooperation would yield significant benefits in addressing Member States declared national priorities, due to a match in their planning and interests. Over time, this would generate significant operational advantage, especially when Member States deploy and operate forces together.

CARD may result in new cooperation projects launched by Member States in various formats - under PESCO, within EDA or in other bilateral or multinational frameworks - should they choose to take them forward. The full report and its findings have been circulated among Member States.

## CYPRUS

### LED Lights in National Guard Camps

The Ministry of Defence, as part of its energy and environmental policy, signed an Agreement with the Electricity Authority of Cyprus to replace energy-consuming luminaires in National Guard camps with LED-type luminaires, including eight-year maintenance and recycling management of old luminaires.

The agreement includes the replacement of 6600 energy-powered luminaires with LED-type luminaires. The first phase of the project where 2200 luminaires will be replaced, begins in November of this year and is expected to be completed in September 2021. Subsequently, the remaining 4400 fixtures will be replaced during the years 2021-2023. The replacement of luminaires, according to the EAC study, is expected to have an energy benefit and savings of around 67%. The agreement was signed on behalf of the Ministry of Defence by the Director General Andreas P. Loukas and on behalf of EAC by the Chairman of the Board of Directors, Professor Michalis Komodromos.

## TURKEY

### Turkish Aerospace Industries (TAI) under a new agreement inked with Boeing.

Turkish Aerospace Industries (TAI) will produce thermoplastic aircraft parts in Turkey under a new agreement inked with Boeing.

"We have signed a new cooperation with our strategic partner Boeing. We will design and manufacture high quality thermoplastic parts in a high-capacity rapid production system for our domestic and national products and aerospace industry under the agreement," the company announced on 12 November 2020.

The production of thermoplastic composite parts at TAI facility will include automated machines and high-capacity rapid production technology. It is expected to reduce costs in the product cycle and process areas by 30% compared to conventional composites. The project will be undertaken with technical support and experience gained from the cooperation with Boeing.

Ayşem Sargin, Boeing's general manager for Turkey commented: "Such projects, which add to the development of Turkish aviation with deep-rooted contributions, are an important indicator of

our commitment to a lasting cooperation and our confidence in Turkey that we see as an important technology partner.”

## ROMANIA

### ➔ **NAVAL STRIKE MISSILE (NSM) COASTAL DEFENSE SYSTEMS**



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The State Department has made a determination approving a possible Foreign Military Sale to the Government of Romania of Naval Strike Missile (NSM) Coastal Defense Systems (CDS) and related equipment for an estimated cost of \$300 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of Romania has requested to buy two (2) Coastal Defense Systems (CDS) consisting of: up to ten (10) Link-16 Multifunctional Information Distribution System - Joint Tactical Radio Systems (MIDS-JTRS). Also included are two Coastal Defense System Fire Distribution Centers; four Mobile Launch Vehicles; Transport Loading Vehicles; Naval Strike Missiles; non-operational Inert Handling/Loading Missile (IHM) to support missile handling and loading/unloading; training missile and equipment spares; associated containers; training and training equipment; publications and technical documentation; spares parts; loading and mobile maintenance support; U.S. Government and contractor engineering, technical, and logistics support services; and other related elements of logistical and program support. The estimated total cost is \$300 million.

This proposed sale will support the foreign policy and national security of the United States by helping to improve the security of a NATO Ally in developing and maintaining a strong and ready self-defense capability. This proposed sale will enhance U.S. national security objectives in the region.

The proposed sale will improve Romania's capability to meet current and future threats by improving Romania's maritime defense capabilities in the Black Sea and increasing interoperability with the United States.

Romania will use this long-range, precision strike weapon to enhance mission effectiveness, survivability, and NATO interoperability in current and future missions and operations. Romania will have no difficulty absorbing this equipment and support into its armed forces.

The proposed sale of this equipment and support will not alter the basic military balance in the region. The principal U.S. contractor will be Raytheon Missile and Defense, Tucson, AZ. There are no known offset agreements proposed in connection with this potential sale.

Implementation of the proposed sale will require U.S. Government and contractor personnel to visit Romania on a temporary basis in conjunction with program technical oversight and support requirements, including program and technical reviews, as well as to provide training and maintenance support in country.

There will be no adverse impact on U.S. defense readiness as a result of this proposed sale. This notice of a potential sale is required by law. The description and dollar value is for the highest estimated quantity and dollar value based on initial requirements. Actual dollar value will be lower depending on final requirements, budget authority, and signed sales agreement(s), if and when concluded.

### ➔ **F-16 MODERNIZATION AND LOGISTICS SUPPORT**

The State Department has made a determination approving a possible Foreign Military Sale to the Government of Romania of F-16 Modernization and Logistics Support and related equipment for an estimated cost of \$175.4 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of Romania has requested to buy upgrades to the avionics, software, communication equipment, navigational aids, and cockpit of its Mid-Life Update (MLU) Block 15 F-16 aircraft fleet along with additional logistics support. Included in the aircraft modernization are eight (8) LN-260 Global Positioning System (GPS) and nineteen (19)

Multifunctional Information Distribution System Joint Tactical Radio Systems (MIDS JTRS). Also included is AN/APX-126 Advanced Identification Friend or Foe (IFF); ARC-210 Radios; KIV-78 Cryptographic Appliques; other secure communications, navigation, and encryption devices; Joint Mission Planning System (JMPS) software; aircraft minor modification, integration and test support, support equipment, software and software support; personnel training; spare and repair parts; publications and technical documentation; U.S. Government and contractor engineering, technical and logistical support services; and other related elements of logistical and program support. The estimated total cost is \$175.4 million.

This proposed sale will support the foreign policy goals and national security of the United States by helping to improve the security of a NATO ally in developing and maintaining a strong and ready self-defense capability. This proposed sale will enhance U.S. national security objectives in the region.

The proposed sale will improve Romania's capability to meet current and future threats by upgrading its avionics to meet interoperability requirements for encrypted communications systems used by NATO forces.

This increased secure communications capability will assist Romania in the defense of its homeland and U.S. personnel stationed there.

Romania has demonstrated a significant financial commitment to modernizing its military, which will further enhance its interoperability with NATO. Romania will have no difficulty absorbing these capabilities into its armed forces. The principal contractor will be Lockheed Martin Aeronautics Company of Fort Worth, TX.

There are no known offset agreements proposed in connection with this potential sale.

Implementation of this proposed sale will not require the assignment of U.S. Government or contractor representatives in Romania.

**SERBIA**

**➔ The modular "Oganj" will considerably improve our rocket artillery**

In the presence of the Minister of Defense, Aleksandar Vulin, at the proving ground of the Technical Test Center in Nikinci, as a part of the

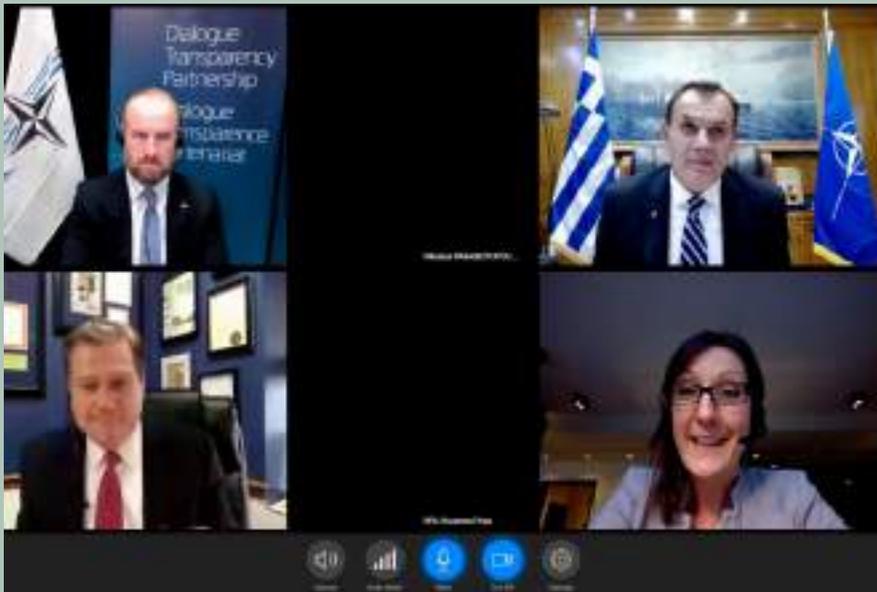


internal tests of the Modular Self-propelled Multiple Rocket Launcher System MLRS M18 OGANJ, the guided missile Alas with IR homing head was launched to check the characteristics of the ground missile guidance station and the integration of containers and pertaining electronic equipment with the weapon system.

The missile has a very modern aerodynamic configuration, a combined power pack (solid booster motor and turbo jet sustainer motor), a modern concept of guidance resistant to jamming (inertial navigation in the initial and middle phase of flight, thermal imaging head for final homing connected to the ground station by optical cable and radio link), a maximum range of up to 25 kilometers and it is intended for the destruction of armored as well as stationary fortified targets. The missile Alas was fired at a stationary target at a distance of 10.5 kilometers. The test is one from a series of required number of launches and was performed as a continuation of previous tests with inert and programmed trajectory missiles of this type. The test was successful.

