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# Greek Defence News

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# Military trucks

Military trucks are designed to carry personnel, equipment and supplies to support operations. Operating in challenging and dangerous environments requires integrating advanced capabilities and technologies into vehicles.

Military trucks come in different sizes and with diverse capabilities. They range from adapted commercial trucks to purpose-built heavy tactical vehicles tailored for a wide range of applications.

Heavy trucks are expected to lead the military truck market during the forecast period. These heavy trucks are capable of operating off-road, in deep water, mud or snow. With a payload capacity of 1,000 kg, these trucks can tow weight of 3,000 kg. Also, manufacturers add protection from small arms fire, artillery shell splinters, grenades, small anti-personnel mines in these military trucks. Versions of heavy tactical 8x8, 10x10 axle configurations are manufactured by companies like Oshkosh Corporation, Mercedes-Benz, MAN, Krauss-Maffei Wegmann, and others. Heavy military trucks are used for selecting applications as they offer better torque at the wheel and peak power ratings. Some of the major applications are refrigeration, dumping, firefighting, disaster management, tankers, RMC, and containers.

The global military truck market is dominated by major players such as Arquus (France), Oshkosh Corporation (US), Rheinmetall AG (Germany), Mercedes-Benz Defence AG (Germany), IVECO S.p.A., (Italy), TATRA TRUCKS A.S., (Czech Republic), Mitsubishi Heavy Industries (Japan), and many others.

These companies demonstrate just what goes into making military trucks protected, effective and agile and have strong distribution networks at a global level. Besides, these companies offer a wide range of military trucks in the market. The key strategies adopted by these companies to sustain their market position are new product developments, collaborations, and contracts & agreements.

The ARMIS 6x6 is the worthy heir of the **Arquus** logistics and tactical carriers that serve daily within the armies, from the VLRA to the GBC180. Built on a specifically military base and incorporating time-tested civilian technologies, it offers very high-performance levels, both in terms of payload and off-road mobility. Developed with ARQUUS' expertise and the support of the Volvo Group, the ARMIS 6x6 benefits from the feedback of current generations of army carriers.

©Arquus VLRA

VLRAVLRA



# SCARABEE

The first hybrid light armoured vehicle.

MADE IN FRANCE



HYBRID DRIVE



MOBILITY



FIREPOWER

**SCARABEE** is the first protected hybrid vehicle in its category. A true technological powerhouse, this light armoured vehicle is designed for tackling every type of mission. Its hybrid drive combined with its exceptional mobility enables stealthy and silent movement. Thanks to its rear-wheel independent steering and its two levels of ground clearance, it shows a high level of agility in every situation. **SCARABEE** is ready for high-intensity operations.



ARQUUS



© Rheinmetall

With its upgraded and hardened chassis, the ARMIS 6x6 is at ease off-roading and crossing even the most difficult terrain. It is equipped with an 11L engine with 460 horsepower (euro 5) which allows it to clear 50% ramps.

Close to the Jaguar EBRC engine, this engine provides it with great agility and enables it to accompany the latest generation of combat vehicles on the battlefield. Its gearbox, equipped with the Ultra-Low Crawler option, enables it to stop safely on slopes. Brake assist also helps to save the main brakes on steep slopes.

VLRA is a family of light tactical vehicles sharing the same all-wheel drive chassis specifically designed for military requirements. Successor to VLRA 1, 12,000 of which have been sold worldwide, it retains the latter's ruggedness, no-electronics versions, range and low gooseneck chassis. The VLRA family comprises of a wide variety of 4x4 and 6x6 logistics and troop carriers. A Special Forces version, the Torpedo has also been sold. VLRA is already in service in numerous countries across the world and is employed in the most demanding theatres of operations.

**Rheinmetall** offers a range of trucks that suit all the needs of our customers and helps them to accomplish their missions, wherever and whatever they may be. The HX series sets a new yardstick in lifecycle costs and total cost of ownership. They are true tactical trucks with low maintenance costs due to their use of modified components from the commercial TGA range. At the same time, they have the necessary tactical advantages such as air transportability or easy application of adaptive armour. Although classified as a medium-mobility truck, the HX has exceeded all expectations and proved its capabilities in a variety of tests. Rheinmetall MAN Military Vehicles in cooperation with the Slovak company CSM Industry has unveiled a new high-mobility multipurpose excavator vehicle based on the HX 8x8. It carries an UDS 214 excavator build-on, a proven system made by the crane and excavator maker CSM based in Tisovec, Slovakia. The HX 8x8 Excavator is specially designed for combat engineer operations and disaster relief missions. RMMV has developed crew protection systems to meet the different requirements: The Modular Armoured Cabin (MAC) and the Integrated Armour Cabin (IAC) with higher

protection levels. The Automated Load Handling System - or ALHS - is a pioneering technical solution that enables the automated loading and unloading of containers, modules and flat racks onto military trucks both safely and efficiently from within the safe confines of a fully protected truck cabin in a combat environment.

Built to stand up to the rapidly evolving challenges in the operational environment, the **Oshkosh®** Heavy Expanded Mobility Tactical Truck (HEMTT) A4 brings significant improvements in power, maintenance and safety to the battlefield. Its 500 horsepower Caterpillar® C15 engine offers greater horsepower than its predecessor, so it can traverse the most challenging environments easier and more efficiently.

The HEMTT A4 performs while it protects with integrated under cab protection and Long-Term Armor Strategy (LTAS) B-kit attachments. Each and every variant – cargo, refueler, load handling system, recovery, light equipment transporter, guided missile transporter and MLRS resupply – offers the power, versatility and safety needed for mission success. The unmatched mobility and multiple capabilities of the Oshkosh® Logistics Vehicle System Replacement (LVSR) make it critical to mission success. With a 22.5-ton (20,412 kg) on-road/16.5-ton (14,969 kg) off-road payload and 600 horsepower diesel engine, it has the capacity and power to carry whatever the mission requires. It can haul flatracks, ISO containers, bridging equipment, boats and fuel containers. And it even loads and unloads flatracks from trailers towed by the LVSR. All adapters and lift hardware are stored on the vehicle, providing immediate operational availability.

The LVSR complements the Medium Tactical Vehicle Replacement (MTVR) fleet, creating a logistical tandem that ensures the continued maneuverability of forces. It incorporates the TAK-4® independent suspension system and has parts commonality and similar maintenance to streamline service and support, reduce downtime and increase efficiencies.

© **Oshkosh® Heavy Expanded Mobility Tactical Truck (HEMTT) A4**

**Iveco** Trakker range is much sought after for civil on-road and heavy duty applications and has proved particularly suitable for adaptation to military missions, offering a full range of panel vans and light trucks through to transporters capable of moving loads in excess of 75. Available as 4x2, 4x4, 6x4, 6x6, 8x4 and 8x8, these vehicles fulfil logistic roles for a wide range of defence forces from the rear echelon up to the forward areas.

One of the characteristics of current operations is that there is no frontline, with logistic troops as likely to be attacked as combat arms. In recognition of this, Iveco Defence Vehicles has worked to develop a class leading protected cab which can be fitted to the 4x4, 6x6 and 8x8 Trakker chassis to provide permanent ballistic and anti-mine protection. The result is a robust, highly mobile but cost-effective logistic vehicle which can operate even in high threat areas.

Build to comply with any operational scenario: **Mercedes-Benz Defence Trucks** offers a tailor-made professional solution for any operational need – from the Unimog to the Zetros and Arocs families. Any operational need can be covered – in heavy off-road or high-speed conditions and routes. Mercedes-Benz Defence Trucks demonstrate their reliability, durability and ruggedness every day around the world, under the most adverse climatic and operational conditions. Rely on our unique worldwide service network. For maximum availability.



## Greece launches its program for three defence and intervention frigates (FDI HN) with Naval Group

On March 24, 2022, Greece and Naval Group signed the contracts for three defence and intervention frigates, plus one optional, and their in-service support. Two FDI HN (Hellenic Navy) will be delivered in 2025 and the third one in 2026.

### A new step in the strategic partnership with Greece

In accordance with the defence agreement signed last October between Greece and France, the Hellenic authorities have signed two contracts with Naval Group for the supply of three Defence and

Intervention Frigates (FDI HN), plus one optional, as well as their in-service support.

The contracts include the supply as well of MU90 torpedoes and CANTO countermeasures. The contracts were signed today in Athens by Vice-Admiral (rtd) Aristeidis Alexopoulos, General Director of the General Directorate for Defence Investments and Armaments, and Pierre Éric Pommellet, Chairman and Chief Executive Officer of Naval Group, in the presence of the Greek Minister of Defence, Nikolaos Panagiotopoulos and the French Minister of the Armed Forces, Florence Parly.

Pierre Éric Pommellet, Chairman and Chief Executive Officer of Naval Group said: "Naval Group is proud, along with its French industrial partners Dassault, MBDA and Thales, to be a part of this new chapter in the strategic alliance between Greece and France. Greece has chosen the latest generation of frigates that bring together the best of French naval know-how and will strengthen the capabilities of the Hellenic Navy. The frigates program is the first of many steps in the partnership between Naval Group and the Hellenic Navy and will contribute to the development of the partnership between our countries, our navies and our industries for decades to come."

The FDI HN will quickly and sustainably enhance the capabilities of the Hellenic Navy's surface fleet



© Naval Group

as they will be delivered in a very short timeframe, starting in 2025 for the first two units and in 2026 for the third one.

## A major program for the Hellenic industry

Thanks to a very ambitious cooperation plan with the Hellenic industry (HIP, Hellenic Industry Participation Plan), this program offers numerous industrial opportunities in Greece, creating jobs and skills in the country. Naval Group's teams have been working in Greece for several months to establish partnerships with local industrial players with the objective of signing the first contracts in the coming months. With its R&D component, the cooperation plan is a sustainable plan that is fully in line with the objective of strengthening the European defence industrial and technological base through Franco-Greek cooperation.

## A powerful, innovative and cyber-secure frigate

The FDI HN features high level capabilities in all warfare domains: anti-ship, anti-air, antisubmarine and special forces projection. Its air and surface defences are ensured by the most modern sensors, including the Thales Sea Fire, the first all-digital multifunction radar with an active antenna and fixed panels.

The FDI HN is equipped with a unique integrated mast that brings together all the airborne sensors, enabling permanent 360° surveillance. As the first frigate on the market to be natively protected against the cyber threat, the FDI HN is equipped with two data centers hosting almost all of the ship's applications.



## Technical specifications of the FDI HN

- Displacement: 4,500 tons
- Length: approx. 122 metres
- Width: 18 metres
- Maximum speed: 27 knots
- Aviation facilities: 10-ton class helicopter, VTOL unmanned aerial vehicle (UAV)

## The main armaments of the FDI HN are:

- 32 Aster missiles developed by MBDA
- 8 Exocet MM40 B3C missiles developed by MBDA
- RAM missiles
- MU 90 torpedoes developed by Naval Group
- 76 mm gun
- 4 torpedo tubes
- CANTO counter measures developed by Naval Group

## KEY MILESTONES OF THE 1<sup>ST</sup> FDI HN FRIGATE FOR THE HELLENIC NAVY



First steel cutting  
Sept 2021

First block  
in the drydock  
Q4 2022

Final blocks junction  
Q4 2023

First Sea Going  
Q3 2024

Delivery  
Q1 2025

## MINISTRY OF DEFENCE

### ➔ Defence Minister Nikolaos Met With US Under Secretary of State for Political Affairs



© MOD

On 5 April 2022, the Minister of National Defence Mr. Nikolaos Panagiotopoulos, in the presence of the Deputy Minister of National Defence Mr. Nikolaos Chardalias, the Chief of Hellenic National Defence General Staff, General Konstantinos Floros, and the US Ambassador to Greece, Mr. Geoffrey Pyatt, met with the US Under Secretary of State for Political Affairs, Ambassador Victoria Nuland. The situation in Ukraine since the start of Russia's war and developments in the Eastern Mediterranean were discussed,

Both sides also emphasized that the recently renewed US-Greece Mutual Defense Cooperation Agreement (MDCA) contributes to the expansion and deepening of the strategic defense partnership between the two countries.

Furthermore, Greek Defence Minister stressed the broad cooperation between the two countries in the defence armaments sector, as well as the prospects for further enhancement through the development of mutually beneficial armaments programs. Moreover, the two sides discussed the developments in Ukraine and the importance of the provision of every possible support to the country for better protecting its territorial integrity, sovereignty, and independence.

Concerning the security situation in the East Mediterranean, the Minister of National Defence underlined that Greece promotes bilateral and trilateral cooperation with countries in the broader region aiming to enhance stability and security

in the region based on principle of good neighborly relations.

### ➔ Greece not sending any more military equipment to Ukraine

On 13 April 2022, Defense Minister Nikos Panagiotopoulos told Greek lawmakers that Greece no longer plans to send military equipment to Ukraine. Greek government spokesman Ioannis Oikonomou has also previously confirmed that Greece is not going to send any more military equipment to Ukraine. Greece had sent humanitarian aid and military equipment to Poland for Ukraine on C-130 military transport planes.

- 400 Kalashnikov assault rifles
- Launchers
- Ammunitions

Defence Ministry said that the defense equipment Athens has previously sent to Ukraine does not weaken Greece's own defense capabilities.

### ➔ GDDIA Director General met with UK Minister for Defence Procurement

On 18 March 2022, a meeting was held at GDDIA premises between the General Director, Vice Admiral (rtd) Aristeidis Alexopoulos HN and the Minister for Defence Procurement of Great Britain Mr. Jeremy Quin, who was accompanied by the British Ambassador HE Matthew Lodge. At the meeting issues of common interest were discussed.

## HELLENIC ARMED FORCES ARMAMENT PROGRAMS

### HELLENIC ARMY

#### ➔ Hellenic Army's future procurement programs

On 18 March 2022, Defence minister update Hellenic Parliament on the following Hellenic Army's future procurement programs:

- Procurement of 1000 FN MINIMI® 5.56 Light Machine Guns Mk1 and Mk2 with estimated cost 10.917.950€ which will be



## Enhancing Mission Effectiveness

INTRACOM DEFENSE (IDE) is a highly acclaimed Defense Systems Company in Greece, with an outstanding record of participation in domestic programs and exports to quality-driven international customers.

IDE utilizes high-end technologies in the design and development of advanced products in the areas of Missile Electronics, Tactical IP Communications, Integrated C4I Systems, Surveillance, Hybrid Electric Power Systems, and Unmanned Systems. The Company retains its international recognition through the long standing participation in European and NATO new technology development programs. Utilizing advanced production capabilities and large-scale project management know-how, IDE is a key player in the high technology sector of the Hellenic Defense Industry.



[www.intracomdefense.com](http://www.intracomdefense.com)

manufactured by the Hellenic Defence Systems. FN MINIMI® 5.56 Light Machine Guns Mk1 and Mk2 have been adopted by 70 countries worldwide as a standard issue for regular and special forces. The FN MINIMI® 5.56 Mk3 Light Machine Gun has recently been designed and developed for improved ergonomics and handling.

- Upgrading 500 M2 .50 Caliber Machine Guns M2 Browning to the new M2A1 configuration with estimated cost 2.132.500€. The upgraded weapon system offers increased performance as well as new features and design improvements. They include fixed headspace and timing, a quick-change barrel with removable carrying handle, a new flash hider that reduces the weapon's nighttime signature by 95 percent, and a trigger block safety.
- Support of the Hellenic Army light weapons with estimated cost 514.510€.
- Study for the upgrade of HK G3A3/A4 which is a 7.62x51mm NATO, select-fire battle rifle developed in the 1950s by the German armament manufacturer Heckler & Koch (H&K) is currently under evaluation. G3 Service rifle Made under license by Hellenic Defence Systems (EAS), formerly under EBO. Sizable number of rifles equipping frontline units got upgraded with SPUHR adjustable stock, aluminum handguard with foregrip and Picatinny rails accommodating Aimpoint CompM4 Red Dot optics. A smaller number of rifles were converted to the 'Sharpshooter' version utilizing FAB Defence, MAGPUL and VORTEX OPTICS aftermarket parts.

## HELLENIC NAVY

### **Hellenic Navy to acquire 44 Atlas Elektronik DM2A4 SeaHake Heavyweight Torpedos**

On 31 March 2022, the General Directorate for Defence Investments and Armaments (GDDIA) awarded the German company ATLAS ELEKTRONIK GmbH with a contract for the Procurement and Support of the Hellenic Navy Submarine's Torpedoes. The contract includes the acquisition of 44 modern DM2A4 SeaHake Heavyweight Torpedo mod 4" plus extra batteries for older SST torpedoes / SUT Mod0 torpedoes, Estimated budget is in the area of 110 million euro.



© Atlas-Elektronik

The SeaHake mod4 is the dual-purpose and fibre-optic wire-guided heavy-weight torpedo that fully meets the operational requirements of modern Navies. It is specifically designed to meet the confined shallow and blue water environments of today's and future naval scenarios.

In our more than 130-year torpedo tradition SeaHake mod4 is the latest member of the highly successful SeaHake family of torpedoes that started its evolution more than 45 years ago.

The propulsion of SeaHake mod4 features the unique modular battery system and an electric motor with very low self-noise. It provides high speed and long range combined with exceptional stealth characteristics. The digital sonar system features the unrivalled conformal array and is able to master complex scenarios. It manages multiple targets while identifying and suppressing any kind of jammers and decoys.

The fully digitized signal processing hardware leads to a broad frequency range and optimal beam former algorithms. Long acquisition range and high resolution of the torpedo sonar are achieved. Multiple targets can be separated, and targets can be classified. Moreover, the wide angular coverage of the sonar provides the full operational picture instantaneously.

The electric propulsion system, together with skew glass-fibre reinforced plastic (GRP) propellers ensures silent operation across the whole operating envelope. This minimizes the probability of counter-detection and provides optimum sensor performance.

All performance data confirmed in numerous in-water-tests, thus the SeaHake mod4 meets or exceeds all customer requirements. The SeaHake mod4 is the superior Heavyweight Torpedo with undisputed performance and tested in all operational scenarios.

2022

# EUROSATORY

13-17 JUNE 2022 / PARIS

## THE DEFENCE & SECURITY GLOBAL EVENT



2018 key figures



© Dassault Aviation

## HELLENIC AIR FORCE

### ➔ Greece acquires six additional new Rafale

On 24 March 2022, Eric Trappier, Chairman and CEO of Dassault Aviation, and Vice-Admiral Aristidis Alexopoulos, Director General of Armaments and Investments of the Greek Ministry of Defence, signed in Athens, in the presence of Mrs. Florence Parly, French Minister of the Armed Forces, and Mr. Nikolaos Panagiotopoulos, Greek Minister of National Defence, a contract for the acquisition of six additional new Rafale aircraft.

This new contract, which follows Greece's acquisition of 18 Rafale in January 2021, will increase to 24 the number of Rafale operated by the Hellenic Air Force.

Following the arrival at Tanagra Air Base of the first six Rafale of the Hellenic Air Force on 19 January 2022, the 18 Rafale relating to the first contract will

be fully deployed in Greece by the summer 2023. The six additional Rafale will then be delivered to the Hellenic Air Force shortly, thereafter, starting from the summer 2024.

As a European country and NATO member, Greece is a major strategic ally of France. Dassault Aviation is honored by the Greek government's decision to proceed with this new Rafale order, which extends nearly fifty years of uninterrupted partnership.

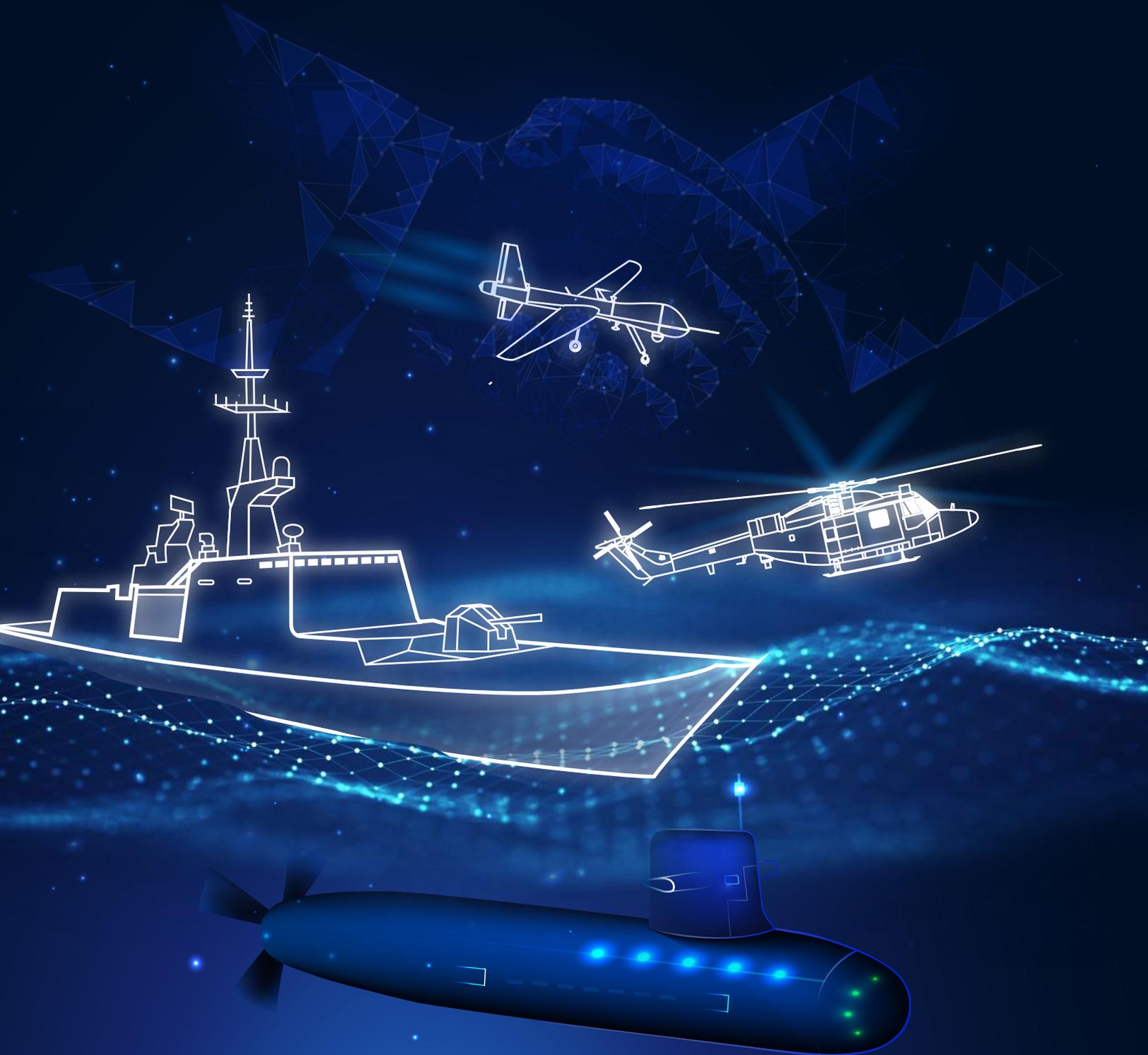
This additional order reflects the Greek government's great satisfaction with the Rafale's operational qualities, as well as its determination to strengthen the combat capabilities of the Hellenic Air Force in order to guarantee the country's sovereignty and ensure the security of its population in an increasingly unstable geopolitical context.