The modular "Oganj" is in the final stage of internal testing. After the successful completion of the final tests, it is expected to be introduced into the armament of the Serbian Army. It is a highly automated artillery weapon, which, apart from the upgrades achieved in the previous version - MLRS M17 "Digitalized Oganj", possesses new combat capabilities and will significantly improve the capabilities of our rocket artillery. It can fire all types of existing unguided rockets available to the Serbian Army, including 40-kilometer rockets that have already been developed, rockets with the range of 50 kilometers that are in development, as well as rockets with a correctable trajectory and guided missiles. The missile Alas is a development project of the company Jugoimport-SDPR, J.P.

## Speech by the Minister of National Defence, Nikolaos Panagiotopoulos, at the 66th Annual Session of the NATO Parliamentary Assembly



The Minister of National Defence, Mr. Nikolaos Panagiotopoulos, participated today, Saturday 21 November 2020, by videoconference, in the 66th Annual Session of the NATO Parliamentary Assembly.

During his speech, the Minister of National Defence expressed his pleasure and honour of having the opportunity to participate in the meeting of the Committee and noted that in the absence of the health crisis due to “Covid-19” pandemics, he would like to welcome in Athens the members of the Defence and Security Committee of the NATO Parliamentary Assembly today, of all days, on the Armed Forces’ Day.

Mr. Panagiotopoulos stressed that the existing geopolitical circumstances, the challenges and threats both to Greece and to the wider area impose the need for powerful and highly trained Armed Forces with a deterrent effect. To this end, the Leadership of the Ministry of National Defence keeps working to safeguard the national integrity, our country’s sovereign rights and our obligations towards the Alliance.

He pointed out that Greece is engaged with NATO as of 1952 and with the European Union as of 1981, confirming its special status amongst the democratic countries of the West and added that Greece fully respects the principles of the North-

Atlantic Treaty and especially, the commitment under Article 1 on the settlement of any international dispute by peaceful means and refraining from the use of force in any manner inconsistent with the purposes of the United Nations. Mr. Panagiotopoulos highlighted though that as of August, the Greek Armed Forces are standing by, in order to deal with an unprecedented provocative behavior that threatens our country’s sovereign rights in the Eastern Mediterranean, not by any third country but by a NATO member-country, Turkey.

The Minister of National Defence emphasized to the members of the Defence and Security Committee of the NATO Parliamentary Assembly that the Greek Government has made it quite clear – since the onset of the crisis – that a meaningful and constructive dialogue would be possible, provided the research / survey vessel -along with the naval patrol units that accompany it- withdraw. He reminded that on September 12th, the reopening of technical discussions was achieved under the supervision of NATO leadership for the establishment of a possible involvement avoidance mechanism in agreement with the Greek side. However, our neighbouring country proceeded with a new challenge, in violation of what was agreed on the crisis resolution mechanism, by sending the research / survey vessel even closer to the islands. According to Mr. Panagiotopoulos, this behavior confirms the inconsistency between the statements and the actions of our neighbouring country, undermining its credibility towards the Alliance, while indicates its real intentions. Turkey cannot possibly request a dialogue about the delimitation of the continental shelf, when it attempts to create a fait accompli in the same region.

Regarding Greece’s reaction, the Minister of National Defence noted that as of August, our country experiences the developments with composure, responsibility and restraint, maintaining full operational readiness and determination. He even explained that these actions affect the stability in the Eastern Mediterranean, as well as the Alliance’s unity and cohesion, since they are in contradiction with Article 1 of the NATO Treaty, given that they do not constitute peaceful means for the settlement of a dispute between two Allies and neighbours. He commented that the gunboat diplomacy cannot be considered a willingness for a peaceful settlement.

The Minister of National Defence reiterated that Greece seeks dialogue, to be held in compliance with International Law and not with the threat of use of military violence, challenges and designed



disinformation. He also stressed that while the Secretary General of NATO, Mr. Jens Stoltenberg asked that seismic research activities be avoided, he has been ignored.

In relation to all other matters of the Committee's concern, Mr. Panagiotopoulos referred to Greece's consistency with the guidelines of Defense Investment Pledge (DIP), based on which 2% of the GDP should be spent on Defence. The Government has already developed and implements an integrated plan for the modernization and the reinforcement of the resources and the materials that have to be acquired by the Greek Armed Forces. Our country will continue to have a presence in the Alliance's peacekeeping mission, to the extent that readiness circumstances allow so, as the Minister pointed out at the beginning of his speech.

With regard to migratory flows, reference was made to the incidents that occurred in May, when groups of thousands of illegal immigrants tried to breach the Greek and European borders in Evros. Mr. Nikolaos Panagiotopoulos noted that the Greek Armed Forces and the Security Forces dealt with and suppressed this unprecedented hybrid attack, which motivated many EU partners to assist both at operational level together with the Greek Authorities on-site and at political and institutional level.

As regards the NATO 2030 process, Mr. Panagiotopoulos suggested that the Alliance would maintain its importance on the international scene, strengthening its political dimension by cooperating at first with the European Union. He explained that the NATO and EU Member-States should play a full equitable part, without discriminations and exclusions, while in the same way, the decision-making autonomy of both organizations should be respected. In that direction, Greece strengthens diplomacy and the development of initiatives that reinforce stability in NATO's southern hub, by means for instance of joint trainings and joint exercises held on a regular basis with countries, such as Egypt and Israel.

Responding to questions, he underlined that our country supports the Euro-Atlantic perspective of the Western Balkan countries, based on EU and NATO principles and requirements and in full compliance with good neighbourly relations. Moreover, he stressed that the Turkish claims for the demilitarization of the Aegean islands are lacking legal foundation, whereas Greece, just as any other sovereign state, has an inherent and legal right of defence, under the UN charter, against any serious threat by Turkish military forces in territories opposite the Islands.

## 3rd Trilateral Meeting of the Ministers of Defence of Greece, Cyprus and Israel in Nicosia



The Minister of National Defence Mr Nikolaos Panagiotopoulos concluded his participation in the 3rd Trilateral Meeting of the Ministers of Defence of Greece, Cyprus and Israel, which took place today Thursday 12 November 2020, in Nicosia. After the end of the Trilateral Meeting's proceedings, a joint press conference was held, where Mr Panagiotopoulos stated the following:

"Ministers, It is a particular honour and pleasure for me to be here today in Nicosia, along with my esteemed friends and colleagues, the Ministers of Defence of the Republic of Cyprus Mr Charalambos Petridis and of Israel Mr Benjamin Gantz, for our Trilateral Meeting. The strong bonds between our three countries are based on common principles and values and it is our common vision to strive for the establishment of an environment and conditions of stability, security and prosperity in the wider region of the Eastern Mediterranean.

The materialization of a long-term, cohesive and substantial strategic cooperation, according to the international law and the principles of good neighboring relations with all the countries of the region is our common goal. Today, we had the opportunity to talk about the latest developments in the region, as well as the progress of our

cooperation in the defence and defence-technical sector. We systematically seek to enhance the interoperability of our Armed Forces and completely utilize our countries' capabilities and comparative advantages, in mutual interest sectors, such as joint training programs, inter-service exercises, exchange of military information, naval and cyber security. We discussed with the esteemed colleagues about the severe threats and security challenges in our wider region and we stressed our joint commitment and decisiveness for their effective management.

I stressed that we condemn the illegal, provocative and unilateral actions of Turkey within the sea zones of Greece and Cyprus, which constitute a flagrant violation of the International Law and of the good unneighborly relations, but also a severe undermining of the regional stability and peace in the Eastern Mediterranean.

We also agreed to further develop our, now institutionalized, Trilateral Cooperation, thus sending strong and clear messages, as well as examine the possibility of expanding it to a "3+1" framework, possibly with other countries, with which we share the same values and aims for the future of our wider region. The United States are of course included in this framework, the presence of which has a particular gravity for the security and stability in the Eastern Mediterranean.

Finally, I would like to thank the Minister of Defence of the Republic of Cyprus and my dear friend Mr Charalambos Petridis for the very warm welcome and cordial hospitality and we are looking forward to our next Trilateral Meeting in 2021, in Israel, which will constitute a new milestone in the cooperation between Greece, Cyprus and Israel. Thank you".

In the context of the visit of the Minister of National Defence to Cyprus, a private meeting was held with his Cypriot counterpart Mr Charalambos Petridis. The schedule was concluded with the bilateral meeting of the delegations of Greece and Israel with the participation of Mr Nikolaos Panagiotopoulos and Mr Benjamin Gantz.



## Libya: Operation IRINI inspected a Turkish-flagged vessel



On 22 November 2020, Operation IRINI boarded and inspected the Merchant Vessel (MV) ROSELINE A, a Turkish-flagged general Cargo vessel – in application of the United Nation Security Council's Resolutions 2292 (2016) and 2526 (2020) – concerning the arms embargo on Libya.

The vessel departed from Yarimca (Turkey) on 20 November and directed to Misrata (Libya).

In accordance with relevant UN Security Council resolutions, Operation IRINI made good faith efforts to seek the consent of the flag State. Having received no answer from the flag State, the team of the German Frigate Hamburg boarded the vessel in international waters, approximately 160 nautical miles north of the port of Benghazi. The Master of the ships and its crew assumed a cooperative attitude towards the boarding team.

When the flag State made it clear that it denied the permission to inspect the vessel, Operation IRINI suspended the activities during which no evidence of illicit material was found on board and the vessel was cleared to pursue its route. All recommended COVID-19 precautions

were observed during the activity. This is the fifth boarding activity since the start of the operation. This activity in international waters is part of the Operation's mandate.

### Operation IRINI: Statement by the Spokesperson on the recent inspection of a Turkish vessel

On 22 November 2020, the Operation EUNAVFOR MED IRINI inspected a Turkish-flagged merchant vessel in the Mediterranean. Given the pattern of navigation of this vessel, Operation IRINI had reasonable grounds to suspect that it could be acting in violation of the UN arms embargo.

Prior to this action, as foreseen by the United Nations Security Council Resolution 2292 (2016), Operation IRINI had made good faith efforts to seek the consent of the flag State by giving the Turkish Ministry of Foreign Affairs a 4-hour notice in line with the international maritime practice. Operation IRINI even agreed to extend this notice by an additional hour at the request of the Turkish Embassy in Rome, where Operation IRINI's Headquarters are located. Having received no answer from Turkey after the elapsed time, Operation IRINI boarded the vessel and inspected it in accordance with internationally agreed procedures including NATO procedures. Operation IRINI's boarding team acted with the highest degree of professionalism and no incident was registered throughout the action. The inspection was suspended later on, when Turkey formally and with delay notified Operation IRINI of its refusal to grant the permission to inspect the vessel. Until then, the inspection had found no evidence of illicit material on board and the vessel was cleared to pursue its route.

Operation EUNAVFOR MED IRINI is mandated by the European Union to contribute to the implementation of the arms embargo on Libya in accordance with the UN Security Council Resolutions 2292 (2016) and 2526 (2020).

These resolutions are binding for all UN Member States, including the Republic of Turkey. Furthermore, UN Security Council Resolution 2292 (2016) calls upon all flag States to cooperate with inspections. Operation IRINI is a concrete contribution to international efforts to help to end the conflict in Libya. It has demonstrated its ability to monitor arms embargo violations on both sides of the conflict in Libya, and it reports accordingly to the UN Sanctions Committee. We are currently at a crucial juncture for Libya's future and the implementation of the Berlin Process. Operation IRINI's mandate is more important today than ever to ensure the viability of the 23 October ceasefire agreement and the return to peace and stability in Libya.



## “ONESILOS - GEDEON 2020”

## “IASON - 2020”

### Cyprus – Israel military cooperation

The exercise "ONESILOS - GEDEON 2020", was executed successfully from 17 to 19 November 2020 in the framework of the Annual Military Cooperation Program between the Republic of Cyprus (RoC) and the State of Israel (Sol). The exercise is considered as a large-scale Joint Exercise and was planned and coordinated by the Air Force Command of the National Guard General Staff in collaboration with the Israeli Air Force (IAF).

The purpose of the exercise was to train the personnel in the tactics and procedures of air force tactical operations, to increase their combat capability in conducting air and air defense operations as well as to gain experience from the cooperation with the IAF.

The exercise took place within the Nicosia Flight Information Region (FIR) and in a large part of the land area of the RoC with the participation of land and aerial assets of the National Guard and the IAF. The exercise scenario included aircraft flights, air combat exercises, as well as attacks of specific targets at low and high altitudes and the deployment of air defense forces.

The organization and execution of this exercise, is the culmination of the stable and enhanced cooperation between the Armed Forces of the RoC and the Sol. In addition, it gives the participants the opportunity to exchange knowledge and experiences which in turn upgrade their professional training and consequently the operational readiness of the units, while highlighting the high level of training and ability of their respective Armed Forces.



The Exercise "IASON - 2020" was executed successfully from the 14th to the 16th of September, in the framework of the annual military cooperation program between Cyprus and Israel.

The exercise took place within the FIR of Nicosia with the participation of land and air assets of the National Guard of the Republic of Cyprus and the Israeli Armed Forces.

During the Exercise "IASON - 2020", joint training of personnel of the National Guard and the Israeli Air Force took place, as well as an exchange of knowledge and experiences in the field of tactical air operations.

The high - level of training, cooperation, operational readiness and professionalism of the Armed Forces of both countries was evident throughout the exercise.

Moreover, the joint training with the Armed Forces of Israel, which are among the most modern - equipped in the world, the support and coordination of air operations from Paphos Air Base and the experiences gained, have significantly contributed towards the upgrading of the operational readiness and capabilities of the National Guard.



## IAI delivers state-of-the-art technologies and systems to Greece and Frontex



**GREEK DEFENCE NEWS:** IAI is leader in both the defense and commercial markets. Can you give us some background on how the company got started in defense and what types of products you manufacture?

**IAI:** Established in 1953 as Bedek Aviation - a governmental institute for aviation - Israel Aerospace Industries started out as an all-purpose service and supplies provider, specializing in air defense solutions. In the decades since, the company has grown to become a world leader in both the defense and commercial markets, developing, producing and delivering state-of-the-art technologies and systems across a range of domains, including air, land, sea, space, cyber, homeland security and ISR.

**GREEK DEFENCE NEWS:** IAI is no doubt an exceptional company with regard to expertise and capability. Could you give us in a nutshell the company philosophy?

**IAI:** Our Statement is "Where Courage Meets Technology". We took our mission to stand at the forefront of global technology to ensure the future

prosperity of our employees, partners, and the State of Israel.

To achieve the mission, we choose the most professional, creative, innovative and best in their field employees. The company will always place the customer first, developing a client-centric solution that foster a sense of partnership and service.

As a world leader in aerospace and defense, IAI will continue to conceive and develop the most innovative and groundbreaking technologies to meet its clients' needs.

In all our activities IAI will uphold the highest standards of Corporate Responsibilities to our employees, partners and the community.

**GREEK DEFENCE NEWS:** What R&D initiatives has the company pursued to remain competitive in the marketplace?

**IAI:** At IAI we see the R&D as an essential tool to stay competitive in the tough Aerospace markets. That is why forty percent of our employees (about 6000) are Engineers. IAI is the Israel National Aeronautical, Space and Radar Center.

As a company guided by principles of progress and creativity, we support and lead a set of initiatives and activities that promote and encourage innovation, both within and outside of the company, creating change for IAI and our partners.

Domestically – IAI is a corporate partner in the iHLS startup accelerator and global innovation platform, SOSA.

Globally – IAI is a corporate partner in international accelerator Starburst - the only one in the world to specialize in the fields of European aerospace and defense. In addition, IAI in the US is a member of the New Space consortium of the Techstars and Starburst space accelerator, along with the US Air Force, NASA, Lockheed-Martin, MAXAR and SAIC

**GREEK DEFENCE NEWS:** How do you place IAI, in global market?

**IAI:** As a truly global company, IAI operates in varied markets around the world. We have Marketing Representatives at North America, Brazil and Colombia in the South America, India and South Korea in the East, Germany and the UK in Europe - our excellence is multinational and multilingual.

**GREEK DEFENCE NEWS:** Can you please tell us some details about your recent UAVs deals in Greece and Frontex?

**IAI:** IAI Heron RPAS (Remotely Piloted Aircraft System) are well known and are in use operationally by over twenty users around the world.

The Heron systems exist in different configurations, meeting different operational scenario. The Heron systems accumulated over 450,000 flight hours.

In 2020, IAI signed two important contracts, one for commercial use EU as implemented by the European Border and Coast Guard Agency (Frontex) and the other for the Hellenic Ministry of Defense.

The configuration chosen by both is based on the Maritime Heron system, equipped with day and night sensor, maritime patrol radar and satellite communication. The systems offer extended operational endurance in a wide range of scenarios including maritime patrol, marine and land border protection, search and rescue, disaster management and more.

Greece – The contract was signed as GTG early May 2020.

Frontex - A framework agreement for four years with ADAS (AIRBUS is IAI partner in this domain) for EU/Frontex. Frontex awarded a contract following a very tight evaluation process that included a trial on site.

The Heron system is a multi-mission multi payload MALE (Medium Altitude Long Endurance) system with a unique operational flexibility and can be easily modified with different sensors and capabilities as desired by customers representing wide variety of operational needs. IAI already integrated dozens of different payloads and proved exceptional capability in remote ATOL.

**GREEK DEFENCE NEWS:** Are there any new developments you can share with our readers concerning other export activities?

**IAI:** IAI is developing unique platforms and technologies for the global market. As a world leader and pioneer in the unmanned arena we have UAVs solutions from the strategic level to the tactical levels for the fighting forces. IAI is also a pioneer in the 'Loitering Munition' arena. On the other hand, we are leading the 'Anti Drone' solutions with our sophisticated radars and jamming systems.

Our Barak MX Air Defence system is gaining momentum in the market and provides to our customers a land and maritime arenas full umbrella protection from various aircrafts and missiles threats.

Since the gas discovery in the Mediterranean see IAI systems are protecting Israel assets at sea.

As aeronautical center we are world leaders in innovative technologies like Data Link, Satellite Communication and Immune GPS.