"This new contract demonstrates the Greek government's confidence in the Rafale, which is already actively contributing to guaranteeing Greece's sovereignty and operational independence. Once again, I am honored by the Hellenic Air Force's renewed trust in Dassault Aviation, reflecting nearly half a century of unwavering partnership. I would also like to assure



# EURONAVAL

THE WORLD NAVAL DEFENCE EXHIBITION



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the Greek authorities of our full commitment to fully meet their expectations,” said Eric Trappier after the signing ceremony. Estimated budget is in the area of 1.092.300.000 €

## HELLENIC DEFENCE INDUSTRY

### ➔ The Hellenic PATRIOT Upgrade Program starts at INTRACOM DEFENSE



© IDE

The kick-off meeting for the Hellenic PATRIOT upgrade program, hosted by INTRACOM DEFENSE – IDE on February 9th, 2022, was successfully concluded with the participation of the Hellenic Air Force, the NSPA (NATO Support and Procurement Agency) and IDE executives. All parties expressed their satisfaction for the outcome of the meeting, which aimed to set the foundations for the successful implementation of the program. This program includes the installation, integration of hardware modifications and operational tests with the latest software for the engagement control, coordination and communication shelters (ECS, ICC, CRG) in all Hellenic PATRIOT battalions. It comes in continuation of the broad industrial participation of IDE in the Hellenic PATRIOT program.

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

### ➔ AVIBRAS

On 13 April 2022, a meeting was conducted between the HAGS officers and representatives of the Brazilian company AVIBRAS. The aim the

meeting was the presentation of the company's ASTROS system.



© AVIBRAS

ASTROS is a flexible ground-to-ground Artillery Rocket System in operation, combat proven in several nations. It is the only System capable of launching rockets, guided rockets, ballistic missiles and tactical cruise missiles, of different calibres, from the same compact and single platform, at distances between 9 km and 300 km.

ASTROS System stands out for its great mobility, agility and versatility, and can be used for Field Artillery and Coastal Defence.

### ➔ KMW

On 13 April 2022, a meeting was conducted between the HAGS officers and representatives of the German company KMW. The aim the meeting was the presentation of the company's proposal regarding the upgrade of the Leopard MBT operated by the Hellenic Army. .

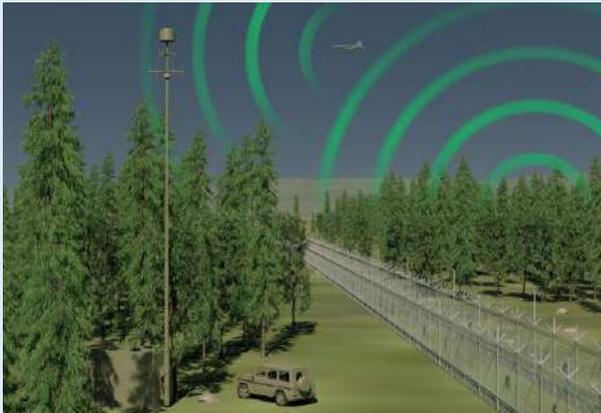
### ➔ ELBIT

On 12 April 2022, a meeting was conducted between the HAGS officers and representatives of the Israeli company ELBIT SYSTEMS. The aim the meeting was the presentation of the company's system Silver Bullet II.

### ➔ COLLINS AEROSPACE

On 12 April 2022, a meeting was conducted between the HAIFGS officers and representatives of the US company Collins Aerospace. The aim the meeting was the presentation of the company's capabilities for the support, maintenance, and upgrade of of the Hellenic Air Force's C-130 transport aircraft.

## ➔ HENSOLDT Sensors AG



© HENSOLDT Sensors AG

On 12 April 2022, a meeting was conducted between the HAIFGS officers and representatives of the German company HENSOLDT Sensors AG. The aim of the meeting was the presentation of the company's Twinvis Passive Radar configurations. With our new Twinvis passive radar, HENSOLDT has revolutionised classical radar technology. This system does not emit any signals itself, which means that it remains virtually invisible. Nevertheless, it can even locate aircraft equipped with stealth technology.

In the military field, Twinvis even combines several advantages. In addition to its high mobility, the system itself remains 'invisible', i.e. cannot be jammed or eliminated in a targeted action. At the same time, it can also be used to discover stealth aircraft which, due to their low observable technology, have until now remained undetectable for conventional radar systems.

Stealth technology prevents an aircraft using it from reflecting any radar signals. Instead, these signals are absorbed by the surface of the aircraft. The technology developed by the USA, and first used in the Lockheed F-117A in the 1980s, is currently being used and further developed by military aircraft manufacturers all over the world.

Twinvis makes this technology vulnerable by reliably detecting the echoes in the frequency range of broadcast and TV signals. Stealth aircraft thus become visible.

## ➔ MBDA

On 16 March 2022, a meeting was conducted between the HAGS officers and representatives of the French company MBDA. The aim of the meeting was the presentation of the company's

MBDA is joining with 13 partners and subcontractors from 5 countries to develop a new capability based on the MMP missile system that will be unique for mounted and dismounted forces.



© MBDA

LynkEUs, an MBDA coordinated project, has been selected by the European Commission as part of the new European Defence Industrial Development Programme (EDIDP), following consultation with Member States.

LynkEUs is the first technological and industrial contribution to the objectives of the Permanent Structured Cooperation (PESCO) Beyond Line Of Sight (BLOS) capability project. The BLOS capability project had been approved in November 2018 by the EU Defence Ministers.

The LynkEUs project is managed in close partnership with the French, Belgian and Cypriot armed forces. The project seeks to define an initial operational concept for a European BLOS capability. It will also provide an opportunity to identify and test emerging solutions of potential value for future upgrades to the capability and will be validated by a test campaign.

The concepts and tests completed for the PESCO BLOS project will contribute to the development of a family of man-on-the loop BLOS missile systems with back image, based on the MMP medium range missile, and under full control of Europe's defence industry.

Eric Béranger, MBDA CEO, said: "LynkEUs is the first cooperative project in the missile systems field leveraging on the new EU defence instruments, and the first EU defence R&D project to be coordinated by MBDA. It demonstrates our eagerness to cooperate to an ever-greater extent in Europe and to expand our circle of industrial and technological partnerships, particularly with innovative SMEs and European research centres. It also demonstrates our commitment to serve European strategic autonomy and technological sovereignty ambitions."

MBDA and its 10 partners – from Belgium: The Royal Military Academy, John Cockerill Defense,

FN Herstal, Thales Belgium, and Xenics; from Cyprus: Aditess, Cyprus Institute, and SignalGenerix; from France: Novadem and Safran; along with the 3 subcontractors: MILREM (from Estonia), DELAIR (from France), and Carmenta (from Sweden) – are now entering the negotiation phase of the grant agreement with the Commission.

This first success at the European level paves the way for further collaborative projects, that will consolidate a European BLOS capability by developing associated functions such as training systems and cooperative engagement. These new projects could be eligible for the future European Defence Fund as early as 2021.

## ➔ L3 HARRIS



© L3 HARRIS

On 21 Ap March 2022, a meeting was conducted between the HAIFGS officers and representatives of the US company L3 HARRIS. The aim the meeting was the presentation of the company's WESCAM MX-10 EO/IR low-weight imaging system – ideal for low-altitude tactical surveillance and reconnaissance missions from manned and unmanned airborne platforms.

Adaptable and versatile, the L3Harris WESCAM MX-10 is a smaller, capable, and affordable commercial sensor system that incorporates field-proven technology from the larger WESCAM MX-15 and WESCAM MX-20 products. With fully active, 4-axis stabilization, the multi-spectral sensors within WESCAM MX-Series systems provide imaging over multiple wavebands, ensuring both day and night imaging capability over a wide range of weather conditions.

## ➔ RAYTHEON

On 21 Ap March 2022, a meeting was conducted between the HAIFGS officers and representatives of the US company RAYTHEON. The aim the meeting was the presentation of the company's AGM-176 Griffin is a lightweight, precision-guided munition. It can be launched from the ground or air as a rocket-powered missile or dropped from the air as a guided bomb. It carries a relatively small warhead and was designed to be a precision low-collateral damage weapon for irregular warfare. It has been used in combat by the United States military during the War in Afghanistan.

## ➔ LEONARDO



© LEONARDO

On 12 March 2022, a meeting was conducted between the HAGS officers and representatives of the Italian company LEONARDO. The aim the meeting was the presentation of the company's VULCANO 155mm ammunition as well as a developed and tested upgrade package aimed at the Hellenic Army's 155mm M109 self-propelled howitzers.

Vulcano 155mm is a family of subcalibre ammunition for 155mm Land artillery systems composed by an unguided projectile called BER (Ballistic Extended Range) and a guided one called GLR (Guided Long Range). They represent the most advanced technology currently available for precise land artillery firings. The Vulcano projectile is specifically conceived and realized to improve the performance of other ammunition of the same calibre, both in range and accuracy, while maintaining compatibility with the in-service propelling charges and 155mm barrels.

The outline of the ammunition is almost identical to that of conventional rounds, which enables it to be handled without any additional logistical burden. The main application of the Vulcano 155 GLR is for long range, high accuracy fire support against stationary and moving point targets with extremely reduced likelihood of collateral damage. The outstanding aerodynamics, coupled with the GPS

guidance and trajectory shaping capabilities, enable the Vulcano 155 GLR to reach a max range of 70km while keeping an extreme accuracy of less than 5m within all operational ranges. The shell is filled with IM explosive, and it is made up of specific patented pre formed tungsten rings, enabling an extremely high effectiveness against soft and lightly protected targets; the detonation trigger is generated by a Radio Frequency programmable fuse capable of various functionalities, such as: altimetric, instantaneous and delayed impact.