**GREEK DEFENCE NEWS:** What is the IAI ambitions for the future?

**IAI:** In a fast-evolving world, where adversaries constantly challenge national defense, we want to be your experienced and skillful allies to rely on. A trusted partner, courageous and innovative to deliver the capabilities you need and afford. That's IAI – Where Courage Meets Technology.



## Arquus could offer protected land mobility to the Hellenic Army



Hellenic Ministry of National Defence has under consideration the upgrade of the Hellenic Army's APCs as well as the replacement of the 50 years old Steyr 680 M truck fleet and also the equally very old Mercedes-Benz G Wagons vehicles. According to the Greek MOD announcements presentations have already been made by various interested foreign companies to the Hellenic Army General Staff.

Arquus – until recently more known as Renault Trucks Defense, Acmat and Panhard, may have a say in this with historic bonds with the Greek Army, a wide range of vehicles and services, as well as the military cooperation between France and Greece. Designer and manufacturer of world-renowned vehicles such as the VAB, VBL, VLRA, VAB Mk3, Bastion and Sherpa, Arquus is a major supplier to more than 60 countries around the world, among which Greece. It is considered as one of the candidate companies which have expressed serious interest to supply the Hellenic Army and transfer relevant technology to enable the local defence industry as the main subcontractor.

Arquus is a major supplier to the French Army since 1906 and the very first motor vehicle in service in the Army. Arquus has a fleet of nearly 25,000 vehicles currently serving within the French Army, 20,000 of which are directly supported by the company. It is also a major partner for Greece. Since the delivery of the first VBLs to Greece in 1998, Arquus has always been at the side of the Greek army, notably carrying out numerous technology transfers in order to give it operational independence for the maintenance of the vehicles.

The French Army's VBLs are currently being upgraded by Arquus to a brand-new standard, the VBL Ultima. Resulting from a program to upgrade the VBL (Light Armoured Vehicle) in anticipation of the VBAE (Armoured Engagement Support Vehicle) program, for which Arquus has unveiled their Scarabee, the VBL Ultima benefits from numerous improvements.

According to the French officials, the original 95-horsepower diesel engine is being replaced by a new 130-horsepower diesel engine, allowing a speed greater than the 95 km/h of the original standard. The upgraded VBLs also feature a new Brake Assist system and improved front and rear suspension systems to accommodate an increased payload and to improve vehicle handling. Such an upgrade would significantly improve the operational performance of the Greek Army's VBLs (increased power, safety and payload) and extend their service life by more than 20 years. The new standard could also improve the interoperability between the Greek forces and their allies.

As the VBL Ultima is currently being produced for France, the Greek Army could experiment that new version very soon. The modernization of the entire fleet of Greek VBLs could then take place in Greece at the Army depots, with some support from Arquus, or it could be conducted in Greece by industrial companies, creating work and building competence.

Outside of the VBLs, Arquus could also have some ideas for the replacement of the Greek Army's 50 years old truck fleet and the equally very old G Wagons. Arquus, already supplier of the GBC180, VLRA and several others, has recently unveiled a fully new range of military trucks, the Armis family, coming in 4x4, 6x6 and 8x8, which will be competing for the French Army's trucks replacement. The company has also recently undertaken a production program of 1,587 heavy trucks in several versions for the Canadian Army.





© 2020 Arqus - VLRA

Arqus has been offering for a few years its VLRA 2 tactical truck and its specifically military-built chassis, which benefits from the experience of the first VLRA that has equipped the French Army's projection and Special Forces units for decades and continues to serve within the Army. This new-generation chassis would fit the Greek Army's needs with its high off-road payload capacity and low-cost maintenance, thanks to its motorization and transmission without electronics.

For everyday missions in low-threat environment and general-purpose transport, the Army could also take a look at the Trapper VT4, chosen by France to replace the P4 light vehicle, a French variant of the Jeep G Wagon already partly manufactured by Panhard. Today, more than 1,800 VT4s have already been delivered out of the 3,700 ordered by the French forces.

These 4x4s have been extremely well received by the French and have recently undergone their first external operation in Lebanon. The production of these vehicles could also very well be conducted in Greece with some technology transfer.



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Arqus' production facilities are currently producing VBL Ultimas and VT4, so transferring vehicles to Greece for experimentation could in fact prove very easy and quick to organize.

As we can see, the replacement of some of the older capabilities of the Greek Army could very well be a much wider opportunity to define the Army Greece needs to face the threats of today and tomorrow, in all areas of the battlefield.



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© 2020 Arqus- Fortress



© 2020 Arqus- VAK Mk3

## Israel Shipyards to build Corvettes in Greece

ONEX Neorion Shipyards based in Syros Island, Greece, and Israel Shipyards based in Haifa entered a teaming agreement to jointly propose a next generation corvette design for the Hellenic Navy. Both shipyards will be cooperating closely in the international development and promotion of the new corvette with production which would take place both in Greece and Israel. Israel Shipyards in an exclusive interview with the GREEK DEFENCE NEWS presents its products and explains how the Hellenic Navy will benefit from local production of the most advanced corvettes and will gain a high level of independence.

**GREEK DEFENCE NEWS:** Is no doubt Israel Shipyards Ltd is an exceptional shipbuilding unit with regard to expertise and capability for designing, developing, and manufacturing various types of vessel and has been providing seaworthy solutions for the Naval and commercial marine markets. Can you give us some background on how the company got started? What are the values of your company?

**ISRAEL SHIPYARDS:** Israel Shipyards Ltd. was established in 1959 as a Governmental owned company, for design, construction, and maintenance of Naval and Commercial vessels. During the 1960's it started to develop and construct the SAAR 4 class Missile boats for the Israeli Navy, as a result of the need for independence in the country's Naval capabilities, after the French embargo imposed on the State of Israel as a result of the Six Days War. Until the late 1980's it has one main customer – the Israeli Navy. Then, as a result of Israel receiving the FMF from the USA, the workload for the Israeli Navy was significantly reduced. The shipyard was privatized in 1995, and the major change was the change of focus – to export to worldwide customers, as we are doing till nowadays.

Israel Shipyards values include our full support to our customers and offering them customized innovative turn-key solution while leaning on the operational feedback received from the Israeli Navy and the state-of-the-art combat systems produced by Israeli defense companies.

We believe in listening to our customers, being extremely flexible to find the best solutions to their needs and being fully transparent to our customers/partners.

**GREEK DEFENCE NEWS:** Where does Israel Shipyards Ltd stand today, and what have your strategic priorities been recently?

**ISRAEL SHIPYARDS:** Today Israel Shipyards is developing different types of Naval vessels for Navies, Coast guards and other Maritime Law Enforcement units, including Fast Patrol Crafts for "Brown waters" and for Paramilitary missions, as well as Corvettes and Fast Missile boats for "Blue waters". We will continue offering our combat-proven vessels with a high level of flexibility and advanced combat systems alongside with new designs.

**GREEK DEFENCE NEWS:** Could you tell us about Israel shipyards Ltd, approach towards developing new products? What R&D initiatives has the company pursued to remain competitive in the marketplace?

**ISRAEL SHIPYARDS:** The need for a new product will usually come from analyzing the ever-changing market needs, or, it can come from the requests of the Israeli Navy.

Our approach is to find the most cost-effective solution that will enable customers to use this solution without increasing too much their budget burden.

We do our utmost to follow the need for long-lasting solutions at an achievable cost.

While developing a new product we will look for a major upgrade of the propulsion system, trying to aim for full independence of the vessel and its crew and keep the operation and maintenance activities as simple as possible, in order to make it easier for the crew of the vessel.

**GREEK DEFENCE NEWS:** The agreement between ONEX NEORION Shipyards and Israel Shipyards is a very positive and symbolic development, which is part of the overall framework for strengthening Greece's cooperation and strategic relationship with Israel. Can you please tell us how the Hellenic Navy can be benefited from that?

**ISRAEL SHIPYARDS:** The cooperation with ONEX Company includes a major effort of T.o.T. (transfer of Technology), and sharing knowhow.

With that focus, the HN will benefit from local production of the most advanced Corvettes and will gain a high level of independence as they will not be waiting for other countries to offer and construct the needed vessel.

As it will be similar vessel to the vessel that the Israeli Navy is currently planning to put into service – there will be an option of sharing maintenance activities between the two countries and supporting each other in know-how and even in spare parts and training.

**GREEK DEFENCE NEWS:** How do you place Israel shipyards Ltd, in the global market?

**ISRAEL SHIPYARDS:** Israel Shipyards Ltd. is a medium-sized shipyard, focusing on supplying its customers with a “full package” of modern and combat-proven vessels, with the most advanced combat systems. The main point for us is efficiency – the highest possible ratio of fire-power to displacement.

**GREEK DEFENCE NEWS:** Are there any new developments you can share with our readers concerning export activities?

**ISRAEL SHIPYARDS:** Israel Shipyards is currently in process of getting orders for its newly designed Naval vessels from Navies in four continents, and I strongly believe that some good news in this respect will be published shortly.

**GREEK DEFENCE NEWS:** What are Israel shipyards Ltd, ambitions for the future?

**ISRAEL SHIPYARDS:** To become the supplier of choice for friendly countries, while sharing know-how and development efforts with highly reputed partners from these countries.



## Leonardo's KRONOS radar family stands ready to meet NATO nations' emerging surveillance needs



In today's defence and security landscape, new threat scenarios are emerging and armed forces are being required to deliver increased security and improved response times with reduced manpower. These factors underpin the demand for easily deployable, high performance and extremely reliable radars to support a range of challenging operations.

*Like other NATO nations, Greece is looking to enhance the capabilities of its armed forces in response to new threats. Leonardo's answer to this challenge is the multi-functional, multi-mission KRONOS radar family.*

KRONOS family radar systems, designed for the land and naval domain, can perform surveillance, track airborne targets and provide guidance for active and semi-active missiles, all simultaneously and independently.

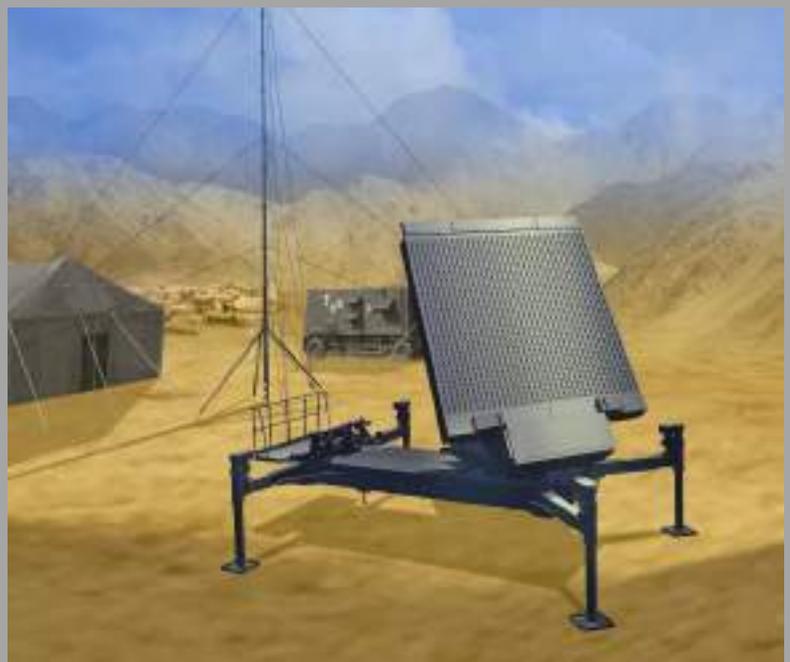
This ability to deliver multiple functions at the same time is provided by Active Electronically Scanned Array (AESA) technology, developed in-house by Leonardo which has its own Gallium Arsenide (GaAs) and Gallium Nitride (GaN) manufacturing capabilities, and is provided by the Resource Management Processor that incorporates the long and proven experience of Leonardo in Multifunction Radar Design. Both land and naval operations have benefited from the introduction of fully active array antenna technology and Leonardo has been at the forefront of innovation in this domain.

The land variants from the KRONOS family are the KRONOS GRAND and the KRONOS LAND. KRONOS GRAND is a multifunctional radar system designed by Leonardo to support tactical air and coastal defence operations. The system simultaneously performs surveillance, target tracking and Electronic Counter-Counter Measures (ECCM). It detects and tracks all types of airborne and maritime threats and can be easily integrated into a defence surveillance network, contributing to the general Recognized Air picture (RAP). Recently, the Armed Forces of Qatar procured low-level radar systems based on KRONOS GRAND (in its mobile and fixed configurations) to counter low level, high manoeuvring targets and theatre ballistic missile (TBM) threats.

KRONOS LAND is a compact, flexible and fully autonomous radar system for tactical operations. It fits within a standard 20ft ISO container and can be transported by commercial trucks, helicopters, aircraft, ships and trains. It can be deployed on unprepared sites by two people and made operational in 10 minutes from arrival on-site.

The KRONOS GRAND MOBILE radar is a powerful land-based variant designed for missions including surveillance and missile defence against traditional aerial threats, at a variety of altitudes, and defence against tactical ballistic missiles, whose speed and trajectories are extremely challenging even for modern defensive systems. The widespread and increasing use of these threats has led to Anti-Tactical Ballistic Missile (ATBM) capabilities being seen as a priority by potential users.

Together with the KRONOS GRAND NAVAL maritime variant, the KRONOS GROUND SHIELD and the brand-new KRONOS Dual Band, a four-face fixed radar system, the family covers the full spectrum of Ballistic Missile Defence (BMD) capabilities that a complex modern scenario could require.





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UAE Armed Forces

## THALES AND NEXTER WILL EQUIP THE SHIPS OF THE FRENCH NAVY WITH A NEW GENERATION OF ARTILLERY

The RAPIDFire system developed by GME Thales and Nexter was chosen by the General Directorate of Armaments (DGA) in order to equip future ships of the French Navy with new artillery. This new system will provide surface vessels with a close self-defense capability against modern air and surface threats.

Naval forces today face multiple threats with complex behaviors, such as those represented by aerial and surface drones, light aircraft and missiles. The RAPIDFire developed by Thales and Nexter responds to this very short-range defense need of the Armed Forces by exploiting the know-how of the two groups. It is a new generation artillery system, multi-threat (air and surface) and multi-environment (land and naval), whose cost of engagement is adapted to that of these threats.

The RAPIDFire is a high precision weapon system thanks to its optronic sight integrated on the turret, its powerful fire control algorithms, its gun and its automatic ammunition management system allowing the best reactivity and optimal efficiency for the operator. The RAPIDFire integrates the 40 mm gun developed by CTAI, the international subsidiary of Nexter Systems and BAE Systems, which arms the new generations of ground armored vehicles in France, Great Britain and Belgium. The system has the capacity to use the whole range of munitions developed within the framework of land programs and is predisposed to use a future so-called "intelligent" A3B (Anti-Aerial AirBurst) munition.

The temporary group of companies (GME) formed by Nexter and Thales for RAPIDFire is a continuation of the close partnership initiated by the two groups ten years ago. Today, the program is in the development phase. Then will follow the qualification, production and delivery of weapons systems to the forces, the first copy of which will be delivered in 2022. Developed in a surface – air approach allowing use at sea but also from land, the market also provides an option to prepare for future use on land carrier. The RAPIDFire, a true joint solution, will thus be a gun system capable of equipping naval, land and air forces.

"We are very happy to support the French Navy in strengthening its defense solutions. Because it combines speed of implementation and precision, the RAPIDFire developed in cooperation with Nexter constitutes the perfect answer to protect the buildings of the French Navy against modern threats and is intended to become an essential and sustainable element of our offer of advanced solutions for the protection of our forces." Thomas Got, Managing Director Integrated Systems for the Protection of Airspace, Thales.

"The 40 CTA has unmatched characteristics of power and compactness, which make it a weapon system particularly suited to the protection of surface vessels. With RAPIDFire, Nexter is delighted to broaden the spectrum of employment for CTA40 in cooperation with Thales and the French Navy. » Michel Vatrej, Director of Systems and Programs, Nexter.



## SCORPION: GRIFFON command post is qualified

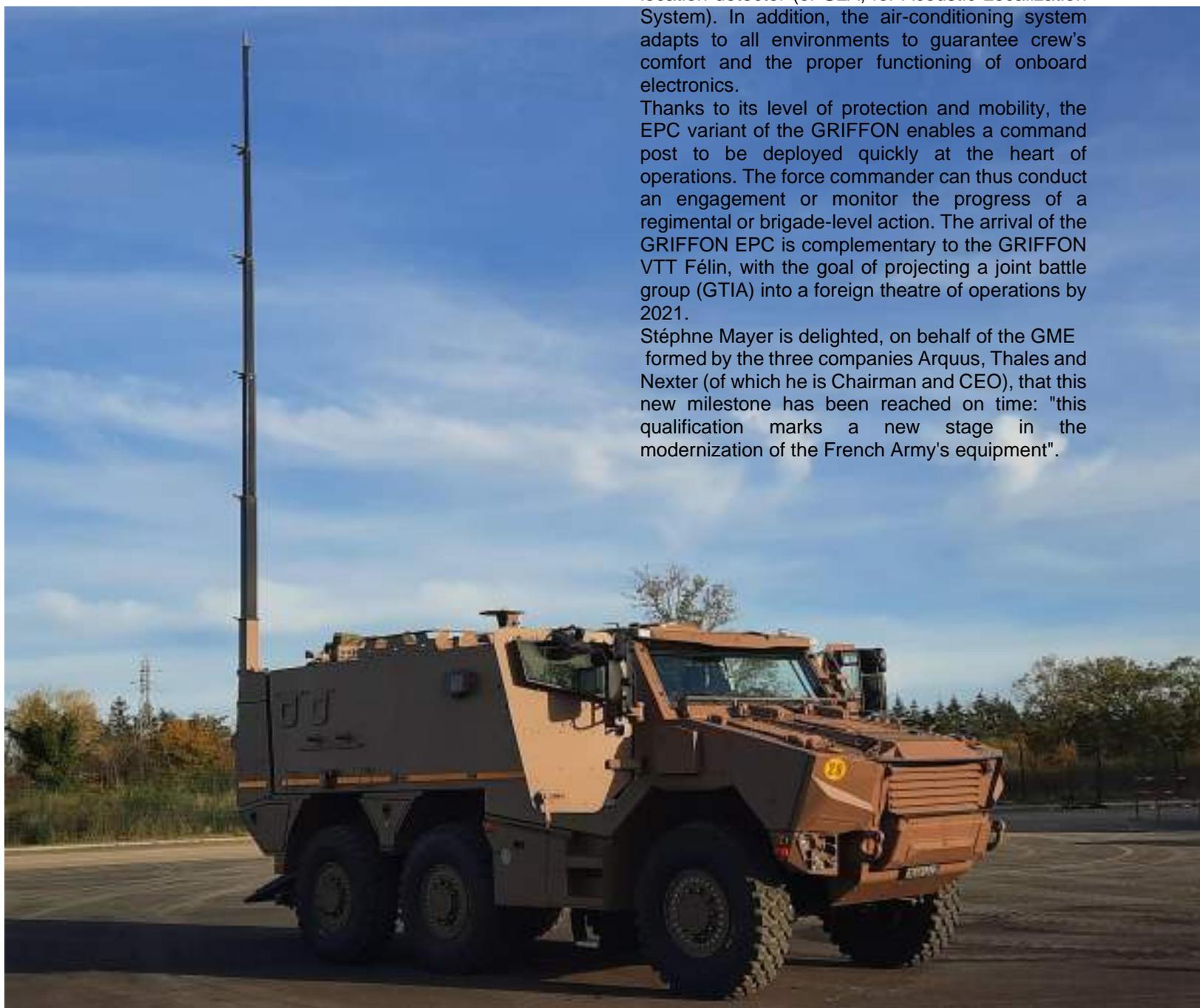
On 13 November 2020, the French Delegation for Armaments (DGA) qualified the command post vehicle (EPC) variant of the GRIFFON vehicle. At the same time, the first examples are being submitted for acceptance by the DGA's quality department at the Roanne site. Therefore, the three first GRIFFON EPC have been delivered to the Army technical section (STAT) which will continue the operational evaluation of this equipment with its rapid deployment within the regiments in sight. The GME (temporary grouping of companies) EBMR (Engins Blindés Multi-Rôles) comprised of Nexter, Arquus and Thales is fully mobilized on the production of the first 20 series GRIFFON EPCs to be presented to verification operations by the end of 2020. Ultimately, the SCORPION program calls for the acquisition of 333 units of this variant, half of which will be delivered by 2025.