When the RF fuse is replaced with the dedicated Semi Active Laser (SAL) sensor, the ammunition can also effectively engage laser designated targets (forward observer required), stationary and moving, with further improved precision with respect to pure GPS guidance. Moreover, the possibility of programming the final attack angle of the projectile to up to 90° (that is, vertical fall) against the target enables the maximization of both warhead effectiveness and guidance accuracy, as well as minimizing the likelihood of detection of projectile in flight by the enemy's defence systems. The Vulcano 155 ammunition, both BER and GLR, have been qualified according to the relevant STANAGs under joint Italian and German MoD supervision.

## HOMELAND SECURITY

### ➔ **Modernization and upgrade of the Hellenic VTMIS system**

The Hellenic Coast Guard has announced an international tender regarding the modernization and upgrade of the Hellenic VTMIS system. Estimated budget is around 49.000.000,00€. Interested companies to submit complete technical and financial offers by 27 May 2022. The tender will be contacted on the 2nd of June 2022.

## NATO

### ➔ **Statement by NATO Heads of State and Government on Russia's attack on Ukraine**

We have met today to discuss the gravest threat to Euro-Atlantic security in decades. We condemn in the strongest possible terms Russia's full-scale invasion of Ukraine, enabled by Belarus. We call on Russia to immediately cease its military assault, to withdraw all its forces from Ukraine and to turn back from the path of aggression it has chosen. This

long-planned attack on Ukraine, an independent, peaceful and democratic country, is brutal and wholly unprovoked and unjustified. We deplore the tragic loss of life, enormous human suffering and destruction caused by Russia's actions. Peace on the European continent has been fundamentally shattered. The world will hold Russia, as well as Belarus, accountable for their actions. We call on all states to condemn this unconscionable attack unreservedly. No one should be fooled by the Russian government's barrage of lies. Russia bears full responsibility for this conflict. It has rejected the path of diplomacy and dialogue repeatedly offered to it by NATO and Allies. It has fundamentally violated international law, including the UN Charter. Russia's actions are also a flagrant rejection of the principles enshrined in the NATO-Russia Founding Act: it is Russia that has walked away from its commitments under the Act. President Putin's decision to attack Ukraine is a terrible strategic mistake, for which Russia will pay a severe price, both economically and politically, for years to come. Massive and unprecedented sanctions have already been imposed on Russia. NATO will continue to coordinate closely with relevant stakeholders and other international organisations including the EU. At the invitation of the Secretary General, we were joined today by Finland, Sweden and the European Union.

We stand in full solidarity with the democratically elected president, parliament and government of Ukraine and with the brave people of Ukraine who are now defending their homeland. Our thoughts are with all those killed, injured and displaced by Russia's aggression, and with their families. NATO remains committed to all the foundational principles underpinning European security, including that each nation has the right to choose its own security arrangements. We will continue to provide political and practical support to Ukraine as it continues to defend itself and call on others to do the same. We reaffirm our unwavering support for the independence, sovereignty and territorial integrity of Ukraine within its internationally recognised borders, including its territorial waters. This principled position will never change.

In light of Russia's actions, we will draw all the necessary consequences for NATO's deterrence and defence posture. Allies have held consultations under Article 4 of the Washington Treaty. We will continue to take all measures and decisions required to ensure the security and defence of all Allies. We have deployed defensive land and air forces in the eastern part of the Alliance, and maritime assets across the NATO area. We have activated NATO's defence plans to prepare ourselves to respond to a range of contingencies and secure Alliance territory, including by drawing

on our response forces. We are now making significant additional defensive deployments of forces to the eastern part of the Alliance. We will make all deployments necessary to ensure strong and credible deterrence and defence across the Alliance, now and in the future. Our measures are and remain preventive, proportionate and non-escalatory. Our commitment to Article 5 of the Washington Treaty is iron-clad. We stand united to protect and defend all Allies. Freedom will always win over oppression.

## ESDP

### ➔ A Strategic Compass for a stronger EU security and defence in the next decade

On 21 March 2022, the Council has formally approved the Strategic Compass, at a time when we witness the return of war in Europe. The Compass gives the European Union an ambitious plan of action for strengthening the EU's security and defence policy by 2030.

The more hostile security environment requires us to make a quantum leap forward and increase our capacity and willingness to act, strengthen our resilience, and invest more and better in our defence capabilities.

The strength of our Union lies in unity, solidarity and determination. The objective of the Strategic Compass is to make the EU a stronger and more capable security provider. The EU needs to be able to protect its citizens and to contribute to international peace and security. This is all the more important at a time when war has returned to Europe, following the unjustified and unprovoked Russian aggression against Ukraine, as well as of major geopolitical shifts. This Strategic Compass will enhance the EU's strategic autonomy and its ability to work with partners to safeguard its values and interests.

A stronger and more capable EU in security and defence will contribute positively to global and transatlantic security and is complementary to NATO, which remains the foundation of collective defence for its members. It will also intensify support for the global rules-based order, with the United Nations at its core.

The Strategic Compass provides a shared assessment of the strategic environment in which the EU is operating and of the threats and challenges the Union faces. The document makes concrete and actionable proposals, with a very

precise timetable for implementation, in order to improve the EU's ability to act decisively in crises and to defend its security and its citizens.

The Compass covers all the aspects of the security and defence policy and is structured around four pillars: act, invest, partner and secure.

**Act:** In order to be able to act rapidly and robustly whenever a crisis erupts, with partners if possible and alone, when necessary, the EU will:

- establish a strong EU Rapid Deployment Capacity of up to 5000 troops for different types of crises
- be ready to deploy 200 fully equipped CSDP mission experts within 30 days, including in complex environments
- conduct regular live exercises on land and at sea
- enhance military mobility
- reinforce the EU's civilian and military CSDP (Common Defence and Security Policy) missions and operations by promoting a rapid and more flexible decision-making process, acting in a more robust way and ensuring greater financial solidarity
- make full use of the European Peace Facility to support partners

**Secure:** To strengthen its ability to anticipate, deter and respond to current and fast-emerging threats and challenges, and safeguard the EU's security interest, the EU will:

- boost its intelligence analysis capacities
- develop Hybrid Toolbox and Response Teams bringing together different instruments to detect and respond to a broad range of hybrid threats
- further develop the Cyber Diplomatic Toolbox and set up an EU Cyber Defence Policy to be better prepared for and respond to cyberattacks
- develop a Foreign Information Manipulation and Interference Toolbox
- develop an EU Space Strategy for Security and Defence
- strengthen the EU's role as a maritime security actor

**Invest:** Member states have committed to substantially enhance their defence expenditures to match our collective ambition to reduce critical military and civilian capability gaps and strengthen our European Defence Technological and Industrial Base. The EU will:

- exchange on national objectives on increased and improved defence spending to match our security needs
- provide further incentives for member states to engage in collaborative capability development and jointly invest in strategic enablers and next generation capabilities to operate on land, at sea, in the air, in the cyber domain and in outer space
- boost defence technological innovation to fill strategic gaps and reduce technological and industrial dependencies

**Partner:** To address common threats and challenges, the EU will:

- strengthen cooperation with strategic partners such as NATO, the UN and regional partners, including the OSCE, AU and ASEAN
- develop more tailored bilateral partnerships with like-minded countries and strategic partners, such as the US, Canada, Norway, the UK, Japan and others
- develop tailored partnerships in the Western Balkans, our eastern and southern neighbourhood, Africa, Asia and Latin America, including through enhancing dialogue and cooperation, promoting participation in CSDP missions and operations and supporting capacity- building

## CYPRUS

### ➔ Cyprus – France Air Defence Exercise TALOS 2021

The Air Defence exercise "TALOS 2022" was successfully completed with the participation of forces from the National Guard and the French Armed Forces.

The exercise was performed on the occasion of the presence of the aircraft carrier «Charles de Gaulle» in the wider region of the Eastern Mediterranean. Activities are part of the implementation of the Bilateral Defense Cooperation Program, between Cyprus and France, and take place within the Nicosia FIR and covered a big area of the Republic of Cyprus territory.



© MOD Cyprus

The scenario of the exercise concerned the entry of a formation of fighter aircrafts at low altitude, with the aim of attacking military installations of the National Guard. The main purpose of the exercise was to evaluate the response of the air defence system of the Republic of Cyprus and to train the personnel of the National Guard in realistic conditions. Through this joint activity, the personnel of the National Guard and the French Forces are co-trained, while the exchange of knowledge and experience in the fields of aviation and air-defence is considered particularly important.

The Air Defence exercise "TALOS", sends a very positive signal about the willingness of both countries for cooperation, in order to strengthen even more the bilateral ties in the domain of security and defence. Cyprus and France enjoy extensive ties and mutual interest in cooperating to promote peace and stability in the region.

## BULGARIA

### ➔ BULGARIA – F-16 C/D BLOCK 70 AIRCRAFT

On 4 April 2022 the State Department has made a determination approving a possible Foreign Military Sale to the Government of Bulgaria of F-16 C/D Block 70 Aircraft and related equipment for an estimated cost of \$1.673 billion. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale.

The Government of Bulgaria has requested to buy four (4) F-16 C Block 70 aircraft; four (4) F-16 D Block 70 aircraft; eleven (11) F100-GE-129D engines (8 installed, 3 spares); eleven (11)



© Lockheed Martin

Improved Programmable Display Generators (iPDG) (8 installed, 3 spares); eleven (11) AN/APG-83 Active Electronically Scanned Array (AESA) Scalable Agile Beam Radars (SABR) (8 installed, 3 spares); eleven (11) Modular Mission Computers (MMC) 7000AH (8 installed, 3 spares); eleven (11) LN-260 or equivalent Embedded Global Positioning System (GPS) Inertial Navigation Systems (INS) (EGI) with Selective Availability Anti-Spoofing Module (SAASM) and Precise Positioning Service (PPS) (8 installed, 3 spares); nineteen (19) Advanced Medium Range Air-to-Air Missile (AMRAAM) AIM-120C-7/C-8 or equivalent missiles; two (2) AMRAAM Guidance Sections; forty-eight (48) LAU-129A launchers (40 installed, 8 spares); twenty-eight (28) GBU-39/B Small Diameter Bombs (SDBs); two (2) SDB Guided Test Vehicles (GTVs); eleven (11) M61A1 Vulcan Cannons (8 installed, 3 spares); four (4) AN/AAQ-33 Sniper Advanced Targeting Pods (ATPs); twelve (12) Multifunctional Information Distribution System with Joint Tactical Radio Systems (MIDS-JTRS) (aircraft terminals and ground station terminals) (10 installed, 2 spares); twenty (20) AIM-9X Block II missiles; eight (8) AIM-9X Block II Captive Air Training Missiles (CATMs); four (4) AIM-9X Block II Tactical Guidance Units; four (4) AIM-9X Block II CATM Guidance Units; twenty-four (24) FMU-139 or FMU-152 fuze systems; twelve (12) KMU-572 Joint Direct Attack Munition (JDAM) Tail Kits for 500LB GBU-38 or Laser JDAM GBU-54; twelve (12) MXU-650 Air Foil Groups (AFGs) for Enhanced Paveway II EGBU-49; twelve (12) MAU-210 Enhanced Computer Control Groups (ECCGs) for EPII EGBU-49; twenty-four (24) MK-82 or BLU-111 or equivalent Bomb Bodies; six (6) MK-82 Inert Bombs; and two (2) GBU-39 SDB I Practice Bombs. Also included are AN/ARC-238 radios; AN/APX-126 or equivalent Advanced Identification Friend or Foe (AIFF) with Combined Interrogator Transponders (CIT); Joint Helmet Mounted Cueing System II (JHMCS II) or Scorpion Hybrid Optical-based Inertial Tacker (HObIT) helmet mounted displays; AN/ALQ-254 Viper Shield or equivalent Electronic Warfare (EW) systems; AN/ALE-47 Countermeasure Dispenser Systems (CMDs), KY-