As a reminder, the SCORPION program aims to modernize the Army's combat capabilities and in particular to improve command through new information resources.

The GRIFFON EPC can accommodate a pilot and a gunner in the front, and five soldiers in the rear of the vehicle. From an external point of view, the silhouette of the EPC does not differ from the VTT Félin variant (troop transport vehicle). Only the armament changes, with the integration on the roof of a new-generation T2 remotely operated turret armed with a 7.62mm caliber. Inside, on the other hand, the GRIFFON EPC is fully equipped to accommodate a command post: communication means, large screens, a board and a printer. This variant is designed to accommodate latest-generation electronic equipment for collaborative combat: the vetronics common to the SCORPION platforms, the CONTACT joint radio, the SCORPION Combat Information System (SICS), the ANTARES optronic system offering the crew a 360° vision of the environment, as well as a gunfire location detector (or SLA, for Acoustic Localization System). In addition, the air-conditioning system adapts to all environments to guarantee crew's comfort and the proper functioning of onboard electronics.

Thanks to its level of protection and mobility, the EPC variant of the GRIFFON enables a command post to be deployed quickly at the heart of operations. The force commander can thus conduct an engagement or monitor the progress of a regimental or brigade-level action. The arrival of the GRIFFON EPC is complementary to the GRIFFON VTT Félin, with the goal of projecting a joint battle group (GTIA) into a foreign theatre of operations by 2021.

Stéphane Mayer is delighted, on behalf of the GME formed by the three companies Arquus, Thales and Nexter (of which he is Chairman and CEO), that this new milestone has been reached on time: "this qualification marks a new stage in the modernization of the French Army's equipment".



## Naval Group launches the FREMM Lorraine, the second frigate offering an enhanced air defence capability

Naval Group has launched the FREMM Lorraine in Lorient on Friday 13th November. This ship was ordered by the French General Directorate of Armament (DGA) on behalf of the French Navy. The program management is entrusted to the Organization for Joint Armament Cooperation (OCCAR). The FREMM Lorraine is the tenth unit of the FREMM series produced by Naval Group, and the eighth and last one added to the French Navy's fleet. It is also the second FREMM frigate of the FREMM DA type, presenting an enhanced air defence capability.

The French Minister of Armed Forces (Minister of Defence) Florence Parly, Admiral Pierre Vandier, Chief of Staff of the French Navy, and General Engineer Emmanuelle Thivillier, in charge of naval programs at the French General Directorate of Armament (DGA) as well as the Chairman and CEO of Naval Group, Pierre Eric Pommelot, alongside employees from the Lorient site participated to the launching ceremony.

Fifty-four months after the start of the production, the FREMM DA Lorraine left the construction form of Naval Group site in Lorient. This operation took place on Friday 13th November 2020, fully

complying with the schedule set by the Military Planning Law, while respecting the safety and health rules currently enforced.

Technical adaptations have been made on both FREMM DA such as a more powerful multifunction radar supplied by Thales, enhanced communications, three additional consoles of the Setis® Combat Management System in the "central operations center" with an enhanced air defence capability through the use of Aster 15 and Aster 30 missiles. The FREMM DA also benefits from a new mast, optimized to increase detection performance. In addition to performing the same anti-submarine warfare missions as the previous FREMMs, the FREMM DAs will be responsible for the air defence of major units: Charles de Gaulle aircraft carrier, or amphibious helicopter carriers (PHA) as part of the naval or amphibious air group.

More generally, the FREMM frigates integrate the evolution of systems over time to ensure the latest units of the series benefit from the latest technologies such as: additional cyber capabilities, deployment of Liaison 22 (liaison between NATO military units), integration of a tactical digital table, etc.

"Throughout this demanding program, we have maintained close ties with our customer, in order to best respond to the expectations and the technological challenges regarding the onboard innovations. This feedback led us to change our industrial organization. Modular construction, supply chain optimization and block pre-fabrication have reduced construction lead times and, ultimately, production costs. As a result, we have



gained in efficiency and performance, while at the same time improving the working conditions of our employees, which has led to a considerable reduction in accidents at work. We are proud to launch today the latest French FREMM! » declared Laurent Espinasse, Executive Vice-President for Industry at Naval Group.

Naval Group's site in Lorient offers industrial infrastructures that enable us to meet the technical and technological challenges of the latest generations of military ships, including a 15,000 m2 covered construction form. The design tools and methods have evolved considerably during the FREMM program thanks to virtual reality. All of the ship's data, including equipment operating data, is integrated into a digital mock-up. The infrastructures have also been modernized, including the extension and renovation of the construction nave, the installation of three covered paint booths and the extension of the quay.

To deliver frigates with the required military performance, Naval Group has mobilized no less than 250 skills throughout the program. Some of them are very specific and rare and are often the result of a long or even very long acquisition: sheet metal carpenter, formator-straightener, hull welder, pipe fitter...

## Technical characteristics of FREMM DA

The FREMM program has been running on a stable schedule since the last Military Planning Law. Eight units of the FREMM series have been delivered between 2012 and 2019. Aquitaine in 2012, Provence in 2015, Languedoc in 2016, Auvergne in April 2017, Bretagne in July 2018 and Normandie in July 2019. Alsace was launched on April 18, 2019 and will be delivered in 2021. Internationally, the Mohammed VI was delivered to Morocco in 2014 and the Tahya Misr was delivered in Egypt in 2015.

FREMM DA Alsace is heavily armed and uses the most powerful weapons systems and equipment such as the Herakles multifunction radar, the Aster 15 and 30 and Exocet MM 40 missiles and the MU 90 torpedoes. The performance of her combat system is enhanced with increased radar and communication capabilities, new radar and electro-optical fire control and a SETIS® Combat Management System with specific air defence functions.

- Overall length: 142 meters
- Width : 20 meters
- Displacement: 6,000 tons
- Maximum speed: 27 knots
- Crew capacity: 123 people (+ 14 people for the helicopter detachment)
- Accommodation capacity: 165 people
- Autonomy : 6 000 nautical miles to 15 knot



# Damen and Thales to build the German MKS 180 frigate of the future



Damen Schelde Naval Shipbuilding and Thales signed on November 17, 2020, the contract for the delivery and full integration of Thales’s Mission and Combat System for the four MKS 180 class frigates contracted by the German Navy. The system will be designed by Damen and completely built by German shipyards, under Damen’s project management.

Valued at €1.5B, the contract illustrates Thales’s leading position in global naval integration. It will be executed by Thales’s naval Centers of Excellence in Hengelo (the Netherlands), Kiel and Wilhelmshaven (Germany) in cooperation with a substantial number of German subcontractors.

Underpinning this contract is the proven cooperation of German and Dutch naval industries, including numerous joint opportunities for Damen and Thales in the Netherlands to innovate within naval shipbuilding projects, often with the participation of the Netherlands’ Ministry of Defence. The project underscores Damen’s and Thales’s ambition to build further cooperation with shipyards and partnering industries in high-end European naval programmes.

Thales’s Mission and Combat System includes the comprehensive Tactics Combat Management System and the AWWWS (Above Water Warfare System) Fire Control Cluster. The contract includes four ship systems, logistic services and multiple

land-based test and training sites, as well as the option for one or two additional ships.

AWWS is a cutting-edge warfare suite that helps the ship crews to counter and neutralise complex saturation attacks by continuously analysing and optimising the tactical environment and deployment of resources. AWWS will be combined with APAR\* BI2, the evolved version of Thales’s proven AESA\* multifunction radar. In 2019, Thales signed an AWWS development contract for the new M-frigates for the Belgian and Dutch Navies.

In the past years, Thales has been awarded several large contracts by European NATO navies, thanks to innovative solutions and its proven reliability as an industrial partner. These contracts have made Thales the de facto naval combat system partner of NATO.

The first ship of the MKS 180 class will be operational in 2028. The entire programme will run for over ten years.

“Winning such a substantial contract within the strict framework of an objective scoring system reinforces our global leading position in high-end naval integration. Thanks to our innovative capabilities, the German Navy will be able to execute both current and future tasks whilst substantially contributing to stability in the operational theatres all over the world.” Gerben Edelijn, CEO of Thales Netherlands.

“As a partner in the MKS 180 programme, Thales Deutschland not only contributes to a high German value-added share, but also brings many years of experience in European cooperation and proven systems expertise. This programme will create new, high-quality jobs in Germany, within an exemplary framework of European defence cooperation. We will also contribute to maintaining the German Navy’s operational capability at the highest level within the alliance,” Dr. Christoph Hoppe, CEO of Thales Deutschland.

“We are very honoured by this notification which further solidifies our long-standing cooperation with the German Navy and Damen. We sincerely thank our customers for their continued trust. This huge contract anchors our position as global leader in high-end naval systems integration. The German Navy will benefit from cutting-edge technological systems thanks to the diversity of talents at Thales”. Patrice Caine, Chairman and CEO of Thales.

\* APAR: Active Phased Array Radar  
\* AESA: Active Electronically Scanned Array

## Exocet SM39 and MdCN firings from the new French submarine "Suffren"

Armed Forces Minister Florence Parly hails the success of the first naval cruise missile launch by the nuclear-powered attack submarine Suffren

- On October 20, 2020, the Suffren, the first-in-series of the six nuclear-powered attack submarines (SSNs) in the Barracuda programme, successfully completed the test firing of an MdCN (Missile de Croisière Naval) naval cruise missile from the sea near the DGA missile test centre at Biscarrosse.

- Florence Parly salutes this achievement: "For the first time, a French submarine has fired a cruise missile. This success gives our Navy a new strategic capability and places it among the world's best. This new weapon is a real breakthrough, the result of years of effort and investment, enabled by the 2019-2025 military programming law. I want to congratulate everyone – in the Navy, the DGA, and industry – who made this firing possible. Until now, France's submarine force could strike submarines and surface ships. Henceforth, it can destroy heavy land infrastructure at long range."

- The firing completes the qualification phase of the integration of all Suffren's weapon systems, carried out as part of its sea trials, conducted by the DGA (France's Defence Procurement Agency) since last April.

- This success marks a key stage in the Suffren's trials with a view to its final qualification by the DGA. The Suffren will be delivered to the French Navy by the end of 2020, before entering active service in 2021.

This test firing of the MdCN naval cruise missile – following careful preparations by teams from the DGA, the French Navy and the manufacturers MBDA and NAVAL GROUP – is the last milestone in a series of tests designed to verify the correct functioning of the Suffren's armaments and of its combat system in general. With a range of several hundred kilometres, the MdCN is tailored for missions against infrastructures of high strategic value. After the Multi-Mission Frigates (FREMM), the Suffren-class SSNs are the first French vessels to be equipped with this conventional deep strike capability. The ability to deploy the MdCN from

submarines maintains the constant and undetected threat of a strike from the sea against enemy targets located far inland, and very significantly increases the penetration capacity of French weapons in military theatres of operation.

During its trials in the Mediterranean, the Suffren also successfully completed a test firing of an Exocet SM39 underwater-launched anti-ship missile from the sea near the DGA missile test centre on Île du Levant, as well as several test firings of the F21 heavy torpedo, a next-generation weapon that will ultimately be carried on all French Navy submarines.

The validation of the Suffren's entire combat system paves the way for the end of sea trials and its overall qualification, which will enable it to be delivered to the French Navy for final verification of its military characteristics and commissioning for active service.



## CV90 Holland, Investing in the Future Battlefield

As one of seven European users of the CV90, the Royal Netherlands Army operates 144 CV90s. Being a part of the CV90 family means that the user is working closely and continuously with BAE Systems to improve the vehicle's current capabilities and looking at investments that will ensure the Dutch Army's CV90s stay relevant for future challenges.

As part of a more than 500 million EUR upgrade program, the most recent step forward is the implementation of a rubber track system on the Dutch CV9035 Infantry Fighting Vehicle. What may seem like a small change from steel tracks to rubber has an enormous benefit – the change will improve crew endurance and running costs and significantly reduce weight, which in turn allows for better performance.

Altogether, the change to rubber tracks increases the potential for further upgrades. The new contract, signed earlier this month, includes development, testing and verification, as well as the delivery of implementation kits for training alongside the Dutch customer – this will secure Dutch defense security of supply for many years to come.

The modification of the CV9035NL vehicles from steel tracks to a rubber track system has many benefits, including cutting the noise level inside the vehicle by a massive 10 dB and vibration levels by 65 percent.

"The reduced vibration levels will increase the life expectancy of electronics, optronics, and ammunition, which will significantly reduce vehicle running costs," explains Dan Lindell, Director Combat Vehicles at BAE Systems Hägglunds. "What's more, with the reduction of close to 1 tonne in vehicle weight as a result of the change to a rubber track system, there will be increased potential for continuous growth."

There are significant benefits for the Dutch CV90 crew too. The change to a rubber track system will help to reduce crew fatigue thanks to reduced noise levels inside the vehicle. The adjustment also improves the CV90's stealth on the

battlefield and increases its mobility in the most challenging conditions.

This modification is the latest in series of incremental upgrades to the Dutch CV90s. Most recently, in 2019, the Dutch Army selected BAE Systems to integrate the Elbit Systems' Iron Fist Active Protection System (APS) into its fleet. Iron Fist is an advanced technology that automatically detects, tracks and neutralizes incoming threats to protect the vehicle and its crew.

"This development is a real strategic milestone in the CV90's approach to holistic survivability," added Lindell. "It complements the already existing stealth- and soft-kill layers with further means to defeat the incoming threat, making survivability even more achievable." While focused on the next phase of their Mid-Life Upgrade program, the Netherlands still finds time to join six other European nations as part of the CV90 User Club.

These annual meetings take place in different customer countries on an alternating basis, with the most recent held in Örnsköldsvik, Sweden, where BAE Systems manufactures the CV90. Every meeting is a forum for each nation to share combat experiences, concerns about emerging threats and requirements, or ideas for new innovations and technologies. As a member of the club there is always something more to learn as the group works closely together with the CV90 team to continuously evolve the vehicle's capabilities as a modern, advanced, and affordable combat vehicle.

The rubber track system is jointly developed by Soucy International in Quebec, Canada, and BAE Systems Hägglunds in Sweden. Soucy has designed and produced the tracks and BAE Systems has qualified the system in full-scale trials. CV90s with rubber track systems are already in use by the Norwegian forces and have been through the real test of active missions in northern Afghanistan.



# Leonardo: the successful C-27J Spartan sheds its skin to reach new performance heights

- Building on its proven in-service reliability in disaster relief and military operations the C-27J Next Generation will expand its mission capability
- The first enhanced aircraft will be delivered to an undisclosed customer in 2021
- Mission-proven across all geographic conditions, in the most demanding operational tasks, the C-27J is the ideal platform for the continuous introduction of new capabilities

Leonardo has begun the final testing of the C-27J Next Generation which features new equipment, a new avionics system and advanced aerodynamic devices, these will enhance the existing high performance of the aircraft. The first C-27J in the new configuration will be delivered to an undisclosed customer in 2021.

The performance and reliability of the C-27J Spartan continues to evolve as the best response to its customers' needs. Pushing on the aircraft's versatility and mission flexibility, the C-27J offers an ever-increasing range of mission solutions, which adapt in response to new challenges faced by operators.

A true force enabler, its unrivalled multi-mission capabilities are key in presenting the latest evolution of the Spartan as a cost-effective solution and an intelligent investment for nations, which are selecting it for their military, as well as civil protection requirements.

Marco Zoff, Leonardo Aircraft Division's Managing Director, said: "The enhanced C-27J brings the unrivalled quality and capabilities of the Spartan to the next, higher level. Its operators will benefit from modern avionics, increased performance and efficiency. The Spartan embodies the essence of national security, proving to be the best asset for armed forces' defence operations and for their fundamental contribution to population support and disaster relief." In a world hit this year by the COVID-19 pandemic and other emergencies international media have extensively reported on the C-27J's relentless and effective support to communities in need. Mr. Zoff also added: "Our customers have discovered in this aircraft an element of social inclusion, because it is the only aircraft capable to reach people in the most remote rural areas of their nations."