58M Cryptographic Devices, KIV-78 Cryptographic Devices, and Simple Key Loaders (SKLs); Joint Mission Planning Systems (JMPS) or equivalent; AIM-120 Captive Air Training Missiles (CATM); PGU-28 High Explosive Incendiary (HEI) ammunition; PGU-27 training rounds (non HEI); ARD-446 impulse cartridges; ARD-863 impulse cartridges; BBU-36/B impulse cartridges; BBU-35/B impulse cartridges; MK-124 smoke flares; MJU-7/B flare cartridges L463 or MJU-53 or equivalent; Common Munitions Built-in-Test (BIT) Reprogramming Equipment (CMBRE); ADU 890 adapter for CMBRE; ADU-891 adapter for CMBRE; Night Vision Devices (NVD); NVD Spare Image Intensifier Tubes; Remote Operated Video Enhanced Receiver (ROVER) 6i units; Tactical Network ROVER Kit; DSU-38 laser sensors for GBU-54; Cartridge Actuated Device/Propellant Actuated Devices (CADs/PADs); GBU-39 tactical training rounds; BRU-57 bomb racks; BRU-61 bomb racks; MAU-12 bomb racks and TER-9A triple ejection racks; other chaff and flare, ammunition, and pylons; launcher adaptors and weapons interfaces; fuel tanks and attached hardware; travel pods; aircraft and weapons integration, test, and support equipment; electronic warfare database and mission data file development; precision measurement and calibration laboratory equipment; secure communications; cryptographic equipment; precision navigation equipment; aircraft and personnel support and test equipment; spare and repair parts; repair and return services; maps, publications, and technical documentation; studies and surveys; classified/unclassified software and software support; personnel training and training equipment; facilities and facility management, design and/or construction services; 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 \$1.673 billion. This proposed sale will support the foreign policy and national security objectives of the United States by helping to improve the security of a NATO ally that is a force for political stability and economic progress in Europe. The proposed sale will improve Bulgaria's capability to meet current and future threats by enabling the Bulgarian Air Force to deploy modern fighter aircraft routinely in the Black Sea region. The acquisition of these aircraft would provide Bulgaria a NATO interoperable platform and allow the Bulgarian Air Force to operate more frequently alongside other regional F-16 operators, promoting common doctrine and operations. Bulgaria has shown a commitment to modernizing its armed forces and will have no difficulty absorbing these aircraft and services into its armed forces.



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## TURKEY

### ➔ Cruise Missile ÇAKIR: Roketsan's New Cruise Missile



© Roketsan

Roketsan continues to create new concepts on the battlefield with its new technologies. ÇAKIR – Roketsan's new Cruise Missile – can be launched from fixed and rotary-wing aircraft, Assault Unmanned Aerial Vehicles (AUAVs)/UCAVs, AUSVs, tactical wheeled vehicles and naval platforms, and offers operational versatility against land and surface targets. With a range of over 150 kilometers, ÇAKIR's targets include surface targets, land and surface targets close to shore, strategic land targets, field targets and, caves.

Equipped with a domestic and national KTJ-1750 turbojet engine developed by Kale Arge and the agility brought by its design, ÇAKIR easily performs tasks involving 3D waypoints defined during mission planning. With a unique warhead and hit point selection feature, the Cruise Missile offers a high destructive force against enemy targets. ÇAKIR owes the ability to engage targets with high precision under all weather conditions to its advanced mid-phase and terminal phase guidance

systems. Network-based datalink facilitates Man-in-the-Loop capability for target update, attack/re-attack for the in-flight target of opportunity and mission abort. The most prominent features of ÇAKIR are; its design, which allows the platform to carry multiple payloads up to four missiles, and its ability to perform swarm concept missions with inter-communicating missiles. The swarm concept, through which coordinated attack scenarios with multiple missiles are enabled, can be used to overcome hostile defence systems, and ensures high effectivity against single or multiple targets. ÇAKIR offers high survivability thanks to its unique design with radar absorbing material utilized on the frame. ÇAKIR's ability for super sea-skimming and terrain masking in combination with radar-absorbing structure minimizes the detectability by enemy air-defence systems. Thanks to its Antijam GNSS and altimeter-supported inertial navigation system, ÇAKIR continues on its trajectory even in the event of intense electronic jamming.

### ➔ Turkey, France, Italy to revive steps on SAMP/T missiles



© DBDC-Eurosam in IDEF 2021

According to the Turkish newspaper Daily Sabah, Turkey, France and Italy have decided to continue exploring reviving the steps for the SAMP/T missile defense system, President Recep Tayyip Erdoğan said on 25 March 2022. President Tayyip Erdogan said that Turkey would take "positive steps" with France and Italy on the SAMP-T missile defence system developed by the Franco-Italian EUROSAM consortium.

The president said he discussed the possibility of buying SAMP/T missile defense systems from the Franco-Italian Eurosam consortium with French President Emmanuel Macron and Italian Prime Minister Mario Draghi at the summit. Italy's Draghi, meanwhile, also said that Italy, Turkey and France will revive a cooperation group between the three countries.

"We decided to reactivate the group between Turkey, France and Italy, one of the cooperation platforms created over the years and then interrupted. Soon, the three countries will have a

meeting," Draghi told the Italian press Thursday. "The meeting we had with Erdoğan went well," he said while commenting on the meetings held on the sidelines of the NATO summit.

With the mock-up of the latest development from the company, including the Aster 30 B1NT and the CAMM-ER, the MBDA participated in the international defence exhibition IDEF 2021, which was held in Turkey last August, to showcase the intention of the European missile company to play a role in Turkey. "We fully understand the Turkish will to fully develop a national missile capability, Roketsan being the main player, however we are always available to discuss common business," Michele Di Nunzio, Vice-President Eurasia for MBDA tells the international defence magazine European Defence Review "We look to a win-win approach, where MBDA and Turkey can partner to make business, not to a simple transfer of technology," he explains. The European group can bring some technology bricks to Turkey, while the latter can facilitate the penetration in some markets.

Turkey awarded Eurosam, Aselsan and Roketsan a contract for the definition study of the future Turkish Long-Range Air and Missile Defence System. The contract award was made during the meeting of President Recep Tayyip Erdogan and President Emmanuel Macron on 5 January 2018, in Paris. Scheduled to last 18 months, this definition study aims at preparing the development and production contract for the future system meeting the operational requirements of the Turkish Air Force. The contract was awarded by the SSM (the Undersecretariat for Defence Industries), which is responsible for acquisitions under the President of Republic of Turkey, jointly to Turkish companies Aselsan and Roketsan, and to the Franco-Italian consortium Eurosam; backed by its two shareholders MBDA and Thales. The contract follows on from the Heads of Agreement signed by industry on 14 July 2017 and the Letter Of Intent signed by the French, Italian and Turkish Defence Ministers on 8 November 2017.

This study paves the way for the launch of a three-country joint Long-Range Air and Missile Defence Program. The future system will be ready by the middle of the next decade with a state-of-the-art military capability designed to counter the most challenging threats (stealth aircraft, UAVs, cruise missiles, and ballistic missiles). The system is expected to meet three countries' basic operational needs and it will guarantee Turkey has full employment autonomy and will allow a sovereign choice of integration level within NATO. The joint development activity is expected to support Turkey's indigenous air and missile development program in addition to opening prospects for

exports and longer-term co-operation of Turkey, Italy and France.

## SERBIA

### ➔ Serbian Air Force and Air Defence becomes new C295 operator



© Airbus

The Serbian Ministry of Defence has ordered two Airbus C295s and therefore the Serbian Air Force and Air Defence joins the family of C295 becoming the 36th operator worldwide. The contract was signed in Madrid in the presence of senior government members of the Republic of Serbia and Spain.

This contract will be accompanied by a Government-to-Government supervision agreement between the Ministries of Defence of Spain and the Republic of Serbia, which aims to study the development of future defence programs between both nations. Airbus is committed to maintain and foster its close collaboration with the Republic of Serbia, which already operates Airbus military solutions.

The two aircraft, in transport configuration, will be equipped with the modern avionics suite Collins Aerospace Pro Line Fusion® and will contribute to enhance the air transport capabilities of the Republic of Serbia. Deliveries are expected to commence in late 2023.

With this order 33 countries have already relied on the Airbus C295. With a total of 281 orders worldwide and more than half a million flight hours in operation, this aircraft is the undisputed leader in its segment.

## *Hellenic Air Force procurement and upgrade programs*

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

The first of 84 Greek Lockheed Martin F-16 fighters to be upgraded to the F-16V Viper standard took to the skies for the first time on 17 January 2021 arriving in Texas and at the Lockheed Martin Aero facility. The upgrade to the Viper version is a collaboration between the Hellenic Defense Industry (EAB) and Lockheed Martin. In Texas, all the necessary ground and flight tests will be performed, including simulation in special cabins, to determine that the aircraft meets all the necessary specifications.

The F-16V had been upgraded at the Tanagra facility of Hellenic Aerospace Industry (HAI), which is to carry out the modifications to the fleet in a program that was approved by the U.S. government

in October 2017. The value is estimated to reach around \$1.5 billion. The first airframe, carrying the serial number 005, was originally delivered in 2009 as an F-16C Block 52+ with Pratt & Whitney F100-PW-229 engine as part of the Peace Xenia IV sale. Greece acquired a total of 90 Block 52/52+ aircraft and the survivors are the subject of the upgrade. The Hellenic Air Force (HAF) also received 80 Block 30/50 aircraft powered by the General Electric F110, but they are not part of the F-16V program.

After modernization, the aircraft is now an F-16V in Block 72 configuration, the “2” denoting its P&W powerplant. The key element of the modernization is the installation of the Northrop Grumman APG-83 Scalable Agile Beam Radar (SABR), a sensor with an active electronically scanned array (AESA).

The cockpit has a new center pedestal display and is compatible with the Joint Helmet-Mounted Cueing System (JHMCS) II. Other improvements include a new mission computer, an automatic ground collision avoidance system, enhanced electronic warfare capabilities, Link 16 datalink, and an advanced identification friend or foe interrogator system. The next three F-16Vs are also expected to go to the U.S. to join the test fleet. A successful conclusion of the certification process will result in approval by Lockheed Martin for HAI to proceed with the remainder of the upgrade program which is expected to be completed by June 2027.



### Project background

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. Lockheed Martin expects to complete the task by Jun 30, 2027. Lockheed Martin official said that the first two years will be spent on engineering for the prototype and the registration of the systems. The installation on the Greek fighter jets will take place during the third year of the program, and the Hellenic Air Force pilots will be trained in the fourth year. L3 Technologies will upgrade the F-16 fighter plane training system of Greek Air Force F-16 in a \$28 million contract. Improving Aircrew Training Devices for conversion of Hellenic Air Force F-16s to the new F-16V configuration. The new variant includes add-ons which include electronically scanned array radar, a new mission computer and electronic warfare suite, automated ground collision avoidance system, and various cockpit improvements.

On 17 October 2017, the State Department has made a determination approving a possible Foreign Military Sale to the Government of Greece for an upgrade of F-16 aircraft to an F-16 Block V configuration. The estimated cost is \$2.404 billion. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale on October 16, 2017. The Government of Greece has requested a possible purchase of an upgrade of its existing F-16 fleet to an F-16 Block V configuration which includes up to one hundred twenty-five (125) APG-83 Active Electronically Scanned Array (AESA) Radars (includes two (2) spares); one hundred twenty-three (123) Modular Mission Computers (MMCs); one hundred twenty-three (123) LINK-16 Multifunctional Information Distribution System Joint Tactical Radio Systems (MIDS-JTRS) with TACAN and EHSI; one hundred twenty-three (123) LN260 Embedded Global Navigation Systems (EGI)/Inertial Navigation Systems (INS); and one hundred twenty-three (123) Improved Programmable Display Generators (iPDGs). Also included in the proposed sale are up to one hundred twenty-three (123) APX-126 Advanced Identification Friend or Foe (AIFF) Combined Interrogator Transponders (CIT); one (1) Joint Mission Planning System (JMPS);

one (1) F-16V Simulator; upgrade to two (2) existing simulators; one (1) Avionics Level Test Station; Secure Communications, cryptographic equipment and navigation equipment; upgrade and integration of the Advanced Self-Protection Integrated Suite (ASPIS) I to ASPIS II on twenty-six (26) F-16s; Ground Support System, systems integration and test; spares and repair parts, support and test equipment; personnel training and training equipment; publications and technical documentation; U.S. Government and contractor engineering, logistical, and technical support services; and other related elements of logistics and program support. The total estimated program cost is \$2.404 billion.

Greece currently employs a mix of 154 F-16s in Block 30, Block 50, Block 52+, and Block 52+ Advanced configurations. Therefore, Greece will have no difficulty absorbing the upgrade of these aircraft from an operation and support standpoint.

### **Greece equips itself with the RAFALE in the continuity of a partnership with DASSAULT AVIATION of more than 45 years**

On 24 March 2022, Eric Trappier, Chairman and CEO of Dassault Aviation, and Vice-Admiral Aristidis Alexopoulos, Director General of Armaments and Investments of the Greek Ministry of Defence, signed in Athens, in the presence of Mrs. Florence Parly, French Minister of the Armed Forces, and Mr. Nikolaos Panagiotopoulos, Greek Minister of National Defence, a contract for the acquisition of six additional new Rafale aircraft.

This new contract, which follows Greece's acquisition of 18 Rafale in January 2021, will increase to 24 the number of Rafale operated by the Hellenic Air Force.

Following the arrival at Tanagra Air Base of the first six Rafale of the Hellenic Air Force on 19 January 2022, the 18 Rafale relating to the first contract will be fully deployed in Greece by the summer 2023. The six additional Rafale will then be delivered to the Hellenic Air Force shortly, thereafter, starting from the summer 2024.

As a European country and NATO member, Greece is a major strategic ally of France. Dassault Aviation is honored by the Greek government's decision to proceed with this new Rafale order, which extends nearly fifty years of uninterrupted partnership.

This additional order reflects the Greek government's great satisfaction with the Rafale's



operational qualities, as well as its determination to strengthen the combat capabilities of the Hellenic Air Force in order to guarantee the country's sovereignty and ensure the security of its population in an increasingly unstable geopolitical context.

"This new contract demonstrates the Greek government's confidence in the Rafale, which is already actively contributing to guaranteeing Greece's sovereignty and operational independence. Once again, I am honored by the Hellenic Air Force's renewed trust in Dassault Aviation, reflecting nearly half a century of unwavering partnership. I would also like to assure the Greek authorities of our full commitment to fully meet their expectations," said Eric Trappier after the signing ceremony. Estimated budget is in the area of 1.092.300.000 €

On 25 January 2021, in the premises of the Greek Ministry of National Defence, Theodoros Lagios, General Director of Armament and Investments of the Greek MOD, and Eric Trappier, Chairman and CEO of Dassault Aviation, signed a contract, worth of 1,9 million euro for the acquisition of 18 Rafale aircraft for the Hellenic Air Force, as well as a

contract worth of 400.000 million euro for the logistical support of the fleet. This signing ceremony was held in Athens in the presence of Mrs. Florence Parly, Minister of the Armed Forces of France, and Mr. Nikolaos Panagiotopoulos, Minister of National Defense of Greece.

As a European country and member of NATO, Greece is a major strategic partner of France. Dassault Aviation is honored by the Greek government's decision, that extends an uninterrupted partnership for 45 years. The order for 18 Rafale includes 12 Rafale recently in service with the French Air Force and 6 new Rafale produced at Dassault Aviation plants. To meet the urgent need of the Greek authorities, the deliveries of aircraft will begin in the summer of 2021 and will be spread over two years. The logistic support contract will support the Hellenic Air Force Rafale's air activity over four and a half years, maintaining the availability of equipment and systems at the highest level.

The arrival of the Rafale in Greece highlights the quality of the strategic relationship between Greece

and France and the continuation of more than forty-five years of solid partnership with Dassault Aviation and its industrial partners Thales and Safran. As with the Mirage F1 in 1974, the Mirage 2000 in 1985 and finally the Mirage 2000-5 in 2000, the Rafale is an opportunity to launch new cooperation's with the Greek aerospace industry.

"Greece is a leading European partner, a major member of NATO and a special partner of France, with which Dassault Aviation has stood steadfastly by its side for more than 45 years. The continuity of our presence in Greece, even in the most difficult times, is a token of the quality of this relationship. That is why I am proud and happy to sign today this contract, which symbolizes the extension of the commitment of Dassault Aviation towards Greece since 1974. I would like to thank the Greek authorities for their renewed confidence in us. I assure them of our total mobilization to achieve the objectives that are defined", said Eric Trappier, Chairman and CEO of Dassault Aviation

### **MBDA to arm Hellenic Air Force's new Rafale fighter jets**

The new aircrafts' weapons will benefit from the strong commonality with those from the Mirage 2000s and Mirage 2000-5s currently in service in the Hellenic Air Force. Like these, the Rafales will be armed with SCALP cruise missiles, AM39 Exocet anti-ship missiles and MICA multi-mission air-to-air missiles. Additionally, MBDA will also supply Meteor beyond visual range air-to-air missiles.

Eric Béranger, CEO of MBDA, said: "The signing of this agreement turns a new page in our relationship with Greece, which we have had for more than half a century. The country was the very first customer of the Exocet missile in 1968, showing great confidence in it and in our predecessor companies. This confidence has been renewed over the years and is being renewed again today. It is our duty to do everything we can in order to continue delivering on this confidence into tomorrow."

MBDA is the only European group capable of designing and producing missiles and missile systems that correspond to the full range of current and future operational needs of the three-armed forces (land, sea and air).

### **Follow -on Support for F100-PW-229 engine maintenance**

On 12 January 2022, the State Department has made a determination approving a possible Foreign

Military Sale to the Government of Greece of Follow-on Support for F100-PW-229 Engine Maintenance and related equipment for an estimated cost of \$233 million. The Defense Security Cooperation Agency delivered the required certification notifying Congress of this possible sale today.

The Government of Greece has requested to buy parts and services to support follow-on depot level maintenance and sustainment of F100-PW-229 engines to include spare, repair parts, and accessories; repair and return services; publications and technical documentation; U.S. Government and contractor engineering, technical, and logistical services; and other related elements of logistical and program support. The overall total estimated value is \$233 million.

This proposed sale will support the foreign policy and national security objectives of the United States by helping to improve the security of a NATO ally, which is an important partner for political stability and economic progress in Europe.

The proposed sale will improve Greece's capability to meet current and future threats by providing greater depth of repair capability for engines on their F-16 Block 52+/52+ Advanced aircraft, sustaining their weapon system, and improving aircraft capability rates. Greece has demonstrated a continued commitment to modernizing its military and will have no difficulty absorbing this additional sustainment support into its armed forces.

The proposed sale of these services will not alter the basic military balance in the region. There are no principal contractors for this proposed sale. There are no known offset agreements proposed in connection with this potential sale. Implementation of this proposed sale will not require the assignment of any additional U.S. Government or contractor representatives outside the United States.

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

In January 2021, Greek Defence Minister Nikolaos Panagiotopoulos said that the country plans to acquire 40 fighter aircraft inclusive of French Rafales and U.S.-made F-35 jets.

"Sooner or later we will enter the discussion about a 5th generation aircraft which is the F-35," the minister said during an interview with Alpha TV. Greek media has also reported that the Greece formally requested to buy between 18 and 24 new or used Lockheed Martin F-35s.

Greek Prime Minister Mitsotakis has also said "If the country's current fiscal state allows it, we will seriously consider purchasing F-35 fighter jets, because they are the most readily available and advanced in the market."

## **International Flight Training Center of the Hellenic Air Force**

On the 13-14 September 2021, was contacted a Program Manager Review meeting (PMR-1) at the Hellenic Air Force 120 Wing premises between GDDIA and HAIFGS officers and representatives International Defense Cooperation Directorate of the Israel Ministry of Defense and the Israeli company ELBIT.

The aim of the meeting was to access the work progress of the establishment of International Flight Training Center of the Hellenic Air Force in Kalamata.

On April 18, 2021, Elbit Systems Ltd. announced, further to the Company's announcement of January 5, 2021, that it was awarded a contract valued at approximately \$1.65 billion (approximately €1.375 billion) for the establishment and operation of the International Flight Training Center of the Hellenic Air Force, as part of an agreement between the Israeli Ministry of Defense and the Hellenic Ministry of National Defense.

The contract will be performed over a period of approximately 20 years and will include price indexation. Under the contract, Elbit Systems will supply new M-346 training aircraft and will maintain the entire training fleet, comprised of dozens of M-346 and T-6 training aircraft for a period of approximately 20 years. In addition, the Company will provide its latest advanced Embedded Virtual Avionics (EVA) onboard the training aircraft, deliver networked flight simulators and an array of Ground-Based Training Stations (GBTS) as well as a command-and-control system to enable efficient management of the flight training operation.



## THEON SENSORS & SCYTALYS AT WORLD DEFENCE SHOW 2022

**THEON SENSORS** participated at the WORLD DEFENSE SHOW, which took place 06 - 09 March 2022 in Riyadh-Saudi Arabia. The inaugural edition of the WDS was beyond doubt an important event and a global gathering on defense interoperability. THEON SENSORS grasped the opportunity to show its latest innovations and developments in the defense sector.