Leonardo is committed to serving and protecting communities around the world, contributing to their sustainable growth by leading in next generation technologies. Partnering with Governments, private organizations and industries for the best security and safety capabilities is a cornerstone of Leonardo's BeTomorrow2030 Strategic Plan.

Already acknowledged as the most effective multi-mission military transport aircraft in its class, the C-27J Next Generation today features comprehensive new avionics and aerodynamic developments with new winglets, for improved operational efficiency and even better performance. Mission-proven across all continents with a number of prime air forces, the Spartan is operated in the world's most demanding operational environments - from the Andes to Afghanistan - for military transport, cargo and paratroopers air drop, last tactical mile troop support, special operations, humanitarian assistance and disaster relief.



## Bell APT 70 Successfully Completes NASA's Systems Integration and Operationalization Activity

Bell Textron Inc., a Textron Inc. company, announced today the successful flight of the Bell Autonomous Pod Transport (APT) 70 as part of a joint flight demonstration with NASA. Bell was selected to participate in NASA's Systems Integration and Operationalization (SIO) activity in 2018, which includes multiple flight demonstrations focusing on different types of Unmanned Aircraft Systems (UAS) and their flight environments.

The objective of Bell's SIO demonstration was to execute a Beyond Visual Line-of-Sight (BVLOS) mission in an urban environment transitioning into and out of Class B airspace representing future commercial flights. Mission results will be used to evaluate and demonstrate Detect and Avoid (DAA) and Command and Control (C2) technologies for use in future certified operations in controlled and uncontrolled airspace. Data collected during the demonstration will be used to support future standards development and Federal Aviation Administration (FAA) certification guidelines.

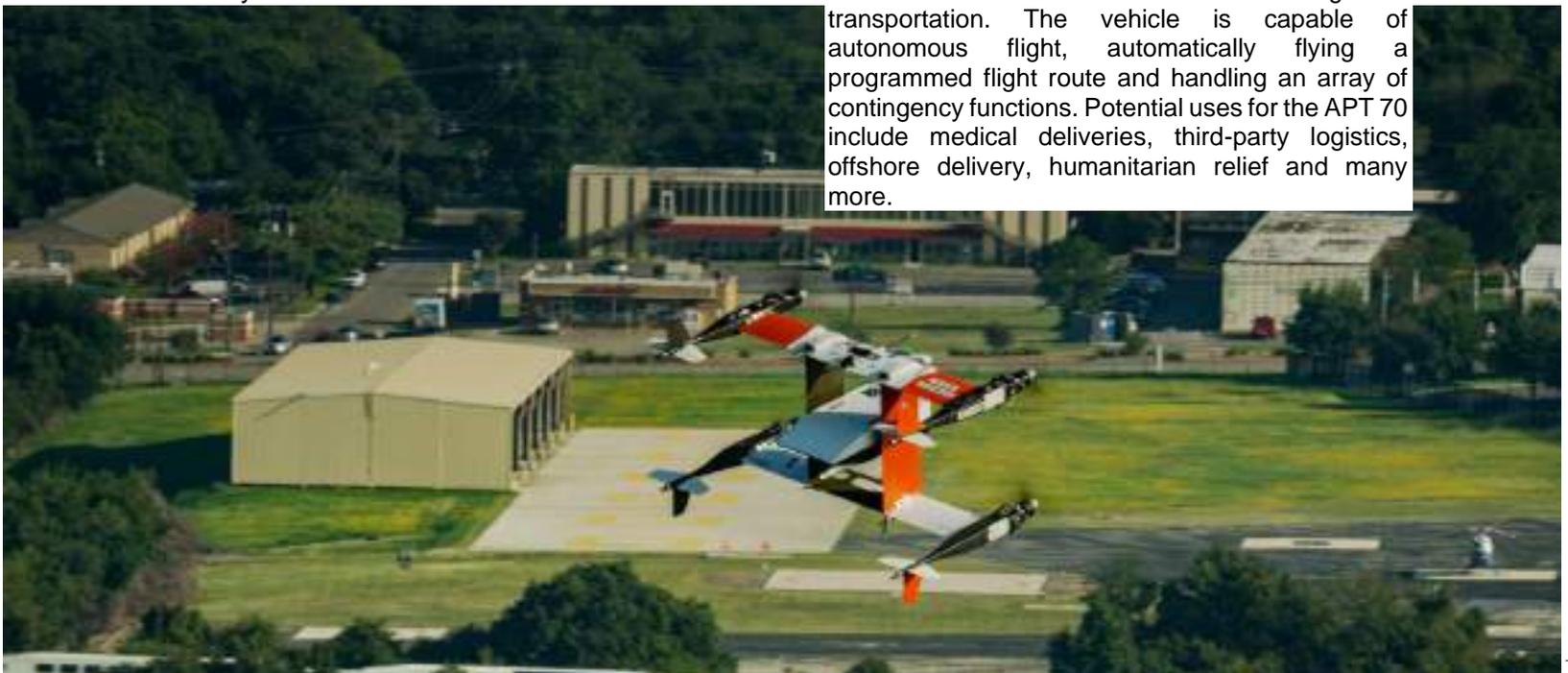
"This successful demonstration highlights the great potential for the APT 70 to complete complex missions for businesses and healthcare providers," said Michael Thacker, executive vice president, Innovation and Commercial Business. "With teammates like NASA, we can carve a path forward for future commercial operations to solve the cargo and goods transportation challenges our world currently faces."

Launching from Bell's Floyd Carlson field in Fort Worth, TX, the APT 70 flew a preprogrammed 10-mile circuit path along the Trinity River. Once armed from the ground control station, the APT 70 initiated a vertical takeoff. The vehicle then rotated to fly on its wings where it became nearly silent to the ground below. The vehicle executed its mission profile at an altitude of 500 feet above ground level. The route included a road crossing and transition in and out of Class B airspace. Communication between the ground station and the aircraft was maintained through a redundant datalink. A prototype airborne detect and avoid system, along with visual observers, provided the remote pilot with awareness of air traffic in the vicinity and recommended flight maneuvers.

"NASA is excited to partner with Bell to help accelerate routine UAS operations into the national airspace with this successful flight demo," said Mauricio Rivas, UAS integration in the NAS project manager at NASA's Armstrong Flight Research Center. "Our efforts with Bell and our other SIO industry partners will help commercial UAS move closer towards certification to make missions like this transport flight a common event."

Bell's technology partners for the demonstration include Xwing and the University of Massachusetts Amherst's Center for Collaborative Adaptive Sensing of the Atmosphere (CASA). Integrated onto the APT 70 is Xwing's airborne, multi-sensing detect and avoid system. Xwing's system comprises of radars, ADS-B, visual system and onboard processing to provide aircraft tracks and pilot alerts transmitted to the ground station. The APT 70 also includes CASA's intuitive, integrated display to provide pilots with local weather risk awareness and route-based weather alerts issued by their City Warn Hazard Notification System deployed in the DFW metroplex.

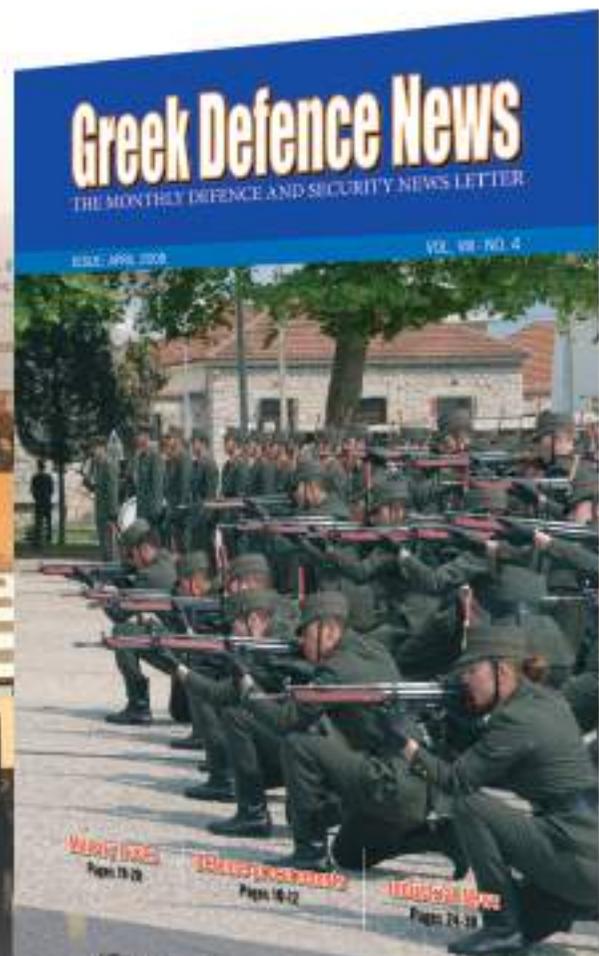
It is envisioned that in the future, an operational APT 70 could provide efficient, rapid and dependable transport for payloads up to 70lbs. The APT 70 is estimated to move three times as fast as ground transportation. The vehicle is capable of autonomous flight, automatically flying a programmed flight route and handling an array of contingency functions. Potential uses for the APT 70 include medical deliveries, third-party logistics, offshore delivery, humanitarian relief and many more.





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