The main product lines are: Night Vision Monoculars and Binoculars, Family of Night Vision Sights, Clip-on Night Sights, Night Driver's Viewers, Digital day and night cameras and upgrade kits for armoured vehicles, Thermal Stand-alone and Clip-on uncooled Sights, Vehicle and Platform based Thermal imaging systems, SWIR systems, Optical and Mechanical customized design, ILS and Maintenance Services.

With production facilities and head office in Athens, as well as offices in Kempen, Arlington, Abu Dhabi and Singapore and with more than 100.000 systems in service or under contract in more than 55 countries around the world, THEON SENSORS\* is today one of the Market Leaders in Night Vision and Thermal Imaging Systems for military and security applications.

All products are in-house designed by a team of experienced and qualified engineers specializing in all related engineering disciplines such as optical, mechanical, electronics and system design. Emphasis is given on providing high performing and ergonomically advanced systems that increase soldier's safety and mission success rate during night operations.

**SCYTALYS** is a leading software development and system integration company, operating

internationally with its main offices in Athens. The company counts more than 25 years of operation in the Defence and Security sectors, where it specializes in the specification, design, development, integration, installation, testing and follow-on support of:

### Tactical Data Links and Interoperability Solutions

- Universal Data Link – Multi Data Link Gateway, incorporating NATO/U.S. Standard (Link1, Link 11, Link 16, JREAP, Link 22)
- $\Lambda$  Link (Lamda Link) providing a reliable, customizable solution to end user's specific needs and effective solution for nations that cannot use the

NATO standard Data Links, or are just looking for a supplementary solution for DL sovereignty

- MTPS – Multi-TDL Planning system Mission and Command & Control Systems
- Mission Systems for multiple domains
- Air Defence Command & Control Systems
- Surveillance solutions
- Maritime Surveillance – M2IMS Airborne designed for a wide spectrum of roles and platforms, such as MPAs and medium to light Surveillance platforms
- Maritime Surveillance – M2IMS Surface Patrol designed for a wide spectrum of roles and platforms, such as Fast Patrol vessels, SOF fast crafts, RIVs etc.
- Correlation Engine – R 1.0 supplementing any legacy Mission / C2 system with correlation capabilities from a wide range of sensors and Data Links
- UxV Systems providing Innovative solutions for rendering UAS systems in efficient network-centric hubs collecting and disseminating information through TDL and MANET solutions environment
- Portable Reconnaissance Image Screening System – PRISS providing connection, extraction and processing of imagery taken from a Reconnaissance pod

© Theon Sensors



## ***Leonardo C-27J Next Generation, unrivalled performance and mission flexibility***

Widely recognized as the most effective multi-role military transport aircraft in its size class, the C-27J Next Generation features new avionics and aerodynamic developments for greater efficiency and improved operating performance.

### **An unrivalled tactical solution**

Used in the most challenging operational environments, from the high altitudes of the Andes to Afghanistan, the C-27J's performance and operating efficiency are enabled by new avionics, featuring a glass cockpit with five multi-functional color screens, a

radar system for tactical transport missions and advanced communication systems. The system architecture guarantees interoperability with other transport aircraft and can be easily integrated with in-flight refuelling, self-protection, secure communications and ballistic protection, allowing the aircraft to operate in high threat environments, transporting materials, light vehicles and personnel to wherever they are needed. The C-27J can operate in complete autonomy thanks to its Auxiliary Power Unit (APU).

### **Unmatched capacity**

The C-27J boasts the largest cargo compartment in its category, capable of supporting about five tonnes per square metre and adjustable in height and inclination for easy loading and unloading. With the best descent and climb rates (4,000ft/min and 2,500 ft/min), it can perform tactical maneuvers at 3g and is qualified for short take-off and landing (STOL) on snowy, sandy and unprepared runways.

### **For a vast range of missions**

A multitude of kits and easy to install and transportable roll-on/roll-off mission systems allow the C-27J to be rapidly transformed into the configuration required for the relevant mission. As a 'tactical airlifter', the aircraft's versatility extends from airlifts of troops and cargo to airdrops of paratroopers and materials, from medical battlefield evacuation to VIP transportation, from





humanitarian assistance and natural disaster response to – last but not least - firefighting: both the Romanian and Peruvian Air Forces are using the C-27J in firefighting missions with Caylym “Guardian” containers while a more capable Fire-Fighting tank solution is in development: it involves the integration of the MAFFS 2 system for the pressure release of water / retarder. Highly effective, this solution does not require any structural modification to the aircraft which thus maintains all its operational characteristics and - a great advantage compared to dedicated solutions - guarantees a unique operational flexibility.

The C-27J can be configured in the Maritime Patrol (MPA), Anti-Submarine Warfare (ASW) and Command-Control-Communications, Intelligence, Surveillance and Reconnaissance (C3ISR) versions. The mission capabilities of the C-27J Next Generation MPA can be tailored to the specific customer needs. Typical tasks include Anti-Submarine Warfare (ASW) and Anti-Surface Warfare (ASuW), thanks to the aircraft dedicated suite and large capacity to carry weapons and sonobuoys, along with Search and Rescue (SAR), Maritime Patrol, Command, Control, Communication, Intelligence, Surveillance and

Reconnaissance (C3ISR). Six wing pylons can employ lightweight torpedoes, anti-ship missiles and naval mines.

### **Sensors, systems and equipment**

The C-27J MPA capabilities are centered around the ATOS mission system by Leonardo Electronics Division, including up to 5 operator stations that manage the sensors, analyze the gathered information and perform a true data fusion to provide mission operators, pilots, control centers and operating assets with a detailed, real time overall tactical picture. An AESA Search Radar, Electro-Optical/Infra-Red (EO/IR) system, Electronic Support Measure (ESM) for ISR and SIGINT/ELINT tasks, Magnetic Anomaly Detector (MAD), as well as an Acoustic Subsystem, Sonobuoy and Ordnance Launchers and the flexible Stores Management System are among the typical sensors and equipment which can be installed on the C-27J Next Generation ASW.

The Communication System including data links and SATCOM capabilities allows maximum interoperability with cooperating land based, sea based and airborne units, along with quick data dissemination.

The C-27J Spartan is operated today by the Air Forces of Italy, Greece, Bulgaria, Lithuania, Romania, Slovakia, United States, both with US Coast Guard and SOCOM, Mexico, Australia, Peru, Kenya, Morocco, Chad, Zambia and a still undisclosed customer. Rugged, reliable, proven and versatile, Leonardo's C-27J Spartan has been conceived for the most demanding military scenarios: its performance and operational flexibility position it as the most effective multi-mission medium turboprop airlifter available on the market, able to operate from the most rudimentary airstrips and in extreme environmental conditions.

A recent agreement between Slovenia and Italy added a new significant customer to the client list, another country choosing the Spartan not only for its military operations but also for its flexibility to civil protection and disaster recovery tasks.

### **Leonardo's ATOS mission system: ready to meet maritime patrol needs**

With a range of requirements in the region and beyond for maritime patrol aircraft (MPA) for security missions such as anti-piracy and military missions such as anti-submarine warfare (ASW), Leonardo considers that its "ATOS" (Airborne Tactical Observation Surveillance) mission system, which equips the company's ATR 72MP and C-27J as well as other platforms, is ready to meet the needs of customers. Customers in Europe, Africa and Australia have already selected ATOS, with more than 60 systems installed on 10 different types of aircraft.

ATOS is a mission system optimised for surveillance. Able to cover vast areas of land and sea, ATOS collects and fuses data from radar, electro-optical camera systems and other sensors to present a clear and comprehensive picture of the operator's environment. The system integrates information from its various sensors in real time and delivers useful information to the operator, minimising the time and effort needed to understand an ongoing situation. This is essential for Armed Forces, Police or other governmental operators needing to make quick and high-quality decisions.

ATOS can also support well-informed decision making through its integration into a wider surveillance network, accessing information collected by other aircraft and naval or ground units. These features make ATOS ideal for a wide variety of missions ranging from the prevention of illegal activities to border control, particularly along coastlines. The modular nature of ATOS also means that its capability can be extended beyond surveillance, for example ATOS is capable of one of the world's most complex missions: Anti-Submarine Warfare (ASW).

One of the most important features of the system is that it can be easily integrated

into any aircraft, whether that platform is new or already in operation. These can range from helicopters up to much larger fixed-wing patrol aircraft. Depending on the size of the platform, ATOS can scale accordingly, with a compact solution for helicopters such as the AW139, while a larger aircraft such as the ATR 72 would feature multiple operator consoles.

Leonardo also offers a complete ATOS-based package, delivering an aircraft integrated with its mission system and sensors. Examples include the ATR families of patrol aircraft (ATR-42/72MP, P-72A) and the C-27J Spartan multi-mission airlifter, which are manufactured by Leonardo and fitted with its own avionics solutions and sensors. This approach is becoming increasingly popular as customers are able to rely on a single supplier to deliver a complete solution.

ATOS will also soon be able to exploit cloud technologies to draw on vast shared databases, complementing the information gathered by the aircraft's on-board sensors and further expanding the system's capacity for analysis and data fusion.

The next step will be the introduction of Artificial Intelligence (AI) into ATOS. This technology will make it possible for the system to process quantities of data that are unimaginable today, ensuring that the operator has an unprecedentedly complete, real-time view of their environment.

The roadmap for the mission system is that it will become increasingly autonomous in terms of analysis, allowing users to concentrate fully on decision making. Data processing that takes several weeks today will, in the future, be completed within hours. The ATOS of the future will be connected to satellites, national and international databases, surveillance networks and, potentially, directly to the Combat Management Systems (CMS) aboard naval vessels, another of Leonardo's areas of expertise.

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## 2022 EUROSATORY 13-17 JUNE 2022 / PARIS

### **Eurosatory, the world's leading land and airland defence and security exhibition will be held in June 2022.**

The Ukrainian crisis, which reflects the shift from asymmetric fighting to high-intensity interstate conflict, is leading EU member states to decide to invest more in their defence and security capabilities. Several countries have already significantly increased their budgets. Besides Europe, many countries are reflecting on this paradigm shift, which requires a rethinking of the models and capabilities of their armed and security forces in order to adjust to new threats. EUROSATORY 2022, the world's leading land and airland defence and security exhibition, will be held from 13 to 17 June in Paris - France.

It can directly and practically contribute to these reflections and perspectives through the very wide range of solutions presented, covering the entire spectrum of capabilities, from proven equipment to the latest technological innovations.

EUROSATORY will also be a privileged place for exchange, notably through the numerous conferences hosted and the large number of official delegations and experts attending. Now, three months away from the event, in a context of regression of the COVID 19 pandemic and lowering of sanitary restrictions in France, EUROSATORY continues to expand with already more than 1,200 exhibitors from sixty countries registered, large groups, SMEs and start-ups. EUROSATORY is shaping the future of land and airland defence and security.

### **IAI Completes Delivery of Dozens of SATCOM Terminals for Fighter Aircraft**

Israel Aerospace Industries (IAI) has completed the delivery of dozens of SATCOM (Satellite Communication) terminals with a conformal electronically steered antenna for fighter aircraft. The SATCOM terminals are based on AESA (Active Electronic Scanned Array) technology and are installed on advanced 4.5 generation Western fighter jets. The ground-breaking technology is currently on display at Satellite 2022, in Washington D.C.

IAI's beyond line-of-sight solution ensures seamless voice and data communications, at any location, and even during fast, low-altitude flight. Utilizing a unique flush-mounted antenna, the compact AESA SATCOM system eliminates antenna and radome drag, and is therefore optimally suited to a fighter aircraft's aggressive flight envelope, as well as to other platforms requiring low-drag performance. By relying on a single LRU phased array, the technology is installed and integrated smoothly and

ensures a low life cycle cost. With a high-performance and robust network design, the system connects hundreds of registered users, and switches seamlessly between frequencies, at any given moment, according to the mission scenario and requirements. IAI's airborne SATCOM systems are pioneers in the market with decades of operational experience. The systems have been deployed worldwide on hundreds of fighter jets in a variety of models.



## Arquus selected to provide mobility for new CAESAR © MK II SPG

On February 19, 2022, the Prime Minister, Mr. Jean CASTEX, announced the notification to Nexter Systems of the contract for the development of the new generation CAMion Equipped with an ARtillery System (CAESAR ©), also known as CAESAR © MK II.

As a long-time supplier of tactical and logistical mobility to the armed forces, Arquus is delighted to have been selected by Nexter to supply the new rolling base for the CAESAR MK II.

Already the designer of the mobility base for the French Army's current generation Caesar, Arquus is very proud to continue this demanding partnership to provide the next generation mobility capabilities for the Army's artillery units.

The selection of Arquus by Nexter Systems is a recognition of the company's expertise in tactical mobility. It is also a recognition of the excellence of the current CAESAR © carrier, produced by Arquus from the start. World reference in mobility for a self-propelled gun, the first-generation CAESAR © is indeed based on a Sherpa Medium chassis designed and produced by Arquus.

During its operational career in the French Army, the CAESAR © has proven its high mobility and ruggedness, including in the most demanding theaters of operations and environments. Within Task Force Wagram in Iraq in particular, the CAESAR © has proven the relevance of its design choices, appreciated by user units for its mobility and robustness, as well as by maintainers for its ease of maintenance.

Designed and produced entirely in France, the CAESAR © MK II carrier will benefit from a 460-horsepower engine, compared to 215 on the current vehicle. This upgrade will provide the CAESAR © MK II with greater tactical mobility, further increasing its ability to move in difficult terrain, particularly to protect itself from the adversary's retaliatory actions. The carrier's capabilities have also been enhanced by an increase in payload, allowing it to carry more ammunition and provide greater protection.



Thanks to its light weight and design choices, particularly the wheel, the CAESAR © MK II will offer a very low cost of ownership, as well as unfailing mobility. Its compact size, made possible by its 6x6 silhouette, will enable it to be flown on board A400M aircraft with minimal preparation.

The CAESAR © MK II carrier will be produced at the Limoges site, Arquus' Center of Excellence for New Vehicle Production. With its latest generation chassis, the CAESAR © MK II 6x6 carrier prefigures the tactical mobility of tomorrow.

**ARQUUS** is a French Defense company, leader of land mobility solutions. Historical partner of the armies, Arquus has more than 25,000 vehicles currently in service in the French Army. Arquus takes part in the VBMR GRIFFON and EBRC JAGUAR programs, which are the new generation of the French Army's combat vehicles, in the framework of a Temporary Grouping of Companies. Arquus is notably in charge of designing and delivering the drivelines and the self-defense weapon systems for these two vehicles. Arquus also takes charge of all the logistics for the spare parts and organs of the VBMR and EBRC vehicles, thanks to its new logistics facility in Garchizy. Expert of support solutions, with more than 20,000 vehicles serviced daily, Arquus presents complete support offers, built on the company's historical knowledge.



## Leonardo's LIONFISH® systems will equip the Royal Netherlands Navy's new naval units

Already aboard a number of naval platforms worldwide, Leonardo's LIONFISH® family of defense systems has now also been selected by the Royal Netherlands Navy. The Navy has chosen the "LIONFISH® Top" variant to equip its Holland-class patrol vessels, LPD (Landing Platform Dock) and JSS (Joint Support Ship) units, Johan de Witt and Karel Doorman classes, and Den Helder-class Combat Support Ship.

The LIONFISH® Top is one of three 12.7mm variants in the new family of remotely-controlled naval turrets. "Ultralight" and "Inner Reloading" models are also available in the same calibre. The company also offers a 20mm "LIONFISH® 20" model.

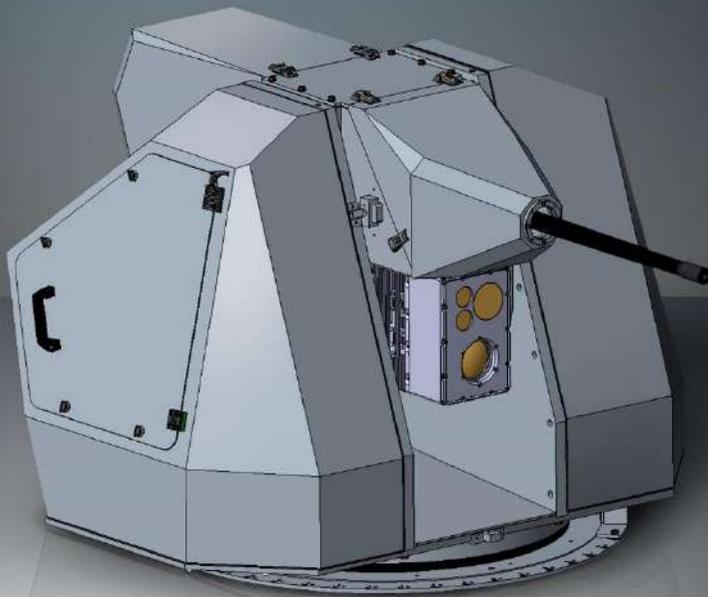
The LIONFISH® 12.7 Top weighs less than 300 kg and is particularly effective against close threats and in asymmetric scenarios (ASymmetric Warfare - ASyW). Effectiveness and accuracy, even at long range, are guaranteed by the use of a cooled infrared sensor that integrates Leonardo's Mini Colibri optics. This is common across the whole

turret family, which can also integrate an uncooled sensor. Depending on the technology used, the detection range can be up to 12 km. With customers' needs in mind, Leonardo has created state-of-the-art technologies which can effectively and accurately handle various type of threats, including uncrewed systems.

The LIONFISH® family stands out for its modularity, lightweight and common architecture, which allow the turrets to be installed and operated on board secondary platforms, both as a primary and secondary defence system, with no deck penetration. All systems in the family can self-calculate firing solutions and engage fast-moving threats, even when installed on high-speed platforms.

Drawig on its experience developing advanced technologies such as the OTO 76/62 Super Rapido and the OTO 127/64 LW Vulcano, Leonardo has developed its new defence systems to meet market requirements, that are increasingly looking towards compact and stealth technologies, including to equip uncrewed platforms. At the same time the company continues to advance its product reliability, optimise maintenance times and drive competitiveness.

The choice of LIONFISH® highlights the strategic relationship between Leonardo and the Royal Netherlands Navy, which also recently chose Leonardo's OTO 127/64 LW Vulcano systems for its four De Zeven Provinciën class multi-role units.



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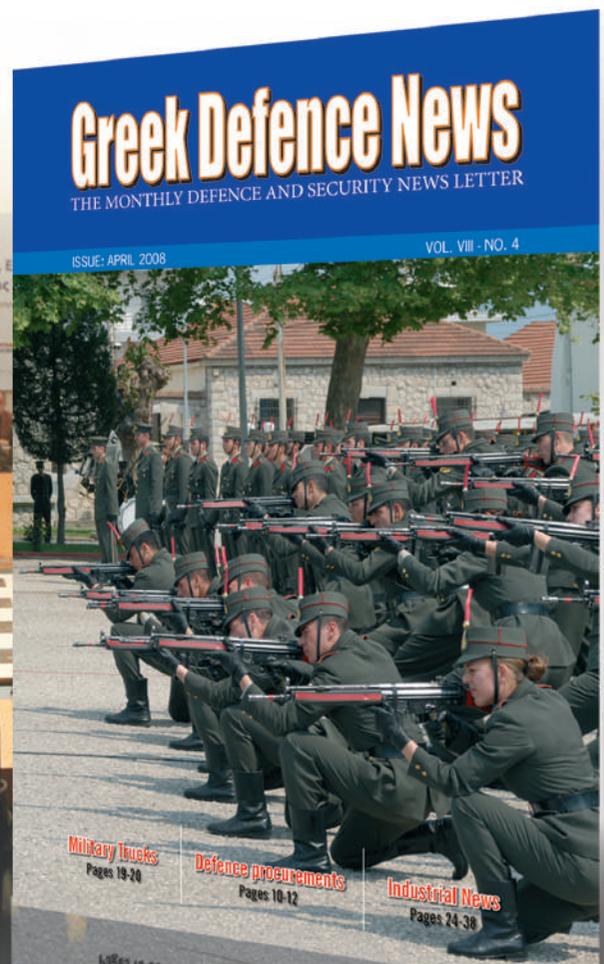
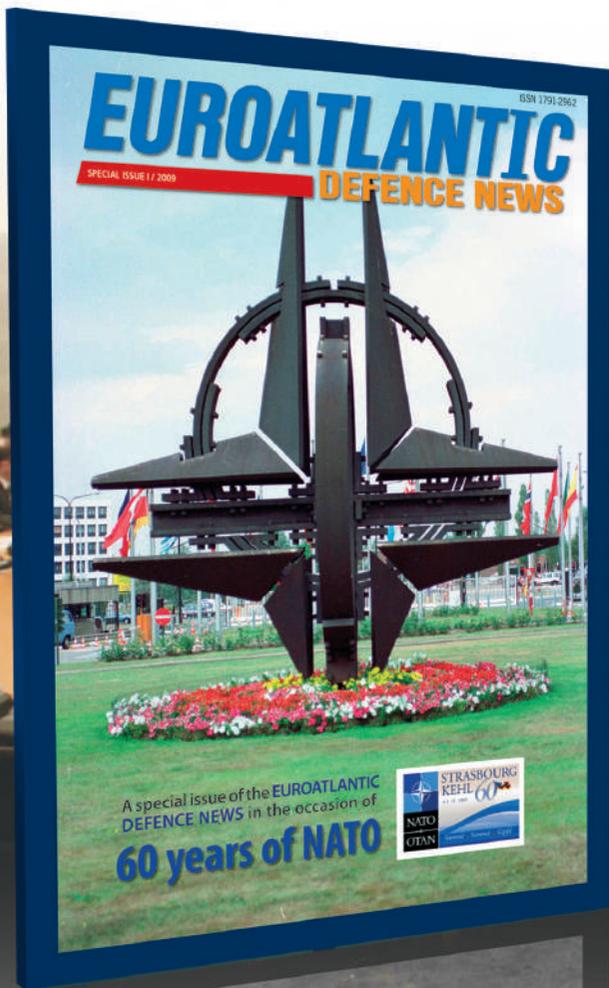
